NOVARTIS AG
Form 20-F
January 29, 2014

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As filed with the Securities and Exchange Commission on January 29, 2014

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington D.C. 20549

FORM 20-F

o REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

ý ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934 for the fiscal year ended December 31, 2013

OR

o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

o SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission file number 1-15024

NOVARTIS AG

(Exact name of Registrant as specified in its charter)

NOVARTIS Inc.

(Translation of Registrant's name into English)

Switzerland

(Jurisdiction of incorporation or organization)

Lichtstrasse 35
4056 Basel, Switzerland

(Address of principal executive offices)

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Securities registered pursuant to Section 12(b) of the Act:

Title of class	Name of each exchange on which registered
American Depositary Shares each representing 1 share	**New York Stock Exchange, Inc.**
Ordinary shares, nominal value CHF 0.50 per share*	**New York Stock Exchange, Inc.***

Securities registered or to be registered pursuant to Section 12(g) of the Act:

None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

2,426,084,308 shares

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ý No o

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes o No ý

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes ý No o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act (Check one):

Large accelerated filer ý Accelerated filer o Non-accelerated filer o

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

o U.S. GAAP ý International Financial Reporting Standards as issued by the International Accounting Standards Board o Other
If "Other" has been checked in response to the previous question indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 o Item 18 o

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes o No ý

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Not for trading but only in connection with the registration of American Depositary Shares representing such ordinary shares.

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INTRODUCTION AND USE OF CERTAIN TERMS

Novartis AG and its consolidated affiliates publish consolidated financial statements expressed in US dollars. Our consolidated financial statements found in Item 18 of this annual report on Form 20-F (Form 20-F) are prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB).

Unless the context requires otherwise, the words "we," "our," "us," "Novartis," "Group," "Company," and similar words or phrases in this Form 20-F refer to Novartis AG and its consolidated affiliates. However, each Group company is legally separate from all other Group companies and manages its business independently through its respective board of directors or other top local management body. No Group company operates the business of another Group company. Each executive identified in this Form 20-F reports directly to other executives of the Group company which employs the executive, or to that Group company's board of directors.

In this Form 20-F, references to "US dollars" or "$" are to the lawful currency of the United States of America, and references to "CHF" are to Swiss francs; references to the "United States" or to "US" are to the United States of America, references to the "European Union" or to "EU" are to the European Union and its 28 member states, and references to "Americas" are to North, Central (including the Caribbean) and South America, unless the context otherwise requires; references to "associates" are to employees of our affiliates; references to the "FDA" are to the US Food and Drug Administration, references to "EMA" are to the European Medicines Agency, an agency of the EU, and references to the "CHMP" are to the EMA's Committee for Medicinal Products for Human Use; references to "ADR" or "ADRs" are to Novartis American Depositary Receipts, and references to "ADS" or "ADSs" are to Novartis American Depositary Shares; references to the "NYSE" are to the New York Stock Exchange, and references to the "SIX" are to the SIX Swiss Exchange.

All product names appearing in *italics* are trademarks owned by or licensed to Group companies. Product names identified by a "®" or a " " are trademarks that are not owned by or licensed to Group companies.

FORWARD-LOOKING STATEMENTS

This Form 20-F contains certain "forward-looking statements" within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Other written materials filed with or furnished to the US Securities and Exchange Commission (SEC) by Novartis, as well as other written and oral statements made to the public, may also contain forward-looking statements. Forward-looking statements can be identified by words such as "potential," "expected," "will," "planned," "pipeline," "outlook," or similar terms, or by express or implied discussions regarding potential new products, potential new indications for existing products, or regarding potential future revenues from any such products; potential shareholder returns or credit ratings, the potential outcome of the share buyback being initiated; or regarding potential future sales or earnings of the Novartis Group or any of its divisions; or by discussions of strategy, plans, expectations or intentions. You should not place undue reliance on these statements.

Such forward-looking statements are based on the current beliefs and expectations of management regarding future events, and are subject to significant known and unknown risks and uncertainties. Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those set forth in the forward-looking statements. There can be no guarantee that any new products will be approved for sale in any market, or that any new indications will be approved for any existing products in any market, or that any approvals which are obtained will be obtained at any particular time, or that any such products will achieve any particular revenue levels. Nor can there be any guarantee that shareholders will achieve any particular level of shareholder returns or

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regarding the potential outcome of the share buyback being initiated. Neither can there be any guarantee that the Group, or any of its divisions, will be commercially successful in the future, or achieve any particular credit rating.

In particular, management's expectations could be affected by, among other things:

- unexpected regulatory actions or delays or government regulation generally;
- the potential that the strategic benefits, synergies or opportunities expected from the divestment of our former blood transfusion diagnostics unit may not be realized or may take longer to realize than expected;
- the inherent uncertainties involved in predicting shareholder returns or credit ratings;
- the uncertainties inherent in research and development, including unexpected clinical trial results and additional analysis of existing clinical data;
- Novartis' ability to obtain or maintain proprietary intellectual property protection, including the ultimate extent of the impact on Novartis of the loss of patent protection and exclusivity on key products which commenced in prior years and will continue this year;
- unexpected manufacturing and quality issues, including the final resolution of the Warning Letters previously issued to us with respect to Sandoz and Consumer Health manufacturing facilities;
- global trends toward health care cost containment, including ongoing pricing pressures;
- uncertainties regarding actual or potential legal proceedings, including, among others, actual or potential product liability litigation, litigation and investigations regarding sales and marketing practices, government investigations and intellectual property disputes;
- general economic and industry conditions;
- uncertainties regarding the effects of the persistently weak global economic and financial environment, including the financial troubles in certain Eurozone countries;
- uncertainties regarding future global exchange rates; uncertainties regarding future demand for our products.

Some of these factors are discussed in more detail in this Form 20-F, including under "Item 3. Key Information 3.D. Risk factors," "Item 4. Information on the Company," and "Item 5. Operating and Financial Review and Prospects." Should one or more of these risks or uncertainties materialize, or should underlying assumptions prove incorrect, actual results may vary materially from those described in this Form 20-F as anticipated, believed, estimated or expected. We provide the information in this Form 20-F as of the date of its filing. We do not intend, and do not assume any obligation, to update any information or forward-looking statements set out in this Form 20-F as a result of new information, future events or otherwise.

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PART I

Item 1. Identity of Directors, Senior Management and Advisers

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information

3.A Selected Financial Data

The selected financial information set out below has been extracted from our consolidated financial statements prepared in accordance with IFRS as issued by the IASB. Our consolidated financial statements for the years ended December 31, 2013, 2012 and 2011 are included in "Item 18. Financial Statements" in this Form 20-F.

All financial data should be read in conjunction with "Item 5. Operating and Financial Review and Prospects". All financial data presented in this Form 20-F are qualified in their entirety by reference to the consolidated financial statements and their Notes.

	Year Ended December 31,				
	2013	Restated 2012[3]	Restated 2011[3]	2010	2009
	($ millions, except per share information)				
INCOME STATEMENT DATA					
Net sales	**57,920**	**56,673**	**58,566**	**50,624**	**44,267**
Operating income	**10,910**	**11,193**	**10,780**	**11,526**	**9,982**
Income from associated companies	600	552	528	804	293
Interest expense	(683)	(724)	(751)	(692)	(551)
Other financial (expense) and income	(92)	(96)	(2)	64	198
Income before taxes	**10,735**	**10,925**	**10,555**	**11,702**	**9,922**
Taxes	(1,443)	(1,542)	(1,483)	(1,733)	(1,468)
Net income	**9,292**	**9,383**	**9,072**	**9,969**	**8,454**
Attributable to:					
Shareholders of Novartis AG	9,175	9,270	8,940	9,794	8,400
Non-controlling interests	117	113	132	175	54
Basic earnings per share ($)	3.76	3.83	3.75	4.28	3.70
Diluted earnings per share ($)	3.70	3.79	3.70	4.26	3.69
Cash dividends[1]	6,100	6,030	5,368	4,486	3,941

Cash dividends per share in CHF[2]	2.45	2.30	2.25	2.20	2.10

(1) Cash dividends represent cash payments in the applicable year that generally relates to earnings of the previous year.

(2) Cash dividends per share represent dividends proposed that relate to earnings of the current year. Dividends for 2013 will be proposed to the Annual General Meeting on February 25, 2014 for approval.

(3) 2012 and 2011 restated to reflect the adoption of revised IAS19 on *Employee Benefits* (for additional information, see "Item 18, Financial Statements Note 30").

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	Year Ended December 31,				
	2013[1]	Restated 2012[2]	Restated 2011[2]	Restated 2010[2]	2009
			($ millions)		
BALANCE SHEET DATA					
Cash, cash equivalents and marketable securities & derivative financial instruments	9,222	8,119	5,075	8,134	17,449
Inventories	7,267	6,744	5,930	6,093	5,830
Other current assets	14,053	13,141	13,079	12,458	10,412
Non-current assets	95,712	96,187	93,384	96,620	61,814
Total assets	**126,254**	**124,191**	**117,468**	**123,305**	**95,505**
Trade accounts payable	6,148	5,593	4,989	4,788	4,012
Other current liabilities	20,220	18,458	18,159	19,870	15,458
Non-current liabilities	25,414	30,877	28,331	28,856	18,573
Total liabilities	**51,782**	**54,928**	**51,479**	**53,514**	**38,043**
Issued share capital and reserves attributable to shareholders of Novartis AG	74,343	69,137	65,893	63,218	57,387
Non-controlling interests	129	126	96	6,573	75
Total equity	**74,472**	**69,263**	**65,989**	**69,791**	**57,462**
Total liabilities and equity	**126,254**	**124,191**	**117,468**	**123,305**	**95,505**
Net assets	74,472	69,263	65,989	69,791	57,462
Outstanding share capital	912	909	895	832	825
Total outstanding shares (millions)	2,426	2,421	2,407	2,289	2,274

(1) Assets and liabilities of the disposal group are included in the lines "Other current assets" and "Other current liabilities" respectively (for additional information, see "Item 18, Financial Statements Note 2").

(2) 2012, 2011 and 2010 restated to reflect the adoption of revised IAS19 on *Employee Benefits* (for additional information, see "Item 18, Financial Statements Note 30").

Cash Dividends per Share

Cash dividends are translated into US dollars at the Bloomberg Market System Rate on the payment date. Because we pay dividends in Swiss francs, exchange rate fluctuations will affect the US dollar amounts received by holders of ADRs.

Year Earned	Month and Year Paid	Total Dividend per share (CHF)	Total Dividend per share ($)
2009	March 2010	2.10	1.95
2010	March 2011	2.20	2.37
2011	March 2012	2.25	2.48
2012	March 2013	2.30	2.44
2013[1]	March 2014	2.45	2.75[2]

(1) Dividend to be proposed at the Annual General Meeting on February 25, 2014 and to be distributed March 4, 2014

(2) Translated into US dollars at the 2013 Bloomberg Market System December 31, 2013 rate of $1.124 to the Swiss franc. This translation is an example only, and should not be construed as a representation that the Swiss franc amount represents, or has been or could be converted into US dollars at that or any other rate.

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Exchange Rates

The following table shows, for the years and dates indicated, certain information concerning the rate of exchange of US dollar per Swiss franc based on exchange rate information found on Bloomberg Market System. The exchange rate in effect on January 22, 2014, as found on Bloomberg Market System, was CHF 1.00 = $1.10.

Year ended December 31, ($ per CHF)	**Period End**	**Average[1]**	**Low**	**High**
2009	0.97	0.92	0.84	1.00
2010	1.06	0.96	0.86	1.07
2011	1.06	1.13	1.06	1.25
2012	1.09	1.07	1.02	1.12
2013	1.12	1.08	1.05	1.12
Month				
August 2013			1.07	1.09
September 2013			1.06	1.10
October 2013			1.09	1.12
November 2013			1.08	1.10
December 2013			1.10	1.13
January 2014 (through January 22, 2014)			1.10	1.12

(1) Represents the average of the exchange rates on the last day of each month during the year.

3.B Capitalization and Indebtedness

Not applicable.

3.C Reasons for the offer and use of proceeds

Not applicable.

3.D Risk Factors

Our businesses face significant risks and uncertainties. You should carefully consider all of the information set forth in this annual report on Form 20-F and in other documents we file with or furnish to the SEC, including the following risk factors, before deciding to invest in any Novartis securities. Our business as well as our financial condition or results of operations could be materially adversely affected by any of these risks, as well as other risks and uncertainties not currently known to us or not currently deemed to be material.

Risks Facing Our Business

Our products face important patent expirations and significant competition.

The products of our Pharmaceuticals and Alcon Divisions, as well as key products from our other divisions, are generally protected by patent rights, which are intended to provide us with exclusive rights to market the patented products. However, those patent rights are of varying strengths and durations. Loss of market exclusivity for one or more important products have had, and can be expected to continue to have a material adverse effect on our results of operations.

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The introduction of generic competition for a patented medicine typically results in a significant and rapid reduction in net sales and net income for the patented product because generic manufacturers typically offer their unpatented versions at sharply lower prices. Such competition can result from the regular expiration of the term of the patent. Such competition can also result from the entry of generic versions of another medicine in the same therapeutic class as one of our drugs, or in another competing therapeutic class, or from the compulsory licensing of our drugs by governments, or from a general weakening of intellectual property laws in certain countries around the world. In addition, generic manufacturers frequently take an aggressive approach to challenging patents, conducting so-called "launches at risk" of products that are still under legal challenge for patent infringement, before final resolution of legal proceedings.

We also rely in all aspects of our businesses on unpatented proprietary technology, know-how, trade secrets and other confidential information, which we seek to protect through various measures including confidentiality agreements with licensees, employees, third-party collaborators, and consultants who may have access to such information. If these agreements are breached, our contractual remedies may not be adequate to cover any losses.

Some of our best-selling products have begun or are about to face significant competition due to the end of market exclusivity resulting from the expiry of patent protection.

The patent on valsartan, the active ingredient of *Diovan/Co-Diovan/Diovan HCT* (high blood pressure), which was long our best-selling product, expired in the major countries of the EU in November 2011, and generic competitors have launched there. In addition, patent protection expired in the US in September 2012, and generic versions of *Diovan HCT* have launched in the US. Generic versions of *Diovan* monotherapy have not yet launched in the US but could potentially launch at any time. In addition, patent protection for *Diovan* expired in Japan in 2013, and will expire in 2016 for *Co-Diovan* (including patent term extensions). The active ingredient valsartan is also used in the single-pill combination therapies *Exforge* and *Exforge HCT* (high blood pressure). While market exclusivities for *Exforge/Exforge HCT* will remain in the EU and Japan due to regulatory exclusivities and to a valsartan patent extension for *Exforge* in Japan until 2015, there is a risk that generic manufacturers may circumvent regulatory exclusivity and gain approval of a combination valsartan-amlodipine product in Europe. In the US, under a license agreement with a generics manufacturer, *Exforge* is expected to face generic competition beginning in October 2014.

The patent on zoledronic acid, the active ingredient in *Zometa* (cancer), as well as in *Reclast/Aclasta* (osteoporosis), expired in 2013 in the US and in other major markets, and generic versions of these products have launched.

Patent protection for octreotide acetate, the active ingredient of *Sandostatin,* has expired. Generic versions of *Sandostatin SC* are available in the US and elsewhere. Patents protecting the *Sandostatin LAR* formulation, the long-acting version of *Sandostatin* which represents a majority of our *Sandostatin* sales, expired in 2010 in key markets outside the US, and will expire in 2014 and beyond in the US.

Patent protection on rivastigmine, the active ingredient in *Exelon*, expired in 2011 and 2012 and *Exelon* capsules are subject to generic competition, including in the US and all of Europe. We hold certain formulation patents with respect to *Exelon* Patch, which makes up a substantial portion of our *Exelon* sales. These patents have been challenged. Generic patches were launched in Germany and certain other EU countries in 2013.

The patent on the active ingredient in *Gleevec/Glivec* (cancer) will expire in 2015 in the US, in 2016 in the major EU countries and in September 2014 for the main indications in Japan. However, the product is protected by additional patents claiming innovative features of *Gleevec/Glivec*. Generic versions of *Gleevec/Glivec* have already been launched in Turkey, Brazil, Canada, China, India, Russia and for a minor indication in Japan.

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For more information on the patent status of our Pharmaceuticals Division's products see "Item 4. Information on the Company Item 4.B Business Overview Pharmaceuticals Intellectual Property" and "Item 18. Financial Statements Note 20".

In 2014, the impact of generic competition on our net sales is expected to be as much as $3.0 billion. Because we typically have substantially reduced marketing and research and development expenses related to a product in its final year of exclusivity, it is expected that the loss of patent protection will have an impact on our operating income which can be expected to correspond to a significant portion of the product's lost sales. The magnitude of such an impact could depend on a number of factors, including: the time of year at which such exclusivity would be lost; the ease or difficulty of manufacturing a competitor product and obtaining regulatory approval to market it; the number of generic competitor products approved, and whether, in the US, a single competitor is granted an exclusive marketing period; and the geographies in which generic competitor products are approved, including the strength of the market for generic pharmaceutical products in such geographies and the comparative profitability of branded pharmaceutical products in such geographies.

Clearly, with respect to major products for which the patent terms are expiring, the loss of exclusivity of these products can be expected to have a material adverse effect on our business, financial condition and results of operations. In addition, should we unexpectedly lose exclusivity on additional products as a result of patent litigation or other reasons, this could also have a material adverse effect on our business, financial condition and results of operations, both due to the loss of revenue and earnings, and the difficulties in planning for such losses.

Similarly, all of our businesses are faced with intense competition from new products and technological advances from competitors. Physicians, patients and third-party payers may choose our competitors' products instead of ours if they perceive them to be safer, more effective, easier to administer, less expensive or more cost-effective.

Products that compete with ours, including products competing against some of our best-selling products, are launched from time to time. We cannot predict with accuracy the timing of the introduction of such competitive products or their possible effect on our sales. However, products significantly competitive to our major products *Lucentis* and *Gilenya* have recently been launched. Such products, and other competitive products, could adversely affect the revenues from our products and our results of operations.

Our research and development efforts may not succeed in bringing new products to market, or to do so cost-efficiently enough, or in a manner sufficient to grow our business and replace lost revenues and income.

Our ability to continue to grow our business and to replace sales lost due to competition or to other sources depends in significant part upon the success of our research and development activities in identifying and successfully and cost-effectively developing new products that address unmet medical needs, are accepted by patients and physicians, and are reimbursed by payors. To accomplish this, we commit substantial effort, funds and other resources across all our divisions to research and development, both through our own dedicated resources and through collaborations with third parties. Developing new healthcare products and bringing them to market, however, is a highly costly, lengthy and uncertain process. In spite of our significant investments, there can be no guarantee that our research and development activities will produce commercially viable new products that will enable us to grow our business and replace lost revenues and income.

Using the products of our Pharmaceuticals Division as an example, the research and development process for a new product can take up to 15 years, or even longer, from discovery to commercial product launch and with a limited available patent life, the longer it takes to develop a product, the less time there will be for us to recoup our development costs. New products need not only undergo intensive preclinical and clinical testing, but also must be approved by means of highly complex, lengthy and

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expensive approval processes which can vary from country to country. During each stage, there is a substantial risk that we will encounter serious obstacles which will further delay us and add substantial expense, that we will only develop a product with limited potential for commercial success, or that we will be forced to abandon a product in which we have invested substantial amounts of time and money. These risks may include: failure of the product candidate in preclinical studies; difficulty enrolling patients in clinical trials or delays or clinical trial holds at clinical trial sites; delays in completing formulation and other testing and work necessary to support an application for regulatory approval; adverse reactions to the product candidate or indications or other safety concerns; insufficient clinical trial data to support the safety or efficacy of the product candidate; an inability to manufacture sufficient quantities of the product candidate for development or commercialization activities in a timely and cost-effective manner; and failure to obtain, or delays in obtaining, the required regulatory approvals for the product candidate or the facilities in which it is manufactured. In addition, FDA and other governmental health authorities have recently intensified their scrutiny of pharmaceutical companies' clinical development activities, both with respect to compliance with regulations related to the conduct of clinical trials, and with respect to their interpretations of the clinical trial requirements necessary to support a product submission. This has added to the obstacles and costs we face in bringing new products to market.

Our other divisions face similar challenges in developing new products and bringing them to market. Alcon's Ophthalmic Pharmaceuticals products, Vaccines and Diagnostics' Vaccine products, and the products of our Animal Health Division all must be developed and approved in accordance with essentially the same processes as faced by our Pharmaceuticals Division. Nearly all of our other products face similarly difficult development and approval processes. At Alcon, management has announced significant investments in research and development to develop new eye care products to replace sales that may be lost to generic competition and to grow its business. Vaccines and Diagnostics has, and continues to expend considerable time and resources to fully develop and bring to market new vaccines, including *Bexsero*, to combat serogroup B meningococcal disease. Our Animal Health Division seeks to bring new products to market from time to time. If these efforts do not bear significant fruit, they could have a material adverse effect on the medium to long-term success of these divisions, and of the Group as a whole.

In addition, our Sandoz Division has made, and expects to continue to make, significant investments in the development of differentiated, "difficult-to-make" generic products, including biotechnology-based, "biologic" medicines intended for sale as bioequivalent or "biosimilar" generic versions of currently-marketed biotechnology products. While the development of such products can be significantly less costly and complex than the development of the equivalent originator medicines, it can often be significantly more costly and complex than for non-differentiated generic products. In addition, to date, many countries do not yet have a fully-developed legislative or regulatory pathway which would permit biosimilars to be brought to market or sold in a manner in which the biosimilar product would be readily substitutable for the originator product. Significant difficulties in the development of differentiated products, further delays in the development of such regulatory pathways, or any significant impediments that may ultimately be built into such pathways, could put at risk the significant investments that Sandoz has made, and will continue to make, in the development of differentiated products in general, and in its biotechnology operations in particular, and could have a material adverse effect on the long-term success of the Sandoz Division and the Group as a whole.

If we are unable to cost-effectively maintain an adequate flow of successful new products and new indications for existing products sufficient to cover our substantial research and development costs and the decline in sales of older products that either become subject to generic competition, or are displaced by competing products or therapies, this could have a material adverse effect on our business, financial condition or results of operations. For a description of the approval processes which must be followed to market our products, see the sections headed "Regulation" included in the descriptions of our four operating divisions under "Item 4. Information on the Company Item 4.B Business Overview."

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Increasing regulatory scrutiny of drug safety and efficacy has and is likely to continue to adversely affect us.

Following a series of widely publicized issues in recent years, health regulators are increasingly focusing on product safety. In addition, governmental authorities around the world have paid increased attention to the risk/benefit profile of pharmaceutical products with an increasing emphasis on product safety and on examining whether new products offer a significant benefit over older products in the same therapeutic class. These developments have led to requests for more clinical trial data, for the inclusion of a significantly higher number of patients in clinical trials, and for more detailed analyses of the trials. As a result, the already lengthy and expensive process of obtaining regulatory approvals for pharmaceutical products has become even more challenging.

In addition, for the same reason, the post-approval regulatory burden has been increasing. Approved drugs have increasingly been subject to requirements such as risk evaluation and mitigation strategies (REMS), risk management plans, comparative effectiveness studies, health technology assessments and requirements to conduct post-approval Phase IV clinical trials to gather far more detailed safety and other data on products. These requirements have the effect of making the maintenance of regulatory approvals and achieving reimbursement for our products increasingly expensive, and further heightening the risk of recalls, product withdrawals, or loss of market share.

Like our industry peers, we have been required by health authorities to conduct additional clinical trials, and to submit additional analyses of our data in order to obtain product approvals or reimbursement by government or private payors. We have had REMS and other such requirements imposed as a condition of approval of our new drugs. Because these regulatory developments can increase the costs of, and cause delays in obtaining approvals, and create an increased risk that products either will not be approved, or will be removed from the market after previously having been approved, these regulatory developments could have a material adverse effect on our business, financial condition and results of operations.

Our business is increasingly affected by pressures on pricing for our products.

The growth of overall healthcare costs as a percentage of gross domestic product in many countries means that governments and payors are under intense pressure to control healthcare spending even more tightly. These pressures are particularly strong given the persistently weak global economic and financial environment. In addition, in certain countries, patients, healthcare providers and the media are increasingly raising questions about healthcare pricing issues. As a result, our businesses and the healthcare industry in general are operating in an ever more challenging environment with very significant pricing pressures. These ongoing pressures affect all of our businesses that rely on reimbursement including Pharmaceuticals, Alcon, Sandoz and Vaccines and Diagnostics. They involve a number of cost-containment measures, such as government-imposed industry-wide price reductions, mandatory pricing systems, reference pricing systems, payors limiting access to innovative medicines based on cost-benefit analyses, an increase in imports of drugs from lower-cost countries to higher-cost countries, shifting of the payment burden to patients through higher co-payments, limiting physicians' ability to choose among competing medicines, mandatory substitution of generic drugs for the patented equivalent, and growing pressure on physicians to reduce the prescribing of patented prescription medicines. Such initiatives include the 2010 enactment of the Affordable Care Act in the US, its implementation, and ongoing efforts by the US Government to find additional savings from government healthcare programs.

As a result of such measures, we faced downward pricing pressures on our patented and generic drugs in many countries in 2013. For example, during 2013, the UK's National Institute for Health and Clinical Excellence (NICE) recommended against the UK National Health Service funding the use of our products *Jakavi* (myelofibrosis) and *Afinitor* (advanced breast cancer indication). NICE did recommend the funding of the use of our products *Xolair* (allergic asthma), *Lucentis* (diabetic macular edema indication), and *Jetrea* (vitreomacular traction), but only after we offered significant price discounts. Similarly, a German agency, the *Gemeinsamer Bundesausschuss* (G-BA), is conducting an analysis of the

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benefits of drugs previously approved, and as part of that analysis refused to recommend the use of our product *Galvus* to treat type 2 diabetes. In China, the government has imposed significant price cuts on certain of our products. In the US, under the Affordable Care Act, there is a newly created entity, the Independent Payment Advisory Board, which has been granted unprecedented authority to implement broad actions to reduce future costs of the Medicare program. This could include required prescription drug discounts or rebates. In addition, as a result of the ongoing implementation of the Affordable Care Act, some patients may be required to switch from existing commercial health insurance policies to policies offered on the new healthcare exchanges. Should a significant number of patients switch to policies offered on the exchanges that offer lesser benefits than their prior policies, there could be an impact on the sales or pricing of our products.

We expect these efforts to control costs to continue in 2014 as healthcare payors around the globe, including government-controlled health authorities, insurance companies and managed care organizations, step up initiatives to reduce the overall cost of healthcare, restrict access to higher-priced new medicines, increase the use of generics and impose overall price cuts. For more information on price controls and on our challenging business environment see "Item 4. Information on the Company Item 4.B Business Overview Pharmaceuticals Price Controls."

Failure to comply with law, and resulting investigations and legal proceedings may have a significant negative effect on our results of operations.

We are obligated to comply with the laws of all of the countries around the world in which we operate and sell products with respect to an extremely wide and growing range of activities, as well as with new requirements imposed on us from time to time as government and public expectations regarding acceptable corporate behavior change. For example, there are new laws in the US and in other countries around the world that will require us to be more transparent with respect to our interactions with healthcare professionals. To help us in our efforts to comply with the many requirements that impact us, we have a significant global compliance with law program in place, and we devote substantial time and resources to efforts to ensure that our business is conducted in a lawful and publicly acceptable manner. Nonetheless, despite our efforts, any failure to comply with law or with heightened public expectations could lead to substantial liabilities that may not be covered by insurance, or to other significant losses, and could affect our business and reputation.

In particular, in recent years, there has been a trend of increasing government investigations and litigations against companies operating in the industries of which we are a part, both in the US and in an increasing number of countries around the world. A number of our subsidiaries are, and will likely continue to be, subject to various legal proceedings that arise from time to time, including proceedings regarding product liability, sales and marketing practices, commercial disputes, employment and wrongful discharge, antitrust, securities, health and safety, environmental, tax, privacy, and intellectual property matters. Such proceedings are inherently unpredictable, and large judgments sometimes occur. As a consequence, we may in the future incur judgments or enter into settlements of claims that could have a material adverse effect on our results of operations or cash flows.

In addition, governments and regulatory authorities around the world have been stepping up their compliance and law enforcement activities in recent years in key areas, including marketing practices, corruption, trade restrictions, embargo legislation, insider trading, antitrust, and data privacy, and are increasingly challenging practices previously considered to be legal. Responding to such investigations is costly, and requires an increasing amount of management's time and attention. In addition, such investigations may affect our reputation, create a risk of potential exclusion from government reimbursement programs in the US and other countries, and may lead to litigation. These factors have contributed to decisions by us and other companies in our industry, when deemed in their interest, to enter into settlement agreements with governmental authorities around the world prior to any formal decision by the authorities. These settlements have involved and may continue to involve large cash

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payments, including the potential repayment of amounts allegedly obtained improperly, and other penalties, including treble damages. In addition, settlements of healthcare fraud cases often require companies to enter into corporate integrity agreements, which are intended to regulate company behavior for a period of years. Our affiliate Novartis Pharmaceuticals Corporation is a party to such an agreement, which will not expire until 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation.

Our businesses are currently subject to a number of these governmental investigations and information requests by regulatory authorities. See "Item 18. Financial Statements Note 20."

In addition, our Sandoz Division may, from time to time, seek approval to market a generic version of a product before the expiration of patents claimed by the marketer of the patented product. We do this in cases where we believe that the relevant patents are invalid, unenforceable, or would not be infringed by our generic product. As a result, affiliates of our Sandoz Division frequently face patent litigation, and in certain circumstances, we may elect to market a generic product even though patent infringement actions are still pending. Should we elect to proceed in this manner and conduct a "launch at risk," we could face substantial damages if the final court decision is adverse to us.

Adverse judgments or settlements in any of the significant investigations or cases against us could have a material adverse effect on our business, financial condition and results of operations.

For more detail regarding specific legal matters currently pending against us and provisions for such matters, see "Item 18. Financial Statements Note 20." See also " Our reliance on outsourcing and third parties for the performance of key business functions heightens the risks faced by our businesses" below.

The manufacture of our products is highly regulated and complex, and may result in a variety of issues that could lead to extended supply disruptions and significant liability.

The products we market and sell are either manufactured at our own dedicated manufacturing facilities or by third parties. In either case, we must ensure that all manufacturing processes comply with current Good Manufacturing Practices (cGMP) and other applicable regulations, as well as with our own high quality standards. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In recent years, such health authorities have intensified their scrutiny of manufacturers' compliance with such requirements, and are increasingly challenging practices that were previously considered acceptable. If we or our third-party suppliers fail to comply fully with these requirements and the health authorities' expectations, then we could be required to shut down our production facilities or production lines. This could lead to product shortages, or to our being entirely unable to supply products to patients for an extended period of time. And such shortages or shut downs have led to and could continue to lead to significant losses of sales revenue and to potential third-party litigation. In addition, health authorities have in some cases imposed significant penalties for such failures to comply with cGMP. A failure to comply fully with cGMP could also lead to a delay in the approval of new products to be manufactured at the impacted site.

Like our competitors, we have faced, and continue to face, significant manufacturing issues. For example, in November 2011, we received a Warning Letter from the FDA with respect to three of our Sandoz Division's facilities in Broomfield, Colorado, Wilson, North Carolina, and Boucherville, Canada. The Warning Letter raised concerns regarding these facilities' compliance with FDA cGMP regulations. It stated that until the FDA confirms that the deficiencies have been corrected, the FDA can recommend that any pending applications or supplements listing Novartis affiliates as a drug manufacturer not be approved. In addition, FDA may refuse requests to issue export certificates to our Sandoz US affiliate, or import certificates to our Sandoz Canada affiliates. The letter further states that other federal agencies may take the Warning Letter into account when considering the award of contracts. In addition, in May 2013 we received a Warning Letter from the FDA concerning the oncology injectables manufacturing

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facility in Unterach, Austria. The letter contained two observations which followed an agency inspection at the site in October 2012, and are related to historical visual inspection practices for products manufactured at the site. In the fourth quarter of 2012, the FDA formally notified Sandoz that the compliance status of its Broomfield, Colorado site has been upgraded. In January 2014, the FDA formally notified Sandoz that the compliance status of its Boucherville, Canada site was upgraded. Work continues on closing out committed actions across the sites.

Separately, in December 2011, we suspended operations and shipments from the OTC Division facility located at Lincoln, Nebraska, which also produces certain products for our Animal Health Division. This action was taken to accelerate maintenance and other improvement activities at the site. Subsequently, in 2012 and 2013, we recalled certain OTC Division products that were produced at the Lincoln facility. We have made progress in the remediation of quality issues at Lincoln, and the FDA closed out its October 2013 inspection of the site with zero Form 483 observations. However, we have also outsourced the production of certain Lincoln products, and have discontinued others. As of the date of this Form 20-F, it is not possible to determine when the plant will resume full operations.

In December 2012, our Alcon Division received an FDA Warning Letter following an inspection at the *LenSx* laser manufacturing site in Aliso Viejo, California. Alcon responded in writing to the FDA, and in February 2013, FDA responded to Alcon acknowledging that the corrective actions described in Alcon's written response appear to address the items identified in the Warning Letter. The FDA will verify these corrective actions during its next scheduled inspection of the site. The items noted in the Warning Letter do not affect the safety or effectiveness of the *LenSx* laser, or impact Alcon's ability to sell the product.

As a result of such manufacturing issues, we were unable to supply certain products to the market for significant periods of time, and so have suffered and may continue to suffer significant losses in sales and market share. These supply issues have required us to outsource the production of certain key products that were previously manufactured in our own production facilities, which may limit the potential profitability of such products. In addition, to meet health authority and our own high quality standards, we have expended considerable resources to upgrade and remediate issues at our sites. Should we fail to complete the planned improvements at the sites in a timely manner, including those done in agreement with the FDA, then we may suffer significant additional losses in sales and drainage of resources, and we could be subject to legal action without further notice including, without limitation, seizure and injunction.

In addition, to meet increasing health authority expectations, we are devoting substantial time and resources to improve quality and assure consistency of product supply at our other manufacturing sites around the world. Ultimately, there can be no guarantee of the outcome of any of these efforts. Nor can there be any guarantee that we will not face similar issues in the future, or that we will successfully manage such issues when they arise.

In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For some products and raw materials, we may also rely on a single source of supply. In particular, a significant portion of our portfolio, including products from our Pharmaceuticals, Alcon, Vaccines and Diagnostics, and Sandoz Divisions, are "biologic" products. Unlike traditional "small-molecule" drugs, biologic drugs or other biologic-based products cannot be manufactured synthetically, but typically must be produced from living plant or animal micro-organisms. As a result, the production of biologic-based products which meet all regulatory requirements is especially complex. Even slight deviations at any point in the production process may lead to batch failures or recalls. In addition, because the production process is based on living plant or animal micro-organisms, the process could be affected by contaminants which could impact those micro-organisms. As a result, the inherent fragility of certain of our raw material supplies and production processes may cause the production of one or more of our products to be disrupted, potentially for extended periods of time.

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Also as part of the Group's portfolio of products, we have a number of sterile products, including oncology products, which are considered to be technically complex to manufacture, and require strict environmental controls. Because the production process for such products is so complex and sensitive, the chance of production failures and lengthy supply interruptions is increased.

Finally, in addition to potential liability for government penalties, because our products are intended to promote the health of patients, for some of our products, any supply disruption or other production issue could subject us to lawsuits or to allegations that the public health, or the health of individuals, has been endangered.

In sum, a disruption in the supply of certain key products whether as a result of a failure to comply with applicable regulations or health authority expectations, the fragility of the production process, natural or man-made disasters at one of our facilities or at a critical supplier or vendor, or our failure to accurately predict demand could have a material adverse effect on our business, financial condition or results of operations. See also " Earthquakes and other natural disasters could adversely affect our business," below.

The persistently weak global economic and financial environment may have a material adverse effect on our results.

Many of the world's largest economies and financial institutions continue to be impacted by a weak ongoing global economic and financial environment, with some continuing to face financial difficulty, liquidity problems and limited availability of credit. It is uncertain how long these effects will last, or whether economic and financial trends will worsen or improve. In addition, these issues may be further impacted by the unsettled political conditions currently existing in the US, Europe and other places. Such uncertain times may have a material adverse effect on our revenues, results of operations, financial condition and, if circumstances worsen, our ability to raise capital at reasonable rates. For example, persistent financial weakness in certain countries in Europe has increased pressures on those countries, and on payors in those countries to force healthcare companies to decrease the prices at which we may sell them our products. See also "Item 4. Information on the Company Item 4.B Business Overview Pharmaceuticals Price Controls." Concerns continue that some countries, including Greece, Italy, Portugal and Spain, may not be able to pay us in a timely manner. Certain other countries, such as Venezuela have taken steps to introduce exchange controls and limit companies from distributing retained earnings or paying intercompany payables due from those countries.

Current economic conditions may adversely affect the ability of our distributors, customers, suppliers and service providers to obtain the liquidity required to pay for our products, or otherwise to buy necessary inventory or raw materials, and to perform their obligations under agreements with us, which could disrupt our operations, and could negatively impact our business and cash flow. Although we make efforts to monitor these third parties' financial condition and their liquidity, our ability to do so is limited, and some of them may become unable to pay their bills in a timely manner, or may even become insolvent, which could negatively impact our business and results of operations. These risks may be elevated with respect to our interactions with third parties with substantial operations in countries where current economic conditions are the most severe, particularly where such third parties are themselves exposed to payment risks from business interactions directly with fiscally-challenged government payers. See also " Our reliance on outsourcing and third parties for the performance of key business functions heightens the risks faced by our businesses" below.

In addition, the varying effects of difficult economic times on the economies, currencies and financial markets of different countries has impacted, and may continue to unpredictably impact, the conversion of our operating results into our reporting currency, the US dollar, as well as the value of our investments in our pension plans. See " Foreign exchange fluctuations may adversely affect our earnings and the value of some of our assets," below, and " If any of numerous key assumptions and estimates in calculating our pension plan obligations turn out to be different from our actual experience, we may be required to increase substantially our contributions to pension plans as well as our pension-related costs in the

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future," below. In addition, the financial situation may also result in a lower return on our financial investments, and a lower value on some of our assets. Alternately, inflation could accelerate, which could lead to higher interest rates, which would increase our costs of raising capital.

To the extent that the economic and financial crisis is directly affecting consumers, some of our businesses, including the elective surgical business of our Alcon Division and our OTC and Animal Health Divisions, may be particularly sensitive to declines in consumer spending. In addition, our Pharmaceuticals, Vaccines and Diagnostics, and Sandoz Divisions, and the remaining businesses of our Alcon Division, may not be immune to consumer cutbacks, particularly given the increasing requirements in certain countries that patients pay a larger contribution toward their own healthcare costs. As a result, there is a risk that consumers may cut back on prescription drugs and vaccines, as well as consumer health products, to help cope with rising costs and difficult economic times.

At the same time, significant changes and volatility in the financial markets, in the consumer and business environment, in the competitive landscape and in the global political and security landscape make it increasingly difficult for us to predict our revenues and earnings into the future. As a result, any revenue or earnings guidance or outlook which we have given or might give may be overtaken by events, or may otherwise turn out to be inaccurate. Though we endeavor to give reasonable estimates of future revenues and earnings at the time we give such guidance, based on then-current knowledge and conditions, there is a significant risk that such guidance or outlook will turn out to be, or to have been, incorrect.

Foreign exchange fluctuations may adversely affect our earnings and the value of some of our assets.

In the past year, the US dollar, our reporting currency, has significantly increased in value against certain other world currencies. However, in prior years, the US dollar suffered significant decreases in value. In addition, in recent years, unresolved fiscal issues in the US and in many European economies, and investor concerns about the future of the Euro, have led to the flight of investor capital to the perceived safety of the Swiss franc, causing the Swiss franc to rise significantly in value. Because a significant portion of our earnings and expenditures are in currencies other than the US dollar, including expenditures in Swiss francs which are significantly higher than our revenues in Swiss francs, this volatility can have a significant and often unpredictable impact on our reported net sales and earnings. As has happened in the recent past, changes in exchange rates between the US dollar and other currencies can result in increases or decreases in our reported sales, costs and earnings as expressed in US dollars. Fluctuations in exchange rates between the US dollar and other currencies may also affect the reported value of our assets measured in US dollars and the components of shareholders' equity. In addition, there is a risk that certain countries could devalue their currency. If this occurs then it could impact the effective prices we would be able to charge for our products and also have an adverse impact on both our consolidated income statement and currency translation adjustments included in our consolidated equity. For more information on the effects of currency fluctuations on our consolidated financial statements and on how we manage currency risk, see "Item 5. Operating and Financial Review and Prospects Item 5.A Operating Results Effects of Currency Fluctuations," "Item 5.A Operating Results Currency Impact on Key Figures," "Item 5.B Liquidity and Capital Resources," "Item 11. Quantitative and Qualitative Disclosures about Market Risk", and "Item 18. Financial Statements Note 29."

We may not successfully achieve our goals in strategic acquisitions or divestments of businesses.

As part of our growth strategy, we evaluate and pursue potential strategic business acquisitions and divestitures to expand or complement our existing businesses, or to enable us to focus more sharply on our strategic businesses. We cannot ensure that suitable acquisition candidates will be identified. Acquisition activities can be thwarted by overtures from competitors for the targeted candidates, potentially increasing prices demanded by sellers, governmental regulation (including market concentration limitations) and replacement product developments in our industry. Further, after an acquisition, successful integration of

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the venture can be complicated by corporate cultural differences, difficulties in retention of key personnel, customers and suppliers, and coordination with other products and processes. Also, acquisitions could divert management's attention from our existing business, and could result in liabilities being incurred that were not known at the time of acquisition or the creation of tax or accounting issues. Similarly, we cannot ensure that suitable buyers will be identified for businesses that we wish to divest. Neither can we ensure that we will correctly select businesses as candidates for divestiture, or that any expected strategic benefits, synergies or opportunities will arise as a result of any divestiture. If we fail to timely recognize or address these matters or to devote adequate resources to them, we may fail to achieve our growth strategy or otherwise not realize the intended benefits of any acquisition or divestiture.

Intangible assets and goodwill on our books may lead to significant impairment charges in the future.

The amount of goodwill and other intangible assets on our consolidated balance sheet has increased significantly in recent years, primarily due to acquisitions. As a result, impairment testing could lead to material impairment charges in the future.

We regularly review our long-lived intangible and tangible assets, including identifiable intangible assets, investments in associated companies and goodwill, for impairment. Goodwill, acquired research and development, and acquired development projects not yet ready for use are subject to impairment review at least annually. Other long-lived assets are reviewed for impairment when there is an indication that an impairment may have occurred. Impairment testing under IFRS may lead to impairment charges in the future. Any significant impairment charges could have a material adverse effect on our results of operations and financial condition. In 2013, for example, we recorded intangible asset impairment charges of $116 million. Of this, $57 million relates to the Alcon Division, and $59 million to all other divisions. For a detailed discussion of how we determine whether an impairment has occurred, what factors could result in an impairment and the increasing impact of impairment charges on our results of operations, see "Item 5. Operating and Financial Review and Prospects Item 5.A Operating Results Critical Accounting Policies and Estimates Impairment of Long-Lived Intangible and Tangible Assets" and "Item 18. Financial Statements Notes 1 and 11."

Our indebtedness could adversely affect our operations.

As of December 31, 2013 we had $11.2 billion of non-current financial debt and $6.8 billion of current financial debt. Our current and long-term debt requires us to dedicate a portion of our cash flow to service interest and principal payments and may limit our ability to engage in other transactions and otherwise may place us at a competitive disadvantage relative to our competitors that have less debt. We may have difficulty refinancing our existing debt or incurring new debt on terms that we would consider to be commercially reasonable, if at all.

Our reliance on outsourcing and third parties for the performance of key business functions heightens the risks faced by our businesses.

We invest a significant amount of effort and resources into outsourcing and offshoring certain key business functions with third parties, including research and development collaborations, manufacturing operations, warehousing, distribution activities, certain finance functions, marketing activities, data management and others. Our reliance on outsourcing and third parties for certain functions, such as the research and development or manufacturing of products, may limit the potential profitability of such products. In addition, despite contractual relationships with the third parties to whom we outsource these functions, we cannot ultimately control how they perform their contracts. Nonetheless, we depend on these third parties to achieve results which may be significant to us. If the third parties fail to meet their obligations or to comply with the law, we may lose our investment in the collaborations and fail to receive the expected benefits. In addition, should any of these third parties fail to comply with the law in the course of their performance of services for us, there is a risk that we could be held responsible for such

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violations of law, as well. Any such failures by third parties could have a material adverse effect on our business, financial condition or results of operations.

In particular, in many countries, including many developing markets, we rely heavily on third party distributors and other agents for the marketing and distribution of our products. Many of these third parties do not have internal compliance resources comparable to those within our organization. Some of these countries are plagued by corruption. If our efforts to screen our third party agents and detect cases of potential misconduct fail, we could be held responsible for the noncompliance of these third parties with applicable laws and regulations, which may have a material adverse effect on our reputation and on our business, financial condition or results of operations.

We may not be able to realize the expected benefits of our significant investments in Emerging Growth Markets.

At a time of slowing growth in sales of healthcare products in industrialized countries, many emerging markets have experienced proportionately higher sales growth and an increasing contribution to the industry's global performance. In 2013, we generated $14.7 billion, or approximately 25% (2012: 24%) of net sales from Emerging Growth Markets which comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand as compared with $43.2 billion, or approximately 75% (2012: 76%) of our net sales, in the Established Markets. However, combined net sales in the Emerging Growth Markets grew 10% in constant currency in 2013, compared to 2% sales growth in constant currency in the Established Markets during the same period. As a result of this trend, we have been taking steps to increase our presence in the Emerging Growth Markets.

There is no guarantee that our efforts to expand our sales in these countries will succeed, or that these countries will continue to experience growth rates in excess of the world's largest markets. Some Emerging Growth Market countries may be especially vulnerable to the effects of the persistently weak global financial environment, may have very limited resources to spend on healthcare or are more susceptible to political and social instability. See " The persistently weak global economic and financial environment may have a material adverse effect on our results" above. Many of these countries are subject to increasing political and social pressures, including from a growing middle class seeking increased access to healthcare. Such pressures on local government may in turn result in an increased focus by the governments on our pricing.

These countries also may have a relatively limited number of persons with the skills and training suitable for employment at an enterprise such as ours. See " An inability to attract and retain qualified personnel could adversely affect our business" below. In some Emerging Growth Market countries, a culture of compliance with law may not be as fully developed as in the Established Markets China's investigations of the activities of multinational healthcare companies have been well publicized or we may be required to rely on third-party agents, in either case putting us at risk of liability. See " Failure to comply with law, and resulting investigations and legal proceedings may have a significant negative effect on our results of operations," and " Our reliance on outsourcing and third parties for the performance of key business functions heightens the risks faced by our businesses," above.

In addition, many of these countries have currencies that may fluctuate substantially. If these currencies devalue significantly against the US dollar, and we cannot offset the devaluations with price increases, then our products may become less profitable, or may otherwise impact our reported financial results. See "Foreign exchange fluctuations may adversely affect our earnings and the value of some of our assets," above.

For all these reasons, our sales to Emerging Growth Markets carry significant risks. A failure to continue to expand our business in Emerging Growth Markets could have a material adverse effect on our business, financial condition or results of operations.

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Failure to obtain marketing exclusivity periods for new generic products, or to develop differentiated products, as well as intense competition from patented and generic pharmaceuticals companies, may have an adverse effect on the success of our Sandoz Division.

Our Sandoz Division achieves significant revenue opportunities when it secures and maintains exclusivity periods granted for generic products in certain markets particularly the 180-day exclusivity period granted in the US by the Hatch-Waxman Act and when it is able to develop differentiated products with few, if any, generic competitors. Failure to obtain and maintain these market opportunities could have an adverse effect on the success of Sandoz. In addition, the division faces intense competition from patented pharmaceuticals companies, which commonly take aggressive steps to limit the availability of exclusivity periods or to reduce their value, and from other generic pharmaceuticals companies, which aggressively compete for exclusivity periods and for market share of generic products that may be identical to certain of our generic products. These activities may increase the costs and risks associated with our efforts to introduce generic products and may delay or entirely prevent their introduction. See also " Our research and development efforts may not succeed in bringing new products to market, or to do so cost-efficiently enough, or in a manner sufficient to grow our business and replaced lost revenues and income" above, with regard to the risks involved in our efforts to develop differentiated generic products.

If any of numerous key assumptions and estimates in calculating our pension plan obligations turn out to be different from our actual experience, we may be required to increase substantially our contributions to pension plans as well as the amount we pay toward pension-related expenses in the future.

We sponsor pension and other post-employment benefit plans in various forms. These plans cover a significant portion of our current and former associates. We are required to make significant assumptions and estimates about future events in calculating the present value of expected future expense and liability related to these plans. These include assumptions about discount rates we apply to estimated future liabilities and rates of future compensation increases. In addition, our actuarial consultants provide our management with historical statistical information such as withdrawal and mortality rates in connection with these estimates. Assumptions and estimates used by Novartis may differ materially from the actual results we experience due to changing market and economic conditions (including the effects of the persistently weak global financial environment, which, to date, have resulted in extremely low interest rates in many countries), higher or lower withdrawal rates, or longer or shorter life spans of participants, among other variables. For example, a decrease in the interest rate we apply in determining the present value of expected future defined benefit obligations of one-quarter of one percent would have increased our year-end defined benefit pension obligation for plans in Switzerland, US, UK, Germany and Japan, which represent about 95% of the Group total defined benefit pension obligation, by $0.8 billion. Any differences between our assumptions and estimates and our actual experience could have a material effect on our results of operations and financial condition. Further, additional employer contributions might be required if the funding level determined based on local rules falls below a pre-determined level. For more information on obligations under retirement and other post-employment benefit plans and underlying actuarial assumptions, see "Item 5. Operating and Financial Review and Prospects Item 5.A Operating Results Critical Accounting Policies and Estimates Retirement and other post-employment benefit plans" and "Item 18. Financial Statements Note 25". See also " The persistently weak global economic and financial environment may have a material adverse effect on our results" above.

Changes in tax laws or their application could adversely affect our results of operations.

The integrated nature of our worldwide operations enables us to achieve an attractive effective tax rate on our earnings because a portion of our earnings are earned in jurisdictions which tax profits at more favorable rates. Changes in tax laws or in the laws' application, including with respect to tax base or rate, transfer pricing, intercompany dividends and cross-border transactions, controlled corporations, and limitations on tax relief allowed on the interest on intercompany debt, could increase our effective tax rate and adversely affect our financial results.

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Counterfeit versions of our products could harm our patients and reputation.

Our industry continues to be challenged by the vulnerability of distribution channels to illegal counterfeiting and the presence of counterfeit products in a growing number of markets and over the Internet. Counterfeit products are frequently unsafe or ineffective, and can potentially be life-threatening. To distributors and patients, counterfeit products may be visually indistinguishable from the authentic version. Reports of adverse reactions to counterfeit drugs or increased levels of counterfeiting could materially affect patient confidence in the authentic product, and harm the business of companies such as ours. Additionally, it is possible that adverse events caused by unsafe counterfeit products would mistakenly be attributed to the authentic product. If a product of ours was the subject of counterfeits, we could incur substantial reputational and financial harm in the longer term.

Ongoing consolidation among our distributors and retailers is increasing both the purchasing leverage of key customers and the concentration of credit risk.

Increasingly, a significant portion of our global sales are made to a relatively small number of US drug wholesalers, retail chains and other purchasing organizations. For example, our three most important customers globally are all in the US, and accounted for approximately 10%, 9% and 7%, respectively, of Group net sales in 2013. The largest trade receivables outstanding were for these three customers, amounting to 9%, 7% and 5%, respectively, of the Group's trade receivables at December 31, 2013. The trend has been toward further consolidation among distributors and retailers, both in the US and internationally. As a result, our customers are gaining additional purchasing leverage, which increases the pricing pressures facing our businesses. Moreover, we are exposed to a concentration of credit risk as a result of this concentration among our customers. If one or more of our major customers experienced financial difficulties, the effect on us would be substantially greater than in the past. This could have a material adverse effect on our business, financial condition and results of operations.

An inability to attract and retain qualified personnel could adversely affect our business.

We highly depend upon skilled personnel in key parts of our organization, and we invest heavily in recruiting, training and retaining qualified individuals. The loss of the service of key members of our organization including senior members of our scientific and management teams, high-quality researchers and development specialists, and skilled personnel in emerging markets could delay or prevent the achievement of major business objectives.

Future economic growth will demand talented associates and leaders, yet the market for talent will become increasingly competitive. Shifting demographic trends will result in fewer students, fewer graduates and fewer people entering the workforce in the Western world in the next 10 years. The supply of talent for key functional and leadership positions is decreasing, and a talent gap is clearly visible for some professions and geographies engineers in Germany, for example. Recruitment is increasingly regional or global in specialized fields such as clinical development, biosciences, chemistry and information technology.

Emerging markets are expected to be a driving force in global growth, but in countries like Russia and China there is a limited pool of executives with the training and international experience needed to work successfully in a global organization like Novartis. Moreover, younger generations around the world have changing expectations toward careers, engagement and the integration of work in their overall lifestyles. Geographic mobility is expected to decrease, and talented individuals in emerging countries anticipate ample career opportunities closer to home than in the past.

In addition, our ability to hire qualified personnel also depends on the flexibility to reward superior performance and to pay competitive compensation. Laws and regulations on executive compensation, including legislation in our home country, Switzerland, may restrict our ability to attract, motivate and retain the required level of qualified personnel.

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We face intense competition for an increasingly limited pool of qualified individuals from numerous pharmaceutical and biotechnology companies, universities, governmental entities and other research institutions. As a result, we may be unable to attract and retain qualified individuals in sufficient numbers, which could have an adverse effect on our business, financial condition and results of operations.

Environmental liabilities may adversely impact our results of operations.

The environmental laws of various jurisdictions impose actual and potential obligations on us to remediate contaminated sites. While we have set aside substantial provisions for worldwide environmental liabilities, there is no guarantee that additional costs will not be incurred beyond the amounts for which we have provided in the Group consolidated financial statements. If we are required to further increase our provisions for environmental liabilities in the future, or if we fail to properly manage the safety of our facilities and the environmental risks, this could have a material adverse effect on our business, financial condition and results of operations. For more detail regarding environmental matters, see "Item 4.D Property, Plants and Equipment Environmental Matters" and "Item 18. Financial Statements Note 20."

Significant disruptions of information technology systems or breaches of data security could adversely affect our business.

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including Internet-based systems, to support business processes as well as internal and external communications. The size and complexity of our computer systems make them potentially vulnerable to breakdown, malicious intrusion, malware and other cyber-attacks, which may result in the impairment of production and key business processes.

In addition, our systems are potentially vulnerable to data security breaches whether by employees or others which may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personal information (including sensitive personal information) of our employees, clinical trial patients, customers and others.

Such disruptions and breaches of data security could have a material adverse effect on our business, financial condition and results of operations.

Increasing use of social media and mobile technologies could give rise to liability or breaches of data security.

Novartis and our associates are increasingly relying on social media tools and mobile technologies as a means of communications. To the extent that we seek as a company to use these tools as a means to communicate about our products or about the diseases our products are intended to treat, there are significant uncertainties as to the rules that apply to such communications, and as to the interpretations that health authorities will apply to the rules that exist. As a result, despite our efforts to comply with applicable rules, there is a significant risk that our use of social media and mobile technologies for such purposes may cause us to nonetheless be found in violation of them. In addition, because of the universal availability of social media tools and mobile technologies, our associates may use them in ways that may not be sanctioned by the company, and which may give rise to liability, or which could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personal information (including sensitive personal information) of our employees, clinical trial patients, customers and others. Such uses of social media and mobile technologies could have a material adverse effect on our business, reputation, financial condition and results of operations.

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Earthquakes and other natural disasters could adversely affect our business.

In recent years, extreme weather events and changing weather patterns such as storms, flooding, drought, and temperature changes, appear to have become more common. We operate in countries around the world. As a result, we are potentially exposed to varying natural disaster risks like hurricanes, tornadoes or floods. As a result of these and other potential impacts of climate change on the environment, we could experience business interruptions, destruction of facilities and loss of life, all of which could have a material adverse effect on our business, financial condition and results of operations could be put at risk.

Our corporate headquarters, the headquarters of our Pharmaceuticals and Animal Health Divisions, and certain of our major Pharmaceuticals Division production and research facilities are located near earthquake fault lines in Basel, Switzerland. In addition, other major facilities of several divisions are located near major earthquake fault lines in various locations around the world. In the event of a major earthquake, we could experience business interruptions, destruction of facilities and loss of life, all of which could have a material adverse effect on our business, financial condition and results of operations.

Risks Related To Our ADRs

The price of our ADRs and the US dollar value of any dividends may be negatively affected by fluctuations in the US dollar/Swiss franc exchange rate.

Our American Depositary Shares (ADSs) each representing one Novartis share and evidenced by American Depositary Receipts (ADRs) trade on the NYSE in US dollars. Since the shares underlying the ADRs are listed in Switzerland on the SIX Swiss Exchange (SIX) and trade in Swiss francs, the value of the ADRs may be affected by fluctuations in the US dollar/Swiss franc exchange rate. In addition, since dividends that we may declare will be denominated in Swiss francs, exchange rate fluctuations will affect the US dollar equivalent of dividends received by holders of ADRs. If the value of the Swiss franc decreases against the US dollar, the price at which our ADRs trade may and the value of the US dollar equivalent of any dividend will decrease accordingly.

Holders of ADRs may not be able to exercise preemptive rights attached to shares underlying ADRs.

Under Swiss law, shareholders have preemptive rights to subscribe for issuances of new shares on a pro rata basis. Shareholders may waive their preemptive rights in respect of any offering at a general meeting of shareholders. Preemptive rights, if not previously waived, are transferable during the subscription period relating to a particular offering of shares and may be quoted on the SIX. US holders of ADRs may not be able to exercise the preemptive rights attached to the shares underlying their ADRs unless a registration statement under the US Securities Act of 1933 is effective with respect to such rights and the related shares, or an exemption from this registration requirement is available. In deciding whether to file such a registration statement, we would evaluate the related costs and potential liabilities, as well as the benefits of enabling the exercise by ADR holders of the preemptive rights associated with the shares underlying their ADRs. We cannot guarantee that a registration statement would be filed, or, if filed, that it would be declared effective. If preemptive rights could not be exercised by an ADR holder, JPMorgan Chase Bank, N.A., as depositary, would, if possible, sell the holder's preemptive rights and distribute the net proceeds of the sale to the holder. If the depositary determines, in its discretion, that the rights could not be sold, the depositary might allow such rights to lapse. In either case, the interest of ADR holders in Novartis would be diluted and, if the depositary allowed rights to lapse, holders of ADRs would not realize any value from the preemptive rights.

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Item 4. Information on the Company

4.A History and Development of Novartis

Novartis AG

Novartis AG was incorporated on February 29, 1996 under the laws of Switzerland as a stock corporation (*Aktiengesellschaft*) with an indefinite duration. On December 20, 1996, our predecessor companies, Ciba-Geigy AG and Sandoz AG, merged into this new entity, creating Novartis. We are domiciled in and governed by the laws of Switzerland. Our registered office is located at the following address:

Novartis AG
Lichtstrasse 35
CH-4056 Basel, Switzerland
Telephone: 011-41-61-324-1111
Web: www.novartis.com

Novartis is a multinational group of companies specializing in the research, development, manufacturing and marketing of a broad range of healthcare products led by innovative pharmaceuticals. Novartis AG, our Swiss holding company, owns, directly or indirectly, all of our significant operating companies. For a list of our significant operating subsidiaries, see "Item 18. Financial Statements Note 32."

Important Corporate Developments 2011-2013

2013

November	Novartis announces a $5.0 billion share buyback. The buyback begins on the date of the announcement and will be executed over two years on the second trading line.
	Novartis announces a definitive agreement to divest its blood transfusion diagnostics unit to Grifols S.A. of Spain, for $1.7 billion. This transaction was completed in January 2014.
	Novartis announces that it will co-locate certain scientific resources in order to improve the efficiency and effectiveness of its global research organization. Changes include establishing a respiratory research group in Cambridge, Massachusetts, a proposal to close the Horsham, UK, research site, a plan to exit from the Vienna, Austria research site, consolidation of the US-based component of oncology research from Emeryville, California to Cambridge, Massachusetts, closure of the biotherapeutics development unit in La Jolla, California, and a plan to exit research in topical applications for dermatology.
September	Novartis announces that it has entered into an exclusive global licensing and research collaboration agreement with Regenerex LLC, a biopharmaceutical company based in Louisville, Kentucky, for use of the company's novel Facilitating Cell Therapy (FCRx) platform.
August	Joerg Reinhardt, Ph.D., assumes role of Chairman of the Board of Directors of Novartis AG on August 1.
July	The Novartis Board of Directors announces a final agreement with its former Chairman, Dr. Daniel Vasella. From the date of the Annual General Meeting held on February 22, 2013, until October 31, 2013, Dr. Vasella was to provide certain transitional services, including select Board mandates with subsidiaries of Novartis and support of the ad-interim Chairman and the new Chairman. For his transitional services during such period, Dr. Vasella would receive cash of CHF 2.7 million, and 31,724 unrestricted shares as of October 31, 2013 (the market value of the shares as of the date of the announcement was approximately CHF 2.2 million). In addition, from November 1, 2013, to December 31, 2016, Dr Vasella will receive a minimum of $250,000 per annum in exchange for making himself available to Novartis, at Novartis' request and discretion, to provide specific consulting services, such as the coaching of high-potential associates of Novartis and speeches at key Novartis events at a daily fee rate of $25,000, which will be offset against the $250,000 minimum annual payment. During November and December 2013, Dr. Vasella did not provide any coaching to associates and did not receive any compensation for this

period.

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	Novartis announces that it has entered into a development and licensing agreement with Biological E Limited (BioE), a biopharmaceutical company based in India, for two vaccines to protect against typhoid and paratyphoid fevers. The agreement advances the Novartis goal to deliver accessible and affordable vaccines that address unmet medical need in endemic regions.
April	Novartis and Malaria No More, a leading global charity determined to end malaria deaths, announce that they are joining forces on the Power of One campaign to help close the treatment gap and accelerate progress in the fight against malaria. Over the next three years, Novartis will support the campaign financially and also donate up to three million full courses of its pediatric antimalarial drug to match the treatments donated by the public, doubling the impact of these donations.
February	Novartis announces that the Novartis AG Board of Directors and Dr. Vasella agreed to cancel his non-competition agreement and all related conditional compensation. The agreement was to take effect after Dr. Vasella stepped down as Chairman of the Board at the Novartis Annual General Meeting on February 22, 2013.
January	Novartis announces that, at his own wish, Novartis AG Chairman of the Board of Directors Dr. Daniel Vasella will not stand for re-election as a member of the Board of Directors at the Annual General Meeting to be held on February 22, 2013. The Board of Directors proposed the election of, among others, Joerg Reinhardt, Ph.D., as a member of the Board for a term of office beginning on August 1, 2013, and ending on the day of the Annual General Meeting in 2016. The Board announced its intention to elect Joerg Reinhardt as Chairman of the Board of Directors as from August 1, 2013. The Board of Directors further announced its intention to elect its current Vice-Chairman, Ulrich Lehner, Ph.D., as Chairman of the Board of Directors for the period from February 22, 2013, until the new Chairman took office.
2012	
September	Novartis successfully completes a $2.0 billion bond offering in two tranches.
August	Novartis and the University of Pennsylvania (Penn) form a broad-based Research & Development alliance to advance novel T-cell immunotherapies to treat cancer. Novartis and Penn enter into a multi-year collaboration to study chimeric antigen receptor (CAR) technology for the treatment of cancer. The parties establish a joint Center for Advanced Cellular Therapies at Penn to develop and manufacture CARs. Novartis licenses worldwide rights to the first CAR investigational therapy, CART-19, from Penn, and obtains worldwide commercial rights to products from the collaboration. Novartis will provide an up-front payment to Penn, research funding, funding for the establishment of the CACT and milestone payments for the achievement of certain clinical, regulatory and commercial milestones and royalty payments.

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May	Sandoz announces an agreement to acquire Fougera Pharmaceuticals, based in Melville, New York, for $1.525 billion, to make Sandoz the number one generic dermatology medicines company globally and in the US, and to strengthen Sandoz's differentiated products strategy. The acquisition was completed in July 2012.
March	Alcon gains exclusive rights outside the US to ocriplasmin, a potential first pharmacological treatment for vitreomacular adhesion. Alcon pays ThromboGenics an upfront payment of EUR 75 million, with potential additional payments based on milestones, and on royalties on sales.
January	Novartis extends its commitment to help achieve the final elimination of leprosy. Our new five-year commitment includes a donation of treatments worth an estimated $22.5 million, and is expected to reach an estimated 850,000 patients. Novartis will also intensify efforts to build a multi-stakeholder initiative in a final push against leprosy. We have a long history in fighting leprosy, donating medicines and developing programs to support patients, valued at more than $100 million since 1986.
	Novartis announces the restructuring of its US Pharmaceuticals business to strengthen its competitive position in light of the loss of patent protection for *Diovan* and the expected impact on the worldwide sales of *Tekturna/Rasilez* after the termination of the ALTITUDE study. The restructuring of the US General Medicines business results in a reduction of 1,960 positions and leads to an exceptional charge of $160 million in the first quarter of 2012 and to expected annual savings of approximately $450 million by 2013.

2011

December	Following the seventh interim review of data from the ALTITUDE study with *Tekturna/Rasilez* (aliskiren), Novartis decided to terminate the trial based on the recommendation of the independent Data Monitoring Committee (DMC) overseeing the study. The DMC concluded that patients were unlikely to benefit from treatment on top of standard anti-hypertensive medicines, and identified higher adverse events in patients receiving *Tekturna/Rasilez* in addition to standard of care in the trial. Novartis has written to healthcare professionals worldwide recommending that hypertensive patients with diabetes should not be treated with *Tekturna/Rasilez*, or combination products containing aliskiren, if they are also receiving an angiotensin-converting enzyme (ACE) inhibitors or an angiotensin receptor blocker (ARB). As an additional precautionary measure, Novartis has ceased promotion of *Tekturna/Rasilez*-based products for use in combination with an ACE or ARB. A reassessment of the future sales potential of *Tekturna/Rasilez* in light of the ALTITUDE results has led to an exceptional charge of approximately $900 million (of which approximately $800 million are non-cash) recognized in the fourth quarter of 2011. The charge comprises impairments to intangible and manufacturing assets and excess inventory together with trial wind down and other exit costs. The accounting charge is triggered by lower sales expectations and did not seek to anticipate the results of our ongoing discussions with health authorities concerning *Tekturna/Rasilez*.
	We voluntarily suspended operations and shipments from the OTC Division facility located at Lincoln, Nebraska. This action was taken to accelerate maintenance and other improvement activities at the site. Subsequently, in January 2012, we voluntarily recalled certain OTC Division products, as well as an Animal Health Division product that were produced at the Lincoln facility. We took a charge of $115 million related to the temporary suspension of production at the facility.
	Novartis discontinues development of PRT128 for acute coronary syndrome and chronic coronary heart disease, and SMC021 for osteoporosis and osteoarthritis, resulting in intangible asset and other impairment charges of approximately $160 million.

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October	Novartis discontinues development of AGO178 for major depressive disorder, resulting in an intangible asset impairment charge of $87 million.
April	Following the acquisition of the remaining non-controlling interest in Alcon, Inc., on April 8, an Extraordinary General Meeting of Novartis shareholders approved the merger of Alcon, Inc. into Novartis, creating the global leader in eye care. As a result, the Alcon Division became the newest division in our strategically diversified healthcare portfolio. In order to complete the transaction, the Extraordinary General Meeting authorized the Board of Directors of Novartis to issue 108 million new shares which, together with 57 million shares held in treasury, were used to fund part of the merger consideration.
	Novartis sells global rights to Elidel®, a medicine to treat atopic dermatitis, for $420 million to Meda.
March	Novartis completes acquisition of majority stake in Zhejiang Tianyuan vaccines company in China. The total amount paid for the 85% interest was $194 million, excluding $39 million of cash acquired.
January	Novartis announces agreement to acquire Genoptix, Inc. in an all cash tender offer. The acquisition, which was completed in March, of 100% of the shares of Genoptix totaled $458 million, excluding the $24 million of cash acquired. Genoptix laboratory service offerings are expected to provide a strategic fit with our diagnostics activities, and to complement our internal capabilities aimed at improving health outcomes by advancing individualized treatment programs.

For information on our principal expenditures on property, plants and equipment, see "Item 4. Information on the Company 4.D Property, Plants and Equipment." For information on our significant investments in research and development, see the sections headed "Research and Development" included in the descriptions of our six operating divisions under "Item 4. Information on the Company 4.B Business Overview."

4.B Business Overview

OVERVIEW

Novartis provides healthcare solutions that address the evolving needs of patients and societies worldwide. Our broad portfolio includes innovative medicines, eye care, cost-saving generic pharmaceuticals, preventive vaccines and diagnostic tools, over-the-counter and animal health products.

The Group's wholly-owned businesses are organized into six global operating divisions, and we report our results in the following five segments:

Pharmaceuticals: Innovative patent-protected prescription medicines

Alcon: Surgical, ophthalmic pharmaceutical and vision care products

Sandoz: Generic pharmaceuticals

Vaccines and Diagnostics: Preventive human vaccines and blood testing diagnostics (following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the division now consists only of Vaccines)

Consumer Health: OTC (over-the-counter medicines) and Animal Health

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Novartis is the only healthcare company globally with leading positions in each of these areas. To maintain our competitive positioning across these growing segments of the healthcare industry, we place a strong focus on innovating to meet the evolving needs of patients around the world, growing our presence in new and emerging markets, and enhancing our productivity to invest for the future and increase returns to shareholders.

Novartis achieved net sales of $57.9 billion in 2013, while net income amounted to $9.3 billion. Research & Development expenditure in 2013 amounted to $9.9 billion ($9.7 billion excluding impairment and amortization charges). Of the Group's total net sales, $14.7 billion, or 25%, came from Emerging Growth Markets, and $43.2 billion, or 75%, came from Established Markets. Emerging Growth Markets (EGMs) comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Headquartered in Basel, Switzerland, our Group companies employed approximately 135,696 full-time equivalent associates as of December 31, 2013, and sell products in approximately 155 countries around the world.

Pharmaceuticals Division

Pharmaceuticals researches, develops, manufactures, distributes and sells patented prescription medicines and is organized in the following business franchises: Primary Care, consisting of Primary Care medicines and Established Medicines; and Specialty Care, consisting of Ophthalmology, Neuroscience, Integrated Hospital Care, and Critical Care medicines. Novartis Oncology is organized as a business unit, responsible for the global development and marketing of oncology products. In 2013, the Pharmaceuticals Division accounted for $32.2 billion, or 56%, of Group net sales, and for $9.4 billion, or 80%, of Group operating income (excluding Corporate income and expense, net).

Alcon Division

Our Alcon Division researches, develops, manufactures, distributes and sells eye care products and technologies to serve the full life cycle of eye care needs. Alcon offers a broad range of products to treat many eye diseases and conditions, and is organized into three businesses: Surgical, Ophthalmic Pharmaceuticals and Vision Care. The Surgical portfolio includes technologies and devices for cataract, retinal, glaucoma and refractive surgery, as well as intraocular lenses to treat cataracts and refractive errors, like presbyopia and astigmatism. Alcon also provides viscoelastics, surgical solutions, surgical packs, and other disposable products for cataract and vitreoretinal surgery. In Ophthalmic Pharmaceuticals, the portfolio includes treatment options for elevated intraocular pressure caused by glaucoma, anti-infectives to aid in the treatment of bacterial infections and bacterial conjunctivitis, and ophthalmic solutions to treat inflammation and pain associated with ocular surgery, as well as an intravitreal injection for vitreomacular traction including macular hole. The pharmaceutical product portfolio also includes eye and nasal allergy treatments, as well as over-the-counter dry eye relief and ocular vitamins. The Vision Care portfolio comprises daily disposable, monthly replacement, and color-enhancing contact lenses, as well as a complete line of contact lens care products including multi-purpose and hydrogen-peroxide based solutions, rewetting drops and daily protein removers. In 2013, Alcon accounted for $10.5 billion, or 18%, of Group net sales, and for $1.2 billion, or 11%, of Group operating income (excluding Corporate income and expense, net).

Sandoz Division

Our Sandoz Division develops, manufactures, distributes and sells prescription medicines, as well as pharmaceutical and biotechnological active substances, which are not protected by valid and enforceable third-party patents. Sandoz has activities in Retail Generics, Anti-Infectives and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the specialty areas

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of Dermatology, Respiratory and Ophthalmics. In Anti-Infectives, Sandoz manufactures active pharmaceutical ingredients and intermediates mainly antibiotics for internal use by Retail Generics and for sale to third-party customers. In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- or other biotechnology-based products (known as biosimilars or follow-on biologics) and provides biotechnology manufacturing services to other companies, and in Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market. In 2013, Sandoz accounted for $9.2 billion, or 16%, of Group net sales, and for $1.0 billion, or 9%, of Group operating income (excluding Corporate income and expense, net).

Vaccines and Diagnostics Division

Our Vaccines and Diagnostics Division consists of two activities: Vaccines and Diagnostics. Following the January 9, 2014, completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the Division now consists only of Vaccines. Vaccines researches, develops, manufactures, distributes and sells human vaccines worldwide. Diagnostics researched, developed, distributed and sold blood testing and molecular diagnostics products. In 2013, the Vaccines and Diagnostics Division accounted for $2.0 billion, or 3%, of Group net sales.

Consumer Health

Consumer Health consists of two Divisions: Over-the-Counter (OTC) and Animal Health. Each has its own research, development, manufacturing, distribution and selling capabilities, but neither is material enough to the Group to be separately disclosed as a segment. OTC offers readily available consumer medicine, and Animal Health provides veterinary products for farm and companion animals. In 2013, Consumer Health accounted for $4.1 billion, or 7%, of Group net sales, and for $0.2 billion, or 1%, of Group operating income (excluding Corporate income and expense, net).

PHARMACEUTICALS

Overview

Our Pharmaceuticals Division is a world leader in offering innovation-driven, patent-protected medicines to patients and physicians.

The Pharmaceuticals Division researches, develops, manufactures, distributes and sells patented pharmaceuticals in the following therapeutic areas:

- Oncology
- Primary Care
  - Primary Care Medicines
  - Established Medicines
- Specialty Care
  - Ophthalmology
  - Neuroscience

Integrated Hospital Care

Critical Care

The Pharmaceuticals Division is organized into global business franchises responsible for the commercialization of various products as well as Novartis Oncology, a business unit responsible for the global development and commercialization of oncology products.

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The Pharmaceuticals Division is the largest contributor among the six divisions of Novartis and reported consolidated net sales of $32.2 billion in 2013, which represented 56% of the Group's net sales.

The division is made up of approximately 80 affiliated companies which together employed 65,262 full-time equivalent associates as of December 31, 2013, and sell products in approximately 155 countries. The product portfolio of the Pharmaceuticals Division includes more than 50 key marketed products, many of which are leaders in their respective therapeutic areas. In addition, the division's portfolio of development projects includes 144 potential new products and new indications or new formulations for existing products in various stages of clinical development.

Pharmaceuticals Division Products

The following table and summaries describe certain key marketed products in our Pharmaceuticals Division. While we intend to sell our marketed products throughout the world, not all products and indications are currently available in every country. Compounds and new indications in development are subject to required regulatory approvals and, in certain instances, contractual limitations. These compounds and indications are in various stages of development throughout the world. It may not be possible to obtain regulatory approval for any or all of the new compounds and new indications referred to in this Form 20-F in any country or in every country. In addition, for some of our products, we are required to conduct post-approval studies (Phase IIIb/IV) to evaluate long-term effects or to gather information on the use of the products under special conditions. See " Regulation" for further information on the approval process. Some of the products listed below have lost patent protection or are otherwise subject to generic competition. Others are subject to patent challenges by potential generic competitors. See below and " Intellectual Property" for further information on the patent status of our Pharmaceuticals Division's products.

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Key Marketed Products

Business franchise	Product	Common name	Indication[1]	Formulation
Oncology	*Afinitor/Votubia*	everolimus	Advanced renal cell carcinoma after failure of treatment with VEGF-targeted therapy Advanced pancreatic neuroendocrine tumors SEGA associated with tuberous sclerosis Renal angiomyolipoma associated with tuberous sclerosis Advanced breast cancer in post-menopausal HR+/HER2- women in combination with exemestane, after failure of anastrozole or letrozole	Tablet Dispersible tablets for oral suspension
	Exjade	deferasirox	Chronic iron overload due to blood transfusions and non-transfusion dependent thalassemia	Dispersible tablet for oral suspension
	Femara	letrozole	Hormone receptor positive early breast cancer in postmenopausal women following surgery (upfront adjuvant therapy) Early breast cancer in post-menopausal women following standard tamoxifen therapy (extended adjuvant therapy) Advanced breast cancer in post-menopausal women (both as first- and second-line therapies)	Tablet
	Gleevec/ Glivec	imatinib mesylate/imatinib	Certain forms of Ph+ chronic myeloid leukemia Certain forms of KIT+ gastrointestinal stromal tumors Certain forms of acute lymphoblastic leukemia Dermatofibrosarcoma protuberans Hypereosinophilic syndrome Aggressive systemic mastocytosis Myelodysplastic/myeloproliferative diseases	Tablet Capsules
	Jakavi	ruxolitnib	Disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis (also known as chronic idiopathic myelofibrosis), post-polycythemia vera myelofibrosis or post-essential thrombocythemia myelofibrosis	Tablet
	Sandostatin LAR & Sandostatin SC	octreotide acetate for injectable suspension & octreotide acetate	Acromegaly Symptom control for certain forms of neuroendocrine tumors Delay of tumor progression in patients with midgut tumors	Vial Ampoule/pre-filled syringe
	Signifor	pasireotide	Cushing's disease	Ampoule/syringe
	Tasigna	nilotinib	Certain forms of chronic myeloid leukemia in patients resistant or intolerant to prior treatment including *Gleevec/Glivec* First line chronic myeloid leukemia	Capsule
	Zometa	zoledronic acid	Skeletal-related events from bone metastases (cancer that has spread to the bones) Hypercalcemia of malignancy	Vial Ready-to-use

[1] Indications vary by country.

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Business franchise	Product	Common name	Indication[1]	Formulation
Primary Care				
Primary Care Medicines	*Amturnide*	aliskiren, amlodipine besylate and hydrochlorothiazide	Hypertension	Tablet
	Arcapta Neohaler/ Onbrez Breezhaler	indacaterol	Chronic obstructive pulmonary disease	Inhalation powder hard capsules
	Diovan	valsartan	Hypertension Heart failure Post-myocardial infarction	Tablets/capsules/oral solution
	Diovan HCT/ Co-Diovan	valsartan and hydrochlorothiazide	Hypertension	Tablet
	Eucreas	vildagliptin and metformin	Type 2 diabetes	Tablet
	Exforge	valsartan and amlodipine besylate	Hypertension	Tablet
	Exforge HCT	valsartan, amlodipine besylate and hydrochlorothiazide	Hypertension	Tablet
	Galvus	vildagliptin	Type 2 diabetes	Tablet
	Seebri Breezhaler	glycopyrronium bromide	Chronic obstructive pulmonary disease	Inhalation powder hard capsules
	Tekamlo/Rasilamlo	aliskiren and amlodipine besylate	Hypertension	Tablet
	Tekturna/Rasilez	aliskiren	Hypertension	Tablet
	Tekturna HCT/Rasilez HCT	aliskiren and hydrochlorothiazide	Hypertension	Tablet
	Ultibro Breezhaler	indacaterol / glycopyrronium bromide	Chronic obstructive pulmonary disease	Inhalation powder hard capsules
	Xolair	omalizumab	Severe allergic asthma	Lyophilized powder for reconstitution and liquid formulation in pre-filled syringes as subcutaneous injection
Established Medicines	*Cibacen*	benazepril hydrochloride	Hypertension Adjunct therapy in congestive heart failure Progressive chronic renal insufficiency	Tablet
	Clozaril/ Leponex	clozapine	Treatment-resistant schizophrenia Prevention and treatment of recurrent suicidal behavior in patients with schizophrenia and psychotic disorders	Tablet

Coartem/ *Riamet*	artemether and lumefantrine	*Plasmodium falciparum* malaria or mixed infections that include *Plasmodium falciparum* Standby emergency malaria treatment	Tablet Dispersible tablet for oral suspension
Focalin & *Focalin XR*	dexmethylphenidate HCl & dexmethylphenidate extended release	Attention deficit hyperactivity disorder	Tablet Capsule
Foradil	formoterol	Asthma Chronic obstructive pulmonary disease	*Aerolizer* (capsules) Aerosol
Lamisil	terbinafine (terbinafine hydrochloride)	Fungal infection of the skin and nails caused by dermatophyte fungi *Tinea capitis* Fungal infections of the skin for the treatment of tinea corporis, tinea cruris, tinea pedis and yeast infections of the skin caused by the genus *Candida* Onychomycosis of the toenail or fingernail due to dermatophytes	Tablet Cream DermGel Solution Spray

(1) Indications vary by country.

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Business franchise	Product	Common name	Indication[1]	Formulation
	Lescol/ Lescol XL	fluvastatin sodium	Hypercholesterolemia and mixed dyslipidemia in adults Secondary prevention of major adverse cardiac events Slowing the progression of atherosclerosis Heterozygous familial hypercholesterolemia in children and adolescents	Capsule Tablet
	Reclast/ Aclasta	zoledronic acid 5 mg	Treatment of osteoporosis in postmenopausal women Treatment of osteoporosis in men Treatment and prevention of glucocorticoid-induced osteoporosis Prevention of postmenopausal osteoporosis Treatment of Paget's disease of the bone	Intravenous infusion
	Ritalin	methylphenidate HCl	Attention deficit hyperactivity disorder and narcolepsy	Tablet
	Ritalin LA	methylphenidate HCl modified release	Attention deficit hyperactivity disorder	Capsule
	Tegretol	carbamazepine	Epilepsy Pain associated with trigeminal neuralgia Acute mania and bipolar affective disorders	Tablet Chewable tablet Oral suspension Suppository
	Trileptal	oxcarbazepine	Epilepsy	Tablet Oral suspension
	Vivelle-Dot/ Estradot	estradiol hemihydrate	Estrogen replacement therapy for the treatment of the symptoms of natural or surgically induced menopause Prevention of postmenopausal osteoporosis	Transdermal patch
	Voltaren/Cataflam	diclofenac sodium/potassium/resinate/free acid	Inflammatory and degenerative forms of rheumatism Post-traumatic and post-operative pain, inflammation and swelling Painful and/or inflammatory conditions such as migraine, ear, nose and throat, or dysmenorrhoea	Tablet Capsule Oral drop Ampoule for injection Suppository Gel Powder for oral solution Transdermal patch

(1) Indications vary by country.

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Business franchise	Product	Common name	Indication[1]	Formulation
Specialty Care				
Ophthalmology	*Lucentis*	ranibizumab	Wet age-related macular degeneration Visual impairment due to diabetic macular edema Visual impairment due to macular edema secondary to retinal vein occlusion Visual impairment due to choroidal neovascularization secondary to pathologic myopia	Intravitreal injection
Neuroscience	*Comtan*	entacapone	Parkinson's disease patients who experience end-of-dose motor (or movement) fluctuations	Tablet
	Exelon & *Exelon* Patch	rivastigmine tartrate & rivastigmine transdermal system	Mild-to-moderate Alzheimer's disease dementia Severe Alzheimer's disease dementia Dementia associated with Parkinson's disease	Capsule Oral solution Transdermal patch
	Extavia	interferon beta-1b	Relapsing remitting and/or relapsing forms of multiple sclerosis in adult patients	Subcutaneous injection
	Fanapt	iloperidone	Schizophrenia	Tablet
	Gilenya	fingolimod	Relapsing forms of multiple sclerosis	Capsule
	Stalevo	carbidopa, levodopa and entacapone	Parkinson's disease patients who experience end-of-dose motor (or movement) fluctuations	Tablet
Integrated Hospital Care	*Cubicin*	daptomycin	Complicated skin and skin structure infections caused by Gram-positive susceptible isolates *Staphylococcus aureus* bloodstream infections (bacteremia), including those with right-sided infective endocarditis, caused by susceptible isolates	Powder for solution, injection or infusion
	Ilaris	canakinumab	Cryopyrin-associated periodic syndrome Systemic juvenile idiopathic arthritis	Lyophilized powder for reconstitution for subcutaneous injection
	Myfortic	mycophenolic acid (as mycophenolate sodium)	Prophylaxis of organ rejection in patients receiving allogeneic renal transplants	Gastro-resistant tablet
	Neoral/Sandimmune	cyclosporine, USP Modified	Prevention of rejection following certain organ transplantation Non-transplantation autoimmune conditions such as severe psoriasis and severe rheumatoid arthritis	Capsule Oral solution Intravenous (Sandimmune)
	Simulect	basiliximab	Prevention of acute organ rejection in de novo renal transplantation	Vial for injection or infusion
	Tyzeka/Sebivo	telbivudine	Chronic hepatitis B	Tablet Oral solution
	Zortress/Certican	everolimus	Prevention of organ rejection (heart, liver and kidney)	Tablet Dispersible tablet
Critical Care		tobramycin	*Pseudomonas aeruginosa* infection in cystic fibrosis	

TOBI/TOBI Podhaler	Nebulizer solution/Inhalation powder

(1) Indications vary by country and/or formulation.

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Selected Leading Products

Oncology

Gleevec/Glivec (imatinib mesylate/imatinib mesylate) is a kinase inhibitor approved to treat patients with metastatic and/or unresectable KIT+ gastrointestinal stromal tumors (GIST), as an adjuvant treatment for certain adult patients following resection of KIT+ GIST, and as a targeted therapy for Philadelphia chromosome-positive chronic myeloid leukemia (Ph+ CML). First launched in 2001, *Gleevec/Glivec* is available in more than 120 countries. *Gleevec/Glivec* is also approved in the US, EU and Japan to treat Philadelphia chromosome-positive acute lymphoblastic leukemia, a rapidly progressive form of leukemia. *Gleevec/Glivec* is also approved in the US and EU to treat dermatofibrosarcoma protuberans, a rare solid tumor; hypereosinophilic syndrome; myelodysplastic/myeloproliferative diseases and other rare blood disorders. In the US, *Gleevec* is also approved for aggressive systemic mastocytosis. *Gleevec/Glivec* has received approvals in 68 countries as a post-surgery (adjuvant setting) therapy for certain adult patients with KIT+ GIST. Following approval by the FDA in January 2013, the EMA approved *Gleevec/Glivec* in July 2013 for pediatric patients with newly diagnosed Ph+ acute lymphoblastic leukemia in combination with chemotherapy.

Sandostatin SC/Sandostatin LAR (octreotide acetate/octreotide acetate for injectable suspension) is indicated for the treatment of patients with acromegaly, a chronic disease caused by over-secretion of pituitary growth hormone in adults. *Sandostatin* is also indicated for the treatment of patients with certain symptoms associated with carcinoid tumors and other types of gastrointestinal and pancreatic neuroendocrine tumors. Additionally, *Sandostatin LAR* is approved in 44 countries for the delay of tumor progression in patients with midgut carcinoid tumors. A total of 40 countries have also approved a new presentation of *Sandostatin LAR*, which includes a new diluent, safety needle and vial adapter improving the mixing and administration, with additional filings underway. *Sandostatin* was first launched in 1988 and is approved in more than 100 countries. Patent protection for the active ingredient of *Sandostatin* has expired. Generic versions of *Sandostatin* SC are available in the US and elsewhere. Patents protecting the *Sandostatin LAR* formulation, the long-acting version of *Sandostatin* which represents a majority of our *Sandostatin* sales, expire in 2014 and beyond in the US, but expired in July 2010 in key markets outside the US.

Afinitor/Votubia (everolimus), is an oral inhibitor of the mTOR pathway. *Afinitor* is approved in more than 100 countries and regions including the US, EU member states and Japan for advanced renal cell carcinoma following vascular endothelial growth factor-targeted therapy. *Afinitor* is also approved in nearly 50 countries, including the US, EU and Japan for the treatment of advanced pancreatic neuroendocrine tumors. In addition, *Afinitor* is approved in more than 75 countries for advanced hormone receptor-positive, HER2-negative breast cancer (advanced HR+/HER2- breast cancer). Everolimus is also approved in more than 40 countries including in the US as *Afinitor* and in the EU as *Votubia* to treat patients with subependymal giant cell astrocytoma (SEGA) associated with tuberous sclerosis complex (TSC) and for the treatment of adult patients with renal angiomyolipomas and TSC who do not require immediate surgery. The dispersible formulation of the product is now approved in the TSC-SEGA population in the EU. Everolimus, the active ingredient in *Afinitor*, is also available under the trade names *Zortress/Certican* for use in transplantation, and is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Exjade (deferasirox) is an oral iron chelator approved for the treatment of chronic iron overload due to blood transfusions in patients two years of age and older. Patients with congenital and acquired chronic anemia, such as thalassemia, sickle cell disease and myelodysplastic syndromes, require transfusions, which puts them at risk of iron overload. *Exjade* was first approved in 2005 and is now approved in more than 100 countries, including the US, EU member states and Japan. *Exjade* is also approved in more than 50 countries, including the US and EU member states, for the treatment of chronic iron overload in patients 10 years of age and older with non-transfusion-dependent thalassemia.

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Tasigna (nilotinib) is a signal transduction inhibitor of the BCR-ABL tyrosine kinase. Since its launch in 2007, *Tasigna* has been approved in more than 110 countries to treat patients with Ph+ CML in the chronic and/or accelerated phase who are resistant or intolerant to existing treatment, including *Gleevec/Glivec*. It is also approved in more than 85 markets, including the US, EU member states, Switzerland and Japan, to treat newly diagnosed patients in the chronic phase. Results from the global, randomized Phase III trial called ENESTnd (Evaluating Nilotinib Efficacy and Safety in Clinical Trials of Newly Diagnosed Ph+ CML Patients), a head-to-head comparison against *Gleevec/Glivec,* showed that *Tasigna* produced faster and deeper responses than *Gleevec/Glivec* in adult patients with newly diagnosed Ph+ CML. The ENESTnd five-year follow-up continued to demonstrate higher rates of early and deeper sustained molecular response, including a reduced risk of progression in patients treated with *Tasigna* compared to *Gleevec/Glivec*. Data also indicated a trend for higher overall survival and event-free survival in patients treated with *Tasigna* compared to *Gleevec/Glivec*. In addition, ENESTcmr is the first randomized trial in patients with Ph+ CML to investigate the impact of switching adult patients with residual molecular disease to *Tasigna* after a minimum of two years on treatment with *Gleevec/Glivec.* Three-year results from the ENESTcmr trial showed that switching to *Tasigna* led to deeper molecular responses in these patients, further reducing their disease burden.

Zometa (zoledronic acid for injection/zoledronic acid 4 mg) is a leading treatment to reduce or delay skeletal-related events, including pathologic fracture, spinal cord compression, and/or requirement of radiation therapy or surgery to bone, in patients with bone metastases (cancer that has spread to the bones) from solid tumors and multiple myeloma. First approved in the US in 2001 for the treatment of hypercalcemia of malignancy (tumor-induced excessive levels of calcium), *Zometa* is approved in more than 100 countries for this indication as well as for the treatment of patients with multiple myeloma and patients with bone metastasis from solid malignancies, including prostate, breast and lung cancer. Zoledronic acid, the active ingredient in *Zometa*, is also available under the trade names *Reclast/Aclasta* for use in non-oncology indications. *Zometa* is facing generic competition following patent expirations in 2013 on its active ingredient, zoledronic acid, in the US and other major markets. See " Intellectual Property" below for further information on the patent status of *Zometa*.

Femara (letrozole) is a once-daily oral aromatase inhibitor for the treatment of early stage or advanced breast cancer in postmenopausal women. *Femara* was first launched in 1996 and is currently available in more than 90 countries. *Femara* is approved in the US, EU member states and other countries in the adjuvant, extended adjuvant and neoadjuvant settings for early stage breast cancer. *Femara* is also approved in the US and other countries as adjuvant therapy for locally advanced breast cancer and for advanced breast cancer following anti-estrogen therapy. *Femara* is approved as neo-adjuvant (pre-operative) therapy for early stage breast cancer in a limited number of countries. In Japan, *Femara* is approved for the treatment of all hormone receptor-positive breast cancer in postmenopausal women. *Femara* has faced generic competition since 2011 when the patent on its active ingredient, letrozole, expired in the US and major countries in Europe. See " Intellectual Property" below for further information on the patent status of *Femara*.

Jakavi (ruxolitinib) is an oral inhibitor of the JAK 1 and JAK 2 tyrosine kinases. It is the first JAK inhibitor indicated for the treatment of disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis, post-polycythemia vera myelofibrosis or post-essential thromboycythemia myelfibrosis. *Jakavi* is currently approved in more than 50 countries, including the member states of the EU. In three-year follow-up data from the COMFORT-I and COMFORT-II Phase III studies in myelofibrosis, *Jakavi* treatment reduced the risk of death and resulted in sustained reductions in spleen size a hallmark of myelofibrosis while also improving quality of life. In three-year follow-up of the COMFORT-II study, patients treated with *Jakavi* demonstrated an overall survival advantage compared to patients receiving conventional therapy with a 52% reduction in risk of death observed in the *Jakavi* arm compared with conventional therapy. Novartis licensed ruxolitinib from Incyte Corporation for development and commercialization outside the US.

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Primary Care

Primary Care Medicines

Diovan (valsartan), together with *Diovan HCT/Co-Diovan* (valsartan and hydrochlorothiazide), is the top-selling branded anti-hypertensive medication worldwide (IMS October 2013; 59 countries audited). *Diovan* is the only agent in its class approved to treat all of the following: high blood pressure (including children 6 to 18 years), high-risk heart attack survivors and patients with heart failure. First launched in 1996, *Diovan* is available in more than 120 countries for treating high blood pressure, in more than 90 countries for heart failure, and in more than 70 countries for heart attack survivors. First launched in 1997, *Diovan HCT/Co-Diovan* is approved in over 100 countries worldwide. In July 2008, the FDA approved *Diovan HCT* for the first-line treatment of hypertension in patients unlikely to achieve blood pressure control on a single agent. In 2009, *Co-Diovan* was approved for treatment of high blood pressure in Japan. In September 2010, all EU member states locally approved *Diovan* for use in children aged 6 to 18 years. In 2012, the Japanese Ministry of Health, Labor and Welfare (MHLW) approved *Diovan* for the treatment of pediatric hypertension in children age 6 years or older. This approval marks the first time an angiotensin II receptor blocker (ARB) has been approved for the treatment of pediatric hypertension in children age 6 years or older in Japan. In the EU, *Diovan* and *Co-Diovan* have faced generic competition since 2011, following expiration of the patent on valsartan. In the US, the valsartan patent expired in September 2012 and *Diovan HCT* has faced generic competition since then. Generic versions of *Diovan* monotherapy have not yet launched in the US but could potentially launch at any time. Patent protection for *Diovan* expired in Japan in 2013 and will expire in 2016 for *Co-Diovan* (including patent term extensions). Patent litigations are ongoing against generic manufacturers in Europe and Asia. See " Intellectual Property" below for further information on the patent status of *Diovan*.

Exforge (valsartan and amlodipine besylate) is a single-pill combination of the ARB *Diovan* and the calcium channel blocker amlodipine besylate. First approved for the treatment of high blood pressure in Switzerland in 2006, and in the US and EU in 2007, it is now available in more than 100 countries. In 2008, the FDA approved *Exforge* for the first-line treatment of hypertension in patients likely to need multiple drugs to achieve their blood pressure goals. In January 2010, *Exforge* was approved in Japan and also launched in China. *Exforge HCT* (valsartan, amlodipine besylate and hydrochlorothiazide) is a single pill combining three widely prescribed high blood pressure treatments: an ARB (valsartan), calcium channel blocker (amlodipine) and a diuretic (hydrochlorothiazide). *Exforge HCT* was approved in the EU and the US in 2009, and is now available in more than 60 countries.

Galvus (vildagliptin), an oral DPP-4 inhibitor, and *Eucreas*, a single-pill combination of vildagliptin and metformin, are indicated for the treatment of type 2 diabetes. The products were first approved in 2008. *Galvus* is currently approved in more than 100 countries, including EU member states, Japan and countries in Latin America and Asia-Pacific. *Eucreas* was the first single pill combining a DPP-4 inhibitor and metformin that was approved in Europe and is currently approved in more than 100 countries. In 2012, *Galvus* received EU approval for expanded use as a second-line monotherapy for type 2 diabetes patients who cannot take metformin. In addition, in 2012, the European Commission approved the use of *Galvus* and *Eucreas* in combination with other diabetes treatments. The first new approval was for the use of vildagliptin in combination with insulin, with or without metformin, for patients with type 2 diabetes when diet, exercise and a stable dose of insulin do not result in glycemic control. The second approval was for the use of vildagliptin in triple combination with metformin and a sulphonylurea for the treatment of type 2 diabetes when diet and exercise plus dual therapy with these two agents do not provide adequate glycemic control.

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Xolair (omalizumab) is the only humanized monoclonal antibody approved for the treatment of moderate to severe persistent allergic asthma in the US in adolescents (aged 12 and above) and adults. *Xolair* is approved in more than 90 countries, including the US since 2003 and the EU since 2005. It is approved for severe persistent allergic asthma in the EU in children (aged six and above), adolescents, and adults. A liquid formulation of *Xolair* in pre-filled syringes has been launched in most European countries. In Japan, *Xolair* was approved in January 2009 for the treatment of severe persistent allergic asthma in adults (aged 15 and older) and was approved in August 2013 in pediatric patients aged 6 years or older for the same indication. Novartis licensed *Xolair* from Genentech/Roche. We co-promote *Xolair* with Genentech/Roche in the US and share a portion of operating income, but we do not record any US sales. Novartis records all sales of *Xolair* outside the US. See "Item 18. Financial Statements Note 27" for further information.

Arcapta Neohaler/Onbrez Breezhaler (indacaterol) is a once-daily long-acting beta$_2$-adrenergic agonist (LABA) administered in a single-dose dry powder inhaler indicated for maintenance bronchodilator treatment of airflow obstruction in adult patients with chronic obstructive pulmonary disease (COPD). Once-daily *Onbrez Breezhaler* was first approved in the EU in November 2009 at two dose strengths, 150 mcg and 300 mcg. It is now approved in over 100 countries worldwide. In July 2011, the FDA approved a 75 mcg once-daily dose of indacaterol under its US trade name, *Arcapta Neohaler*, and Japanese regulatory authorities approved *Onbrez* Inhalation Capsules in a 150 mcg once-daily dose. In 2012, *Onbrez Breezhaler* 150 mcg was also approved in China. It was the first inhaled COPD product available to patients to be delivered via the low resistance *Breezhaler* inhalation device.

Tekturna/Rasilez (aliskiren) is a treatment for high blood pressure, and the first and only approved direct renin inhibitor. *Tekturna/Rasilez* was approved in the US and EU in 2007, and is now approved in more than 90 countries. The product is known as *Tekturna* in the US and *Rasilez* in the rest of the world. There are various *Tekturna/Rasilez* single-pill combination products approved in various countries, including *Tekturna/Rasilez* combined with the diuretic hydrochlorothiazide, sold as *Tekturna HCT* in the US and *Rasilez HCT* in the EU, and *Tekturna/Rasilez* combined with the calcium channel blocker amlodipine, which is sold as *Tekamlo* in the US and *Rasilamlo* in the EU. A triple combination of these drugs is available in the US, as well, combining aliskiren, amlodipine and hydrochlorothiazide under the brand name *Amturnide*. Following the December 2011 termination of the ALTITUDE study, which was investigating *Tekturna/Rasilez* in a high-risk population of patients with type 2 diabetes and renal impairment, the *Tekturna/Rasilez* product information was updated in 2012 in the EU, US, Japan and other countries to include a contraindication against the combined use of aliskiren with an ACE inhibitor or an ARB in patients with diabetes, and a contraindication/warning against the combined use of aliskiren with an ACE inhibitor or an ARB in patients with renal impairment. In addition, in 2012, Novartis voluntarily ceased marketing *Valturna*, a single pill combination containing aliskiren and the ARB valsartan.

Seebri Breezhaler (glycopyrronium bromide), a once-daily long-acting muscarinic antagonist (LAMA), received its first regulatory approvals in September 2012. *Seebri Breezhaler* 44 mcg inhalation powder, hard capsules received approval in the EU as a maintenance bronchodilator treatment to relieve symptoms for adult patients with COPD, and in Japan the MHLW approved *Seebri* (glycopyrronium) Inhalation Capsules 50 mcg administered through the *Breezhaler* device as an inhaled maintenance bronchodilator treatment for the relief of various symptoms due to airway obstructive disease in COPD (chronic bronchitis, emphysema). It is now approved in more than 50 countries worldwide. *Seebri Breezhaler* is the second inhaled COPD product available to patients to be delivered via the *Breezhaler* inhalation device. Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.

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Ultibro Breezhaler (indacaterol/glycopyrronium bromide) is a once-daily fixed-dose combination of the LABA indacaterol and the LAMA glycopyrronium bromide. *Ultibro Breezhaler* (indacaterol 85 mcg / glycopyrronium 43 mcg), inhalation powder, hard capsules was approved in the EU in September 2013 as a maintenance bronchodilator treatment to relieve symptoms in adult patients with COPD, and in Japan the MHLW approved *Ultibro* Inhalation Capsules (glycopyrronium 50 mcg/indacaterol 110 mcg), delivered through the *Breezhaler* inhalation device, for relief of various symptoms due to airway obstruction in COPD (chronic bronchitis, emphysema). *Ultibro Breezhaler* is the third inhaled COPD product available to patients to be delivered via the *Breezhaler* inhalation device. Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.

Established Medicines

Voltaren/Cataflam (diclofenac sodium/potassium/resinate/free acid) is a leading non-steroidal anti-inflammatory drug (NSAID) for the relief of symptoms in rheumatic diseases such as rheumatoid arthritis and osteoarthritis, and for various other inflammatory and pain conditions. *Voltaren/Cataflam* was first launched in 1973 and is available in more than 140 countries. This product, which is subject to generic competition, is marketed by the Pharmaceuticals Division in a wide variety of dosage forms, including tablets, drops, suppositories, ampoules and topical therapy. In addition, in various countries, our Sandoz Division markets generic versions of the product, our Alcon Division markets *Voltaren* for ophthalmic indications, and our OTC Division markets low-dose oral forms and the topical therapy of *Voltaren* as over-the-counter products.

Ritalin, Ritalin LA, Focalin and *Focalin XR* (methylphenidate HCl, methylphenidate HCl extended release, dexmethylphenidate HCl and dexmethylphenidate HCl extended release) are indicated for the treatment of attention deficit hyperactivity disorder (ADHD) in children and *Focalin XR* is additionally indicated for adults. *Ritalin* and *Ritalin LA* are also indicated for narcolepsy. *Ritalin* was first marketed during the 1950s and is available in over 70 countries. *Ritalin LA* is available in over 30 countries. *Focalin* comprises the active d-isomer of methylphenidate and therefore requires half the dose of *Ritalin*. *Focalin XR* is approved in Switzerland. *Focalin* and *Focalin XR* are available in the US. *Ritalin* immediate-release has generic competition in most countries. Some strengths of *Ritalin* and *Focalin* are subject to generic competition in the US. See " Intellectual Property" below for further information on the patent status of these products.

Reclast/Aclasta (zoledronic acid 5 mg) is the first and only once-yearly bisphosphonate infusion for the treatment of different forms of osteoporosis, and for the treatment of Paget's disease of the bone in men and women. Sold as *Reclast* in the US and *Aclasta* in the rest of the world, the product is approved in more than 100 countries including the US, EU member states and Canada, and is the only bisphosphonate approved to reduce the incidence of fractures at all three key fracture sites (hip, spine and non-spine) in the treatment of postmenopausal osteoporosis. The *Reclast/Aclasta* label was expanded in the EU and US to include the reduction in the incidence of clinical fractures after a low trauma hip fracture. The EU has also approved *Aclasta* for the treatment of osteoporosis in men at increased risk of fracture and for the treatment of osteoporosis associated with long-term systemic glucocorticoid therapy in post-menopausal women. *Reclast* is also approved in the US as a treatment to increase bone mass in men with osteoporosis, the prevention and treatment of glucocorticoid-induced osteoporosis in men and women, as well as for the prevention of osteoporosis in postmenopausal women. Zoledronic acid, the active ingredient in *Reclast/Aclasta*, is also approved in a number of countries in a different dosage under the trade name *Zometa* for certain oncology indications. *Reclast/Aclasta* is facing generic competition following patent expirations in 2013 on its active ingredient, zoledronic acid, in the US and other major markets. See " Intellectual Property" below for further information on the patent status of *Reclast/Aclasta*.

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Specialty Care

Ophthalmology

Lucentis (ranibizumab) is a recombinant humanized high affinity antibody fragment that binds to vascular endothelial growth factors (VEGF). It is the only anti-VEGF therapy licensed in many countries for four ocular indications: wet age-related macular degeneration (wet AMD), visual impairment due to diabetic macular edema (DME), visual impairment due to macular edema secondary to retinal vein occlusion (RVO), and visual impairment due to choroidal neovascularization secondary to pathologic myopia (myopic CNV). *Lucentis* is approved in more than 100 countries to treat patients with wet AMD, for the treatment of visual impairment due to DME and macular edema secondary to RVO. Also, *Lucentis* is licensed in more than 40 countries for the treatment of visual impairment due to myopic CNV. Since its launch in 2007, there are more than 2.2 million patient-treatment years of exposure for *Lucentis.* We licensed *Lucentis* from Genentech for development and commercialization outside of the US. See "Item 18. Financial Statements Note 27" for further information.

Neuroscience

Gilenya (fingolimod) is the first oral therapy approved to treat relapsing forms of multiple sclerosis (MS) and the first in a new class of compounds called sphingosine 1-phosphate receptor modulators. In the US, *Gilenya* is indicated for relapsing forms of MS. In the EU, *Gilenya* is indicated for adult patients with highly active relapsing-remitting MS defined as either high disease activity despite treatment with beta interferon, or rapidly evolving severe relapsing-remitting MS. Experience with *Gilenya* has shown that it improves all four measures of efficacy in MS: annualized relapse rate, physical disability, MRI activity and brain volume loss. *Gilenya* is the only oral disease modifying therapy with proven superior relapse reduction against an active comparator and provides early and long-term reduction in the rate of brain volume loss. As of December 2013, more than 84,500 patients have been treated in clinical trials and in a post-marketing setting and there are currently more than 118,000 patient years of exposure. *Gilenya* is currently approved in over 75 countries around the world. *Gilenya* is licensed from Mitsubishi Tanabe Pharma Corporation.

Exelon (rivastigmine tartrate) and *Exelon* Patch (rivastigmine transdermal system) are cholinesterase inhibitors indicated for the treatment of Alzheimer's disease (AD) dementia and Parkinson's disease (PD) dementia. They are the oral and transdermal formulations, respectively, of the cholinesterase inhibitor rivastigmine. *Exelon* capsules have been available since 1997 to treat mild to moderate AD dementia and are approved in more than 90 countries. In 2006, *Exelon* became the only cholinesterase inhibitor to be approved for mild to moderate PD dementia in addition to AD in both the US and EU. *Exelon* Patch was approved in 2007 in the US and EU and has been approved for the treatment of mild-to-moderate AD in more than 85 countries, including more than 20 countries where it is also approved for Parkinson's disease dementia. The once-daily *Exelon* Patch has shown comparable efficacy and superior tolerability to the highest recommended doses of *Exelon* capsules, with significant improvement in cognition and overall functioning compared to placebo. In June 2013, the FDA expanded the approved indication for *Exelon* Patch to also include the treatment of patients with severe Alzheimer's disease. In January 2013, European Marketing Authorization was obtained for the higher dose in mild-to-moderate AD. *Exelon* capsules are now subject to generic competition in several markets, including the US and the EU. See " Intellectual Property" below for further information on the patent status of these products.

Comtan (entacapone) and *Stalevo* (carbidopa, levodopa and entacapone) are indicated for the treatment of patients with Parkinson's disease who experience end of dose motor (or movement) fluctuations, known as "wearing off". *Comtan* was approved in Europe in 1998 and in the US in 1999 while *Stalevo* was approved in the US and EU in 2003. Both products are marketed in more than 50 countries by Novartis under a licensing agreement with Orion Corporation. *Stalevo* has recently been approved in China and has been submitted for approval in Japan.

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Integrated Hospital Care

Neoral (cyclosporine, USP Modified) is an immunosuppressant to prevent organ rejection following a kidney, liver, or heart transplant. *Neoral* is also approved for use in lung transplant in many countries outside of the US. This micro-emulsion formulation of cyclosporine is also indicated for treating selected autoimmune disorders such as psoriasis and rheumatoid arthritis. First launched in 1995, *Neoral* is marketed in more than 90 countries. This product is subject to generic competition.

Myfortic (enteric-coated formulation of mycophenolate sodium) is approved in more than 90 countries for the prevention of acute rejection of kidney allografts, and is indicated in combination with cyclosporine and corticosteroids. *Myfortic* was first approved in the US in 2004 and in the EU in 2003. See " Intellectual Property" below for further information on the patent status of *Myfortic*.

Zortress/Certican (everolimus) is an oral inhibitor of the mTOR pathway, indicated to prevent organ rejection following solid organ transplantation. *Zortress/Certican* has been extensively studied as an immunosuppressant agent in solid organ transplantation with more than 10,000 transplant recipients enrolled in Novartis-sponsored clinical trials worldwide. Under the trade name *Certican*, it is approved in more than 90 countries to prevent organ rejection for renal and heart transplant patients, and in addition, in more than 50 countries worldwide to prevent organ rejection for liver transplant patients. In the US, under the trade name *Zortress*, the drug is approved for the prophylaxis of organ rejection in adult patients at low-moderate immunologic risk receiving a kidney transplant as well as for the prophylaxis of allograft rejection in adult liver transplant recipients. Everolimus is also available from Novartis in different dosage strengths and for different uses in non-transplant patient populations under the brand names *Afinitor* and *Votubia*. It is also exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Ilaris (canakinumab) is a fully human monoclonal antibody that selectively binds and neutralizes interleukin-1β (IL-1β), a pro-inflammatory cytokine. Since 2009, *Ilaris* has been approved in over 60 countries for the treatment of children and adults suffering from cryopyrin associated periodic syndrome, a group of rare disorders characterized by chronic recurrent fever, urticaria, occasional arthritis, deafness, and potentially life-threatening amyloidosis. In 2013, *Ilaris* was approved in the EU for the treatment of acute gouty arthritis in patients who cannot be managed with standard of care, and in the US, EU and other countries for the treatment of systematic juvenile ideopathic arthritis.

Critical Care

TOBI Podhaler (tobramycin inhalation powder) is an inhaled dry powder formulation of the antibiotic tobramycin, delivered using a simple and portable patient-friendly device that reduces administration time by 72% relative to *TOBI* (tobramycin nebulizer solution), with comparable efficacy and safety. *TOBI Podhaler* was approved by the US FDA in March 2013 and has been approved in the EU since July 2011. It is indicated for the management of cystic fibrosis patients aged six years and older with *Pseudomonas aeruginosa* infection in their lungs, whose lung function is within a certain range.

Compounds in Development

The traditional model of development comprises three phases, which are defined as follows:

Phase I: First clinical trials of a new compound, generally performed in a small number of healthy human volunteers, to assess the clinical safety and tolerability as well as metabolic and pharmacologic properties of the compound.

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Phase II: Clinical studies that are performed with patients who have the target disease, with the aim of continuing the Phase I safety assessment in a larger group, assessing the efficacy of the drug in the patient population, and determining the appropriate doses for further evaluation.

Phase III: Large-scale clinical studies with several hundred to several thousand patients, which are conducted to establish the safety and efficacy of the drug-specific indications for regulatory approval. Phase III trials may also be used to compare a new drug against a current standard of care to evaluate the overall benefit-risk relationship of the new medicine.

Though we use this traditional model as a platform, we have tailored the process to be simpler, more flexible and efficient. Our development paradigm consists of two parts: Exploratory development and Confirmatory development. Exploratory development consists of clinical "proof of concept" (PoC) studies, which are small clinical trials (typically 5-15 patients) that combine elements of traditional Phase I/II testing. These customized trials are designed to give early insights into issues such as safety, efficacy and toxicity for a drug in a given indication. Once a positive proof of concept has been established, the drug moves to the Confirmatory development stage. Confirmatory development has elements of traditional Phase II/III testing and includes trials aimed at confirming the safety and efficacy of the drug in the given indication leading up to submission of a dossier to health authorities for approval. Like traditional Phase III testing, this stage can also include trials which compare the drug to the current standard of care for the disease, in order to evaluate the drug's overall risk/benefit profile.

The following table and paragraph summaries provide an overview of the key projects currently in the Confirmatory development stage within our Pharmaceuticals Division, including projects seeking to develop potential uses of new molecular entities, as well as potential additional indications or new formulations for already marketed products. The year that each project entered the current phase of development disclosed below reflects the year in which the decision to enter the phase was made. This may be different from the year in which the first patient received the first treatment in the related clinical trial. A reference to a project being in registration means that it has been submitted to a health authority for marketing approval.

Selected Development Projects

Project/Product	**Common name**	**Mechanism of action**	**Potential indication/ Disease area**	**Business franchise**	**Formulation/ Route of administration**	**Year Project Entered Current Development Phase**	**Planned filing dates/Current phase**
ACZ885	canakinumab	Anti IL-1β monoclonal antibody	Gouty arthritis	Integrated Hospital Care	Subcutaneous injection	EU: 2013 US: 2011	EU (approved) US (Phase III)
			Hereditary periodic fevers	Integrated Hospital Care		2013	2016/III
			Secondary prevention of cardiovascular events	Critical Care		2011	2017/III
AFQ056	mavoglurant	Metabotropic glutamate receptor 5 antagonist	Fragile X syndrome	Neuroscience	Oral	2010	2015/III
AIN457	secukinumab	Anti IL-17 monoclonal antibody	Psoriasis	Integrated Hospital Care	Lyophilized powder in vial; Intravenous infusion, subcutaneous injection	2013	US/EU (registration)
			Psoriatic arthritis	Integrated Hospital Care		2011	2014/III

Rheumatoid arthritis	Integrated Hospital Care	2011	2015/III
Ankylosing spondylitis	Integrated Hospital Care	2011	2015/III
Uveitis	Ophthalmology	2009	2017/II

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Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
AUY922	luminespib	ATP-competitive non-geldanamycin inhibitor of HSP90	Solid tumors	Oncology	Intravenous	2009	≥2018/II
BAF312	siponimod	Sphingosine-1-phosphate receptor modulator	Secondary progressive multiple sclerosis	Neuroscience	Tablet	2012	≥2018/III
BCT197	TBD	Anti-inflammatory agent	Chronic obstructive pulmonary disease	Primary Care	Oral	2011	≥2018/II
BGJ398	TBD	Pan-FGF receptor kinase inhibitor	Solid tumors	Oncology	Oral	2012	≥2018/II
BGS649	TBD	Aromatase inhibitor	Obese hypogonadotropic hypogonadism	Critical Care	Oral	2010	≥2018/II
BKM120	buparlisib	P13K inhibitor	Breast cancer	Oncology	Oral	2011	2015/III
			Solid tumors			2011	≥2018/I
BYL719	TBD	P13K inhibitor	Solid tumors	Oncology	Tablet	2010	≥2018/I
BYM338	bimagrumab	Inhibitor of activin receptor Type II	Sporadic inclusion body myositis	Integrated Hospital Care	Intravenous infusion	2013	2016/III
			Hip fracture			2013	≥2018/II
CAD106	TBD	Beta-amyloid-protein therapy	Alzheimer's disease	Neuroscience	Subcutaneous, intramuscular injection	2008	≥2018/II
CTL019	TBD	CD19-targeted chimeric antigen receptor T-cell immunotherapy	Leukemia	Oncology	Intravenous	2012	2016/II
DEB025	alisporivir	Cyclophilin inhibitor	Chronic hepatitis C	Integrated Hospital Care	Oral	2011	2017/II
Gilenya	fingolimod	Sphingosine-1-phosphate receptor modulator	Primary progressive multiple sclerosis	Neuroscience	Oral	2008	2015/III
			Chronic inflammatory demyelinating polyradiculoneuropathy			2012	2016/III
HSC835	TBD	Stem cell regeneration	Stem cell transplantation	Integrated Hospital Care	Infusion	2012	≥2018/II
Jakavi	ruxolitinib	Janus kinase inhibitor	Polycythemia vera	Oncology	Oral	2010	2014/III

KAE609	TBD	PfATP4 inhibitor	Malaria	Established Medicines	Oral	2012	2017/II
LBH589	panobinostat	Histone deactelylase inhibitor	Relapsed or relapsed-and-refractory multiple myeloma	Oncology	Oral	2009	2014/III
			Hematological cancers			2009	≥2018/II
LCI699	TBD	Aldosterone synthase inhibitor	Cushing's disease	Oncology	Oral	2011	2017/II
LCQ908	pradigastat	Diacylglycerol acyl transferase-1 inhibitor	Familial chylomicronemia syndrome	Critical Care	Tablet	2012	2014/III
LCZ696	TBD	Angiotensin receptor neprilysin inhibitor	Hypertension	Primary Care	Oral	2012	2014/III
			Chronic heart failure with reduced ejection fraction	Critical Care		2009	2014/III
			Chronic heart failure with preserved ejection fraction	Critical Care		2013	≥2018/II

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Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
LDE225	sonidegib	Smoothened receptor/ hedgehog signaling inhibitor	Advanced basal cell carcinoma	Oncology	Oral	2011	2014/II
			Solid tumors			2011	≥2018/I
			Medulloblastoma			2013	≥2018/III
LDK378	ceritinib	ALK inhibitor	ALK+ advanced non-small cell lung cancer (post chemotherapy and post crizotinib)	Oncology	Oral	2012	2014/II
			ALK+ advanced non-small cell lung cancer (chemotherapy naïve, crizotinib naïve)			2013	2016/III
LEE011	TBD	CDK4/6 Inhibitor	Breast cancer	Oncology	Oral	2013	2016/III
			Solid tumors			2011	≥2018/I
LFF571	TBD	Bacterial elongation factor Tu inhibitor	*Clostridium difficile* infection	Integrated Hospital Care	Oral	2010	≥2018/II
LGX818	encorafenib	RAF inhibitor	BRAF mutant melanoma	Oncology	Oral	2012	2016/III
			Solid tumors			2012	≥2018/II
LIK066	TBD	SGLT 1 / 2 inhibitor	Type 2 diabetes	Primary care	Oral	2011	≥2018/II
LJM716	TBD	HER3 inhibitor	Solid tumors	Oncology	Intravenous	2012	≥2018/I
Lucentis	ranibizumab	Anti-VEGF monoclonal antibody fragment	Choroidal neovascularization and macular edema	Ophthalmology	Intravitreal injection	2013	2016/III
MEK162	binimetinib	MEK inhibitor	NRAS mutant melanoma	Oncology	Oral	2013	2015/III
			Solid tumors			2011	≥2018/II
			Low-grade serous ovarian cancer			2013	2016/III
MEK162 + LGX818	binimetinib and encorafenib	MEK inhibitor + RAF inhibitor	BRAF mutant melanoma	Oncology	Oral	2013	2016/III

NVA237 (*Seebri*)	glycopyrronium bromide	Long-acting muscarinic antagonist	Chronic obstructive pulmonary disease	Primary Care	Inhalation	2012	EU (approved) US (2014/III)
			Asthma	Primary Care		2013	2016/III
PKC412	midostaurin	Signal transduction inhibitor	Aggressive systemic mastocytosis	Oncology	Oral	2008	2015/II
			Acute myeloid leukemia			2008	2015/III
QAW039	TBD	Anti-inflammatory agent	Asthma	Primary Care	Oral	2010	≥2018/II
QAX576	TBD	Anti-IL-13 monoclonal antibody	Allergic diseases	Primary Care / Integrated Hospital Care	Subcutaneous injection	2013	≥2018/II
QGE031	TBD	High affinity anti-IgE monoclonal antibody	Allergic diseases	Primary Care	Subcutaneous injection	2012	≥ 2018/II
QVA149 (*Ultibro*)	indacaterol and glycopyrronium bromide	Long-acting beta$_2$-adrenergic agonist and long-acting muscarinic antagonist	Chronic obstructive pulmonary disease	Primary Care	Inhalation	EU: 2013 US: 2012	EU (approved) US (2014/III)

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Project/Product	Common name	Mechanism of action	Potential indication/ Disease area	Business franchise	Formulation/ Route of administration	Year Project Entered Current Development Phase	Planned filing dates/Current phase
RAD001 (*Afinitor/ Votubia)*	everolimus	mTOR inhibitor	HER2+ breast cancer, 1st line	Oncology	Tablet	2009	2014/III
			HER2+ breast cancer, 2nd/3rd line			2009	2014/III
			Tuberous sclerosis complex seizures			2013	2015/III
			Non-functioning GI and lung neuroendocrine tumors			2012	2015/III
			Diffuse large B-cell lymphoma			2009	2017/III
RLX030	serelaxin	Recombinant form of human relaxin-2 hormone	Acute heart failure	Critical Care	Intravenous infusion	EU: 2012 US: 2013	EU (registration) US (registration)
SOM230 (*Signifor LAR*)	pasireotide	Somatostatin analogue	Acromegaly	Oncology	Long-acting release: monthly intramuscular injection	2013	US/EU (registration)
			Cushing's disease			2011	2015/III
Tasigna	nilotinib	Signal transduction inhibitor	CML treatment-free remission	Oncology	Oral	2012	2016/II
Tekturna	aliskiren	Direct renin inhibitor	Reduction of CV death/hospitalizations in chronic heart failure	Critical Care	Tablet	2009	2016/III
TKI258	dovitinib lactate	VEGFR 1-3, FGFR 1-3, PDGFR and RTK angiogenesis inhibitor	Solid tumors	Oncology	Oral	2011	2017/II
Xolair	omalizumab	Anti-IgE monoclonal antibody	Chronic idiopathic urticaria/ Chronic spontaneous urticaria	Integrated Hospital Care	Subcutaneous injection	2013	US/EU (registration)

Key Compounds in Development (select products in Phases II, III and Registration)

ACZ885 (canakinumab) was approved in the EU in March 2013 for the treatment of acute attacks in gouty arthritis (GA) as *Ilaris*. In the US, ACZ885 was filed for the treatment of GA in February 2011, and received a Complete Response letter in

August 2011 with a request by the Agency for additional clinical data to evaluate the benefit risk profile in refractory patients. We continue to work with the FDA to determine the next steps for ACZ885 in this indication. In 2013 *Ilaris* was also approved for the treatment of systemic juvenile idiopathic arthritis in the US, EU and other countries. Phase II data of ACZ885 in TNF-receptor associated periodic syndrome and Familial Mediterranean Fever showed substantial symptom relief in these two rare periodic fever syndromes. ACZ885 is also being investigated in the pivotal Phase III CANTOS study to determine whether ACZ885 can reduce the risk of recurrent cardiovascular events (cardiovascular death, non-fatal myocardial infarction, non-fatal stroke) in post-myocardial infarction patients with elevated inflammatory burden versus placebo when administered quarterly in addition to standard of care.

AFQ056 (mavoglurant) is a metabotropic glutamate receptor 5 (mGluR5) antagonist in development for Fragile X syndrome. Phase IIb/III studies in adult and adolescent patients with Fragile X syndrome started in the fourth quarter of 2010 and the second quarter of 2011 respectively. Fragile X syndrome is the most frequent inherited form of mental retardation. AFQ056 aims to improve the associated behavioral symptoms.

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AIN457 (secukinumab) is a fully human IgG1 monoclonal antibody that selectively binds to and neutralizes interleukin 17A (IL-17A), a key pro-inflammatory cytokine. Proof of concept and Phase II studies in moderate-to-severe plaque psoriasis and arthritic conditions (psoriatic arthritis, ankylosing spondylitis and rheumatoid arthritis) have suggested that AIN457 may potentially provide a new mechanism of action for the successful treatment of immune-mediated diseases. Phase III results for AIN457 in moderate-to-severe plaque psoriasis were presented for the first time in October 2013. Results from the head-to-head Phase III FIXTURE study showed AIN457 was significantly superior to Enbrel® (etanercept), a current standard-of-care anti-TNF medication approved to treat moderate-to-severe plaque psoriasis. FIXTURE forms part of the robust AIN457 Phase III clinical trial program in moderate-to-severe plaque psoriasis that involved more than 3,300 patients in over 35 countries worldwide. Regulatory submissions for AIN457 in moderate-to-severe plaque psoriasis were completed for the US and EU in October 2013. Phase III results from two additional Phase III studies in moderate-to-severe plaque psoriasis are planned to be presented in 2014, and for arthritic conditions in 2014 and beyond.

BAF312 (siponimod) is an oral, second-generation sphingosine 1-phosphate receptor modulator in Phase III development for secondary progressive multiple sclerosis. BAF312 binds selectively to the sphingosine 1-phosphate receptor subtypes 1 and 5, distributes effectively to the brain and has a relatively fast washout. The results from the BOLD study, an adaptive dose-ranging Phase II study, were published in Lancet Neurology 2013. These results showed that compared to placebo, BAF312 reduced brain MRI lesions by up to 80% in relapsing-remitting multiple sclerosis and relapses were infrequent and significantly reduced. BAF312 entered Phase III development in secondary progressive multiple sclerosis in 2012.

BKM120 (buparlisib) is an oral selective pan-PI3k inhibitor. The PI3K/AKT/mTOR pathway is an important intracellular signaling network that regulates cellular metabolism, proliferation and survival. Abnormal activation of the PI3K/AKT/mTOR pathway has been identified as an important step in the initiation and maintenance of tumors and a key regulator of angiogenesis and upregulated metabolic activities in tumor cells. BKM120 has shown significant cell growth inhibition and induction of apoptosis in a variety of tumor cell lines as well as in animal models. BKM120 is currently being investigated in clinical trials in advanced solid tumors in combination with other agents, including two phase III trials in hormone receptor positive advanced breast cancer.

BYM338 (bimagrumab) is a novel, fully human monoclonal antibody under development to treat sporadic inclusion body myositis (sIBM). In August 2013, FDA granted Breakthrough Therapy designation to BYM338 for sIBM. A Phase II/III study of bimagrumab in patients with sIBM was initiated in September 2013. BYM338 binds with high affinity to type II activin receptors, preventing natural ligands, including myostatin and activin, from binding. BYM338 stimulates muscle growth by blocking signaling from these inhibitory molecules. In addition to sIBM, BYM338 is in clinical development for multiple pathological muscle loss and weakness and muscle-wasting conditions, including recovery from hip fracture. BYM338 was developed by Novartis, in collaboration with MorphoSys.

CTL019 is an investigational therapy that uses chimeric antigen receptors (CARs) to fight cancer. CARs are engineered proteins that transform a patient's own T cells into antigen-specific cells which seek out target proteins present on a patient's cancerous tumor. When these cells are re-introduced into the patient's blood, they demonstrate the potential to bind to the cancer cells and destroy them. CTL019 targets a protein called CD19 that is associated with a number of B-cell malignancies. On-going Phase I/II studies being conducted by the University of Pennsylvania are investigating the activity and safety of CTL019 in patients with resistant or refractory CD19+ hematologic malignancies, specifically pediatric and adult acute lymphoblastic leukemia and chronic lymphocytic leukemia.

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DEB025 (alisporivir) is an oral non-immunosuppressive cyclophilin inhibitor with potent antiviral activity. Cyclophilins are host proteins that are essential for hepatitis C virus (HCV) replication. Key attributes of alisporivir are pan-genotypic activity including unique potency against HCV Genotype 3, high barrier to resistance, in vitro synergy with several classes of Direct Acting Antivirals (DAAs), and activity against DAA-resistant variants. The program was put on partial clinical hold in 2012 due to a small number of cases of pancreatitis reported in clinical trial patients being treated with DEB025 in combination with peginterferon alpha (IFN) and ribavirin (RBV), including one fatal case. After addressing all questions from health authorities, the DEB025 clinical development has now resumed as an IFN-free program in the US and outside the US. In these Phase II clinical trials we are investigating treatment with DEB025 plus RBV alone and in combination with DAAs. These interferon-free regimens focus initially on patients with HCV Genotype 3, who are believed to have the greatest unmet medical need.

Gilenya (fingolimod) is a sphingosine 1-phosphate receptor modulator approved for the treatment for relapsing forms of MS. INFORMS, a Phase III study of *Gilenya* in primary progressive MS is ongoing and a submission for this indication to health authorities is anticipated in 2015. A Phase III study of *Gilenya* in patients with chronic inflammatory demyelinating polyradiculoneuropathy was initiated in 2012. Submissions to health authorities in this indication are anticipated to be made in 2016.

Jakavi (ruxolitinib) is an oral inhibitor of the JAK 1 and JAK 2 tyrosine kinases in development for use in patients with polycythemia vera. The pivotal Phase III RESPONSE study of ruxolitinib in patients with polycythemia vera who are resistant to or intolerant of hydroxyurea is fully enrolled. This trial is managed by Incyte in the US and by Novartis outside the US. Data are expected to be presented at medical congresses and filed with health authorities in 2014.

LBH589 (panobinostat) is a highly potent pan deacetylase inhibitor targeting the epigenetic regulation of multiple oncogenic pathways, with development focused on hematological diseases. The Phase III trial of LBH589, in combination with bortezomib and dexamethasone, met the primary endpoint of significantly extending progression-free survival in patients with relapsed or relapsed and refractory multiple myeloma when compared to bortezomib plus dexamethasone alone. We anticipate that full results will be presented and discussed with regulatory authorities worldwide in 2014.

LCQ908 (pradigastat) is a diacylglycerol acyltransferase-1 (DGAT-1) inhibitor. DGAT-1 catalyzes the final committed step in triglyceride synthesis and is believed to play a key role in whole body energy homeostasis. Inhibition of DGAT-1 represents a novel approach to treat metabolic disease and LCQ908 is currently in Phase III development for the treatment of an orphan disease called familial chylomicronemia syndrome.

LCZ696 is a first-in-class angiotensin receptor neprilysin inhibitor in development for the treatment of chronic heart failure and hypertension. LCZ696 simultaneously inhibits neprilysin and the renin angiotensin aldosterone system. One large, global Phase III study (PARADIGM-HF) is underway to assess the efficacy and safety of LCZ696 in chronic heart failure with reduced ejection fraction. PARADIGM-HF enrollment was completed in November 2012. Results from the Phase II PARAMOUNT study, which were reported in 2012, showed that LCZ696 is the first therapy to demonstrate efficacy based on biomarkers, and reduce left atrial size, in patients with heart failure with preserved ejection fraction. In 2012, LCZ696 entered Phase III development for the treatment of hypertension. All Phase III trials required for filing were completed in 2013, including the pivotal Phase III A1306 study designed to assess the efficacy and safety of LCZ696 versus the angiotensin receptor blocker olmesartan in patients with systolic hypertension. The completed Phase III trials demonstrated the efficacy and safety of LCZ696 in reducing blood pressure and will be submitted for peer review publication in 2014. In addition, we anticipate that the first worldwide filing for hypertension will be made in Japan in 2014.

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LDE225 (sonidegib) is a selective smoothened inhibitor in clinical development for various cancers. LDE225 binds to smoothened receptor inhibitors and prevents abnormal activation of the Hedgehog pathway, which is associated with uncontrolled cellular growth and proliferation. LDE225 is currently in development for advanced basal cell carcinoma and medulloblastoma and in multiple hematologic and solid tumor trials.

LDK378 (ceritinib) is a potent and highly selective oral anaplastic lymphoma kinase (ALK) inhibitor that is in development for anaplastic lymphoma kinase positive (ALK+) cancers. Early clinical studies of LDK378 showed a preliminary clinical response in ALK+ non-small lung cancer (NSCLC), including patients previously treated with crizotinib as well as crizotinib-naïve patients. In 2013, LDK378 received Breakthrough Therapy designation from the FDA for the treatment of patients with ALK+ metastatic NSCLC who had progressed during treatment with, or were intolerant to, crizotinib. In early 2014, we expect to file an application with the FDA for approval of LDK378 in this patient population based on the early clinical studies. A Phase III study in this population is also ongoing with an anticipated filing date of 2015. Additionally, Phase III studies to explore the role of LDK378 in patients who have not previously been treated with crizotinib are currently underway.

LEE011 is an orally bioavailable, highly selective small molecule inhibitor of cyclin dependent kinase (CDK) 4 and 6. LEE011 may be able to stop the proliferation of growth factors in tumors where the CDK4/6 pathway has been activated and unchecked cell proliferation has occurred. The compound is in a Phase III registration study in combination with letrozole in metastatic breast cancer. LEE011 is also in Phase I and II investigation, with a number of ongoing studies in adult and pediatric solid tumors.

Lucentis (ranibizumab) is an anti-VEGF monoclonal antibody fragment in Phase III development for the treatment of visual impairment due to choroidal neovascularization and macular edema secondary to conditions other than age-related macular degeneration, diabetic macular edema, retinal vein occlusion and pathologic myopia. Filings are expected in 2016.

NVA237 (glycopyrronium bromide) is an inhaled LAMA undergoing clinical trials in asthma. A regulatory filing in the US for a COPD indication is expected in the fourth quarter of 2014.

PKC412 (midostaurin) is an oral, multi-targeted, kinase inhibitor in Phase III development for treatment of patients with FLT-3 mutated acute myeloid leukemia (AML) and in Phase II development for aggressive systemic mastocytosis (ASM). Filings are expected for newly diagnosed, FLT3-mutated AML and for ASM by 2015.

QGE031 is an investigational humanized anti-Immunoglobulin E (IgE) monoclonal antibody in development for the treatment of IgE-driven allergic diseases. QGE031 is licensed worldwide to Novartis by Genentech/Roche. Phase II ascending dose studies investigating the pharmacokinetics, pharmacodynamics and tolerability of QGE031 administered intravenously and subcutaneously have been completed.

QVA149 (indacaterol/glycopyrronium bromide) is a fixed-dose combination of the inhaled LABA indacaterol and the LAMA glycopyrronium bromide. A regulatory filing for a COPD indication is expected in the US in the fourth quarter of 2014.

RAD001 (*Afinitor/Votubia*, everolimus) is an oral inhibitor of the mTOR pathway. Phase III studies are underway in patients with advanced breast cancer, lymphoma and non-functioning GI/Lung, NET. The EXIST-3 (EXamining everolimus In a Study of TSC) clinical trial is underway to examine the efficacy and safety of everolimus in patients with TSC who have refractory partial-onset seizures (uncontrollable seizures localized to a specific area of the brain). Also in 2013, results from the Phase III EVOLVE study showed that everolimus did not extend overall survival compared to placebo in patients with locally advanced or metastatic hepatocellular carcinoma after progression on or intolerance to sorafenib. No further studies are planned in this indication.

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RLX030 (serelaxin), the first in a new class of medicines, is a recombinant form of the human hormone relaxin-2, and is believed to act through multiple mechanisms on the heart, kidneys and blood vessels. Results from the Phase III RELAX-AHF study show that RLX030 improved symptoms and reduced mortality in patients with acute heart failure (AHF). Data from the study were presented at the American Heart Association congress in November 2012 and published simultaneously in *The Lancet* showing that RLX030 significantly reduced dyspnea (or shortness of breath), the most common symptom of AHF, which was the primary objective of the study based on pre-specified protocol criteria. In addition, RLX030 was associated with reductions in worsening of heart failure and all-cause mortality (a safety endpoint) and in deaths due to cardiovascular causes (an additional pre-specified exploratory endpoint) at the end of six months. Based on the findings of the RELAX-AHF study, we submitted to the EU in December 2012 and the US in May 2013. In June 2013, RLX030 received Breakthrough Therapy designation from the FDA for AHF. In September 2013, a second phase III study, RELAX-AHF-2, began enrolling patients. The goal of this study is to replicate the key findings of RELAX-AHF, and it will assess cardiovascular mortality as the primary endpoint. In January 2014, we announced that we would submit a revised filing package, including new data analyses, for re-examination for conditional approval of RLX030 in AHF by the CHMP following the issuance of a negative opinion on approval. We anticipate that a revised opinion could be granted in the second quarter of 2014.

SOM230 (*Signifor LAR,* pasireotide) is a somatostatin analogue in development as a long-acting release formulation for patients with acromegaly, a chronic hormonal disorder that occurs when excess growth hormone is produced. In the third quarter of 2013, the first interpretable results of the Phase III PAOLA study showed that a significantly greater proportion of patients with inadequately controlled acromegaly treated with the long-acting release form of SOM230 saw a reduction of two key hormone levels used to measure disease at 24 weeks versus continued treatment with the long acting release form of octreotide, or lanreotide Autogel, meeting the primary endpoint. Regulatory action is anticipated in 2014 based on submissions that will include the results of this study and the results of a pivotal study in acromegaly patients without prior medical therapy that was published earlier. A Phase III study of SOM230 is also underway in patients with Cushing's disease.

Tasigna (nilotinib) is a signal transduction inhibitor of the BCR-ABL tyrosine kinase. Novartis has initiated a global clinical trial program to evaluate the potential for PH+ CML patients to maintain deep molecular response after stopping nilotinib, including four company-sponsored studies and four investigator-initiated studies. This research is underway in more than 100 trial sites in 40 countries. In 2013, clinical data in metastatic melanoma with c-KIT mutation did not demonstrate clinical benefit when compared with the standard of care. No further studies are planned in this indication.

TKI258 (dovitinib) is a multi-targeted kinase inhibitor of FGFR, VEGFR and PDGFR. Results of a Phase III trial evaluating TKI258 in renal cell carcinoma showed the drug did not meet its primary endpoint of superior progression-free survival compared to sorafenib in patients with metastatic renal cell carcinoma after failure with prior therapies. The development of TKI258 continues with ongoing clinical studies for solid tumors.

Xolair (omalizumab) is a humanized monoclonal antibody approved for the treatment of persistent allergic asthma. Novartis and Genentech/Roche commenced development of omalizumab in a new indication, chronic spontaneous urticaria (CSU). CSU is also known as chronic idiopathic urticaria (CIU) in the US, and is a persistent, debilitating form of hives and chronic itch with limited approved treatment options. Phase III studies began in 2011 and results from the three pivotal registration studies involving nearly 1,000 patients were presented in 2013. Regulatory submissions for this indication were completed in the EU, US and Switzerland in the third quarter of 2013. In January 2014, the CHMP granted a positive opinion for the use of *Xolair* as an add-on therapy for CSU in adult and adolescent patients 12 years and older with inadequate response to H1 antihistamines. The opinion was based on positive results from the three pivotal registration studies.

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Projects Added To And Subtracted From The Development Table Since 2012

Project/Product	Potential indication/ Disease area	Change	Reason
ACZ885	Systemic juvenile idiopathic arthritis	Commercialized	Received marketing approval in EU and US
	Diabetes mellitus	Terminated	Phase II results suggest there is unlikely to be a clinical benefit
	Hereditary periodic fevers	Added	Entered confirmatory development
AFQ056	L-dopa induced dyskinesia in Parkinson's disease	Terminated	Clinical results did not show sufficient therapeutic benefit over standard of care
AIN457	Uveitis	Added	Entered confirmatory development
	Multiple sclerosis	Terminated	Discontinued development in multiple sclerosis
ATI355	Spinal cord injury	Removed from table	Project is in exploratory development
BAF312	Multiple sclerosis	Now disclosed as secondary progressive multiple sclerosis	
BEZ235	Solid tumors	Terminated	Discontinued development in oncology indications
BGJ398	Solid tumors	Added	Entered confirmatory development
BYM338	Hip fracture	Added	Entered confirmatory development
Exjade	Non-transfusion dependent thalassemia	Commercialized	Received marketing approval in EU and US

Gilenya	Primary progressive multiple sclerosis	Added	Specific indication for primary progressive multiple sclerosis defined in 2013

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Project/Product	Potential indication/ Disease area	Change	Reason
HSC835	Stem cell transplantation	Added	Entered confirmatory development
LCZ696	Chronic heart failure	Split indication	Indication now specified as chronic heart failure with reduced ejection fraction and chronic heart failure with preserved ejection fraction
LDE225	Medulloblastoma	Added	Entered confirmatory development
LDK378	Non-small cell lung cancer	Now disclosed as ALK+ advanced non-small cell lung cancer (post chemotherapy and post crizotinib) and ALK+ advanced non-small cell lung cancer (chemotherapy naïve, crizotinib naïve)	
LGX818	Melanoma	Now disclosed as BRAF mutant melanoma	
	Solid tumors	Added	Entered confirmatory development
LEE011	Breast cancer	Added	Entered confirmatory development
	Solid tumors	Added	Entered confirmatory development
LJM716	Solid tumors	Added	Entered confirmatory development
Lucentis	Choroidal neovascularization secondary to pathological myopia	Commercialized	Received marketing approval in EU

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Project/Product	Potential indication/ Disease area	Change	Reason
MEK162	Melanoma	Now disclosed as NRAS mutant melanoma	
	Solid tumors	Added	Entered confirmatory development
	Low-grade serous ovarian cancer	Added	Entered confirmatory development
MEK162 + LGX818	BRAF mutant melanoma	Added	Entered confirmatory development
NVA237 (*Seebri*)	Asthma	Added	Entered confirmatory development
QAX576	Allergic diseases	Added	Entered confirmatory development
QMF149	Chronic obstructive pulmonary disease	Terminated	Discontinued for business reasons
	Asthma	Terminated	Discontinued for business reasons
RAD001 (*Afinitor/Votubia*)	Breast cancer HER2-over-expressing, 1st line	Now disclosed as HER2+ breast cancer, 1st line	
	Breast cancer HER2-over-expressing 2nd/3rd line	Now disclosed as HER2+ breast cancer, 2nd/3rd line	
	Hepatocellular carcinoma	Terminated	Did not meet endpoint
	Tuberous sclerosis complex seizures	Added	Entered confirmatory development
Tasigna	Metastatic melanoma with c-KIT mutation	Terminated	Did not demonstrate clinical benefit against standard of care
	CML treatment-free remission	Added	Entered confirmatory studies
TKI258	Renal cell carcinoma	Terminated	Trial did not meet primary endpoint

TOBI Podhaler	*Pseudomonas aeruginosa* infection in cystic fibrosis patients	Commercialized	Received marketing approval in EU and US

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Project/Product	Potential indication/ Disease area	Change	Reason
Zortress/Certican	Prevention of organ rejection liver	Commercialized	Received marketing approval in EU and US

Principal Markets

The Pharmaceuticals Division sells products in approximately 155 countries worldwide, but net sales are generally concentrated in the US, Europe and Japan, which together accounted for 76% of the division's 2013 net sales. At the same time, sales from expanding "emerging growth markets" have become increasingly important to us. See "Item 5. Operating and Financial Review and Prospects 5.A Operating Results Factors Affecting Results of Operations Fundamental Drivers Remain Strong Growth of Emerging Markets." The following table sets forth the aggregate 2013 net sales of the Pharmaceuticals Division by region:

Pharmaceuticals	**2013 Net sales to third parties**	
	$ millions	**%**
United States	10,256	32
Americas (except the United States)	3,018	9
Europe	10,993	34
Rest of the World	7,947	25
Total	**32,214**	**100**

	$ millions	**%**
Established Markets*	24,493	76
Emerging Growth Markets*	7,721	24
Total	**32,214**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Many of our Pharmaceuticals Division's products are used for chronic conditions that require patients to consume the product over long periods of time, ranging from months to years. Net sales of the vast majority of our products are not subject to material changes in seasonal demand.

Production

The primary goal of our manufacturing and supply chain management program is to ensure the uninterrupted, timely and cost-effective supply of products that meet all product specifications. We manufacture our products at five bulk chemical and 15 pharmaceutical production facilities as well as three biotechnology sites. Bulk chemical production involves the manufacture of therapeutically active compounds, mainly by chemical synthesis or by biological processes such as fermentation. Pharmaceutical production involves the manufacture of "galenical" forms of pharmaceutical products such as tablets, capsules, liquids, ampoules, vials and creams. Major bulk chemical sites are located in Schweizerhalle, Switzerland; Grimsby, UK; Ringaskiddy, Ireland and Changshu, China. Significant pharmaceutical

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production facilities are located in Stein, Switzerland; Wehr, Germany; Singapore; Torre, Italy; Barbera, Spain; Suffern, New York; Sasayama, Japan and in various other locations. We have biotechnology plants located in Huningue, France; Basel, Switzerland and Vacaville, California. A fourth biotechnology plant is under development in Morris Plains, New Jersey to manufacture personalized medicine. In January 2014, we announced the closing of the production facility located in Suffern, New York.

During clinical trials, which can last several years, the manufacturing process for a particular product is rationalized and refined. By the time clinical trials are completed and products are launched, the manufacturing processes have been extensively tested and are considered stable. However, improvements to these manufacturing processes may continue over time.

Raw materials for the manufacturing process are either produced in-house or purchased from a number of third party suppliers. Where possible, our policy is to maintain multiple supply sources so that the business is not dependent on a single or limited number of suppliers. However, our ability to do so may at times be limited by regulatory or other requirements. We monitor market developments that could have an adverse effect on the supply of essential materials. Our suppliers of raw materials are required to comply with Novartis quality standards.

The manufacture of our products is complex and heavily regulated by governmental health authorities, which means that supply is never guaranteed. If we or our third party suppliers fail to comply with applicable regulations then there could be a product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of such events or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues when they arise.

Marketing and Sales

The Pharmaceuticals Division serves customers with 2,439 field force representatives in the US, and an additional 21,129 in the rest of the world, as of December 31, 2013, including supervisors and administrative personnel. These trained representatives, where permitted by law, present the therapeutic risks and benefits of our products to physicians, pharmacists, hospitals, insurance groups and managed care organizations. We are seeing the increasing influence of customer groups beyond the prescribers, and Novartis is responding by adapting our business practices.

Although specific distribution patterns vary by country, Novartis generally sells its prescription drugs primarily to wholesale and retail drug distributors, hospitals, clinics, government agencies and managed healthcare providers.

In the US, certain products can be advertised by way of television, newspaper and magazine advertising. Novartis also pursues co-promotion/co-marketing opportunities as well as licensing and distribution agreements with other companies when legally permitted and economically attractive.

The marketplace for healthcare is evolving with the consumer becoming a more informed stakeholder in their healthcare decisions and looking for solutions to meet their changing needs. Where permitted by law, Novartis is seeking to tap into the power of the patient, delivering innovative solutions to drive loyalty and engagement.

Competition

The global pharmaceutical market is highly competitive, and we compete against other major international corporations which sell patented prescription pharmaceutical products, and which have substantial financial and other resources. Competition within the industry is intense and extends across a wide range of commercial activities, including pricing, product characteristics, customer service, sales and marketing, and research and development.

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In addition, as is the case with other pharmaceutical companies selling patented pharmaceuticals, Novartis faces ever-increasing challenges from companies selling products which compete with our products, including competing patented products and generic forms of our products following the expiry of patent protection. Generic companies may also gain entry to the market through successfully challenging our patents, but we vigorously use legally permissible measures to defend our patent rights. We also face competition from over-the-counter (OTC) products that do not require a prescription from a physician. See also " Regulation Price Controls", below.

Research and Development

We are a leader in the pharmaceuticals industry in terms of research and development, including the level of our investment. Our Pharmaceuticals Division invested the following in research and development over the last three years:

	2013		2012		2011	
	$ millions	Core R&D[1] $ millions	$ millions	Core R&D[1] $ millions	$ millions	Core R&D[1] $ millions
Research and Exploratory Development	2,664	2,611	2,584	2,530	2,676	2,625
Confirmatory Development	4,578	4,550	4,334	4,167	4,556	4,235
Total	**7,242**	**7,161**	**6,918**	**6,697**	**7,232**	**6,860**

(1) Core excludes impairments, amortization and certain exceptional items

Our Pharmaceuticals Division expensed $7.2 billion (on a core basis $7.2 billion) in research and development in 2013. This represented 22% (on a core basis 22%) of the division's total net sales.

Research and Exploratory Development expenditure was $2.7 billion in 2013, practically unchanged from the Research and Exploratory Development expenditure of $2.6 billion in 2012 and the 2011 amount of $2.7 billion.

Confirmatory Development expenditures in 2013 increased by 6% to $4.6 billion as compared against 2012. This included $29 million in impairments of intangible assets in 2013 (2012: $0.1 billion). On a core basis, Confirmatory Development expenditures increased to $4.6 billion in 2013 and represented 14% of our Pharmaceuticals Division's net sales.

Confirmatory Development expenditures in 2012 decreased by 5% to $4.3 billion as compared against 2011. This included $0.1 billion in impairments of intangible assets in 2012 (2011: $0.3 billion). On a core basis, Confirmatory Development expenditure in 2012 remained essentially unchanged against 2011, at $4.2 billion, and represented 13% of Pharmaceuticals Division net sales as in the prior year.

The discovery and development of a new drug is a lengthy process, usually requiring approximately 10 to 15 years from the initial research to bringing a drug to market, including approximately six to eight years from Phase I clinical trials to market entry. At each of these steps, there is a substantial risk that a compound will not meet the requirements to progress further. In such an event, we may be required to abandon a compound in which we have made a substantial investment.

We manage our research and development expenditures across our entire portfolio in accordance with our strategic priorities. We make decisions about whether or not to proceed with development projects on a project-by-project basis. These decisions are based on the project's potential to meet a

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significant unmet medical need or to improve patient outcomes, the strength of the science underlying the project, and the potential of the project (subject to the risks inherent in pharmaceutical development) to generate significant positive financial results for the Company. Once a management decision has been made to proceed with the development of a particular molecule, the level of research and development investment required will be driven by many factors, including the medical indications for which it is being developed, the number of indications being pursued, whether the molecule is of a chemical or biological nature, the stage of development, and the level of evidence necessary to demonstrate clinical efficacy and safety.

Research program

Our Research program is responsible for the discovery of new medicines. The principal goal of our research program is to discover new medicines for diseases with unmet medical need. To do this we focus our work in areas where we have sufficient scientific understanding and believe we have the potential to change the practice of medicine. This requires the hiring and retention of the best talent, a focus on fundamental disease mechanisms that are relevant across different disease areas, continuous improvement in technologies for drug discovery and potential therapies, close alliance with clinical colleagues, and the establishment of appropriate external complementary alliances.

All drug candidates are taken to the clinic via "proof-of-concept" trials to enable rapid testing of the fundamental efficacy of the drug while collecting basic information on pharmacokinetics, safety and tolerability, and adhering to the guidance for early clinical testing set forth by health authorities.

In 2003, we established the Novartis Institutes for BioMedical Research (NIBR). At NIBR's headquarters in Cambridge, Massachusetts, more than 1,600 scientists and associates conduct research into disease areas such as cardiovascular and metabolism disease, neurodegenerative diseases, oncology, muscle disorders and ophthalmology. An additional 5,000 scientists and technology experts conduct research in Switzerland, UK, Italy, Singapore, China and three other US sites. Research is conducted at these sites in the areas of neuroscience, autoimmune disease, oncology, cardiovascular disease, gastrointestinal disease and respiratory disease. Research platforms such as the Center for Proteomic Chemistry are headquartered in the NIBR site in Basel, Switzerland. In addition, The Novartis Institute for Tropical Diseases, Novartis Vaccines for Global Health, the Friedrich Miescher Institute, and the Genomics Institute of the Novartis Research Foundation, focus on basic genetic and genomic research as well as research into diseases of the developing world such as malaria, dengue and typhoid fever.

In August 2012, Novartis and the University of Pennsylvania (Penn) announced an exclusive global research and development collaboration to develop and commercialize targeted chimeric antigen receptor (CAR) immunotherapies for the treatment of cancers. The research component of this collaboration focuses on accelerating the discovery and development of additional therapies using CAR immunotherapy. In addition, NIBR and Penn will build the Center for Advanced Cellular Therapies at Penn (CACT) on the Penn campus in Philadelphia. The CACT is planned to be a first of its kind research and development center established specifically to develop and manufacture adoptive T cell immunotherapies under the research collaboration guided by scientists and clinicians from NIBR and Penn. Construction of the CACT is expected to be completed in 2015.

In April 2013, we announced that ophthalmic pharmaceuticals research would be consolidated in Cambridge, Massachusetts. Previously this research was conducted at two sites on the Alcon campus in Fort Worth, Texas, and in Cambridge, Massachusetts. This consolidation is part of our ongoing effort to co-locate teams and pursue new scientific directions.

In August 2013, we announced that we will build a neuroscience research team in Cambridge. This new group will focus on using stem cell models, human genetics, and other fields to discover new medicines for psychiatric and neurodegenerative diseases.

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In November 2013, we took action to co-locate scientific resources in order to improve the efficiency and effectiveness of our global research organization. We announced that we will establish a respiratory research group at our site in Cambridge, Massachusetts, and a proposal to close the Horsham, UK research site, as well as a plan to exit research in topical applications for dermatology and exit from the Vienna, Austria research site. These proposals are subject to consultation with local works councils in the UK and Austria. In addition we announced the consolidation of US-based oncology research from Emeryville, California to Cambridge, Massachusetts and the closing of the biotherapeutics development unit in La Jolla, California. If the proposals in the UK and Austria are confirmed, approximately 500 associates will be impacted globally. The final number is subject to employee consultation processes in the UK and Austria. One hundred seventy-five new positions will be opened in Cambridge to support oncology research and the new respiratory research group. The net impact of these and other changes is therefore expected to be approximately 325 positions.

Development program

The focus of our Development program is to determine the safety and efficacy of a potential new medicine in humans. As previously described (see " Compounds in Development"), we view the development process as generally consisting of an Exploratory phase where "proof of concept" is established, and a Confirmatory phase where this concept is confirmed in large numbers of patients.

Within this paradigm, clinical trials of drug candidates generally proceed through the traditional three phases: I, II and III. In Phase I clinical trials, a drug is usually tested with about 5 to 15 patients. The tests study the drug's safety profile, including the safe dosage range. The studies also determine how a drug is absorbed, distributed, metabolized and excreted, and the duration of its action. In Phase II clinical trials, the drug is tested in controlled studies of approximately 100 to 300 volunteer patients to assess the drug's efficacy and safety, and to establish the appropriate therapeutic dose. In Phase III clinical trials, the drug is further tested in larger numbers of volunteer patients in clinics and hospitals. In each of these phases, physicians monitor volunteer patients closely to assess the potential new drug's safety and efficacy. The vast amount of data that must be collected and evaluated makes clinical testing the most time-consuming and expensive part of new drug development. The next stage in the drug development process is to seek registration for the new drug. See " Regulation."

At each of these phases of clinical development, our activities are managed by our Innovation Management Board (IMB). The IMB is responsible for oversight over all major aspects of our development portfolio. In particular, the IMB is responsible for the endorsement of proposals to commence the first clinical trials of a development compound, and of major project phase transitions and milestones following a positive proof of concept outcome, including transitions to full development and the decision to submit a regulatory application to the health authorities. The IMB is also responsible for project discontinuations, for the endorsement of overall development strategy and the endorsement of development project priorities. The IMB is chaired by the Head of Development of our Pharmaceuticals Division and has representatives from Novartis senior management, as well as experts from a variety of fields among its core members and extended membership.

Genoptix Medical Laboratory

Genoptix Medical Laboratory is a part of our Pharmaceuticals Division and provides comprehensive diagnostic laboratory services to community-based hematologists and oncologists, and to hospitals throughout the US. Genoptix focuses its testing primarily on cancers of the blood and bone marrow, such as leukemia, as well as other solid tumor cancers.

Recent advances in biology and bioinformatics have led to a much deeper understanding of the genetic underpinnings of disease and drug targets, and Genoptix is working to make use of these scientific advances. Using cutting-edge technologies such as Next Generation Sequencing, Genoptix has developed a robust and expanding portfolio of molecular diagnostic programs that complement our pharmaceutical

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products. It is our goal to bring a number of new products to the market over the next few years, focusing on the combination of diagnostics and pharmaceuticals.

In addition, as the number of our compounds in development increases, streamlined and centralized management of our assays is vital to the success of our development activities. As a result, we have expanded our Clinical Trial Assay (CTA) capabilities through the creation of the CTA Center of Excellence within Genoptix. This expansion seeks to take advantage of the existing internal capability of Genoptix, and to expand the business potential of Genoptix as an end-to-end solution for the management of CTAs across programs. In addition, we have formed a new sales team within Genoptix which focuses its efforts on selling molecular tests for monitoring treatment of patients with chronic myeloid leukemia.

Alliances and acquisitions

Our Pharmaceuticals Division enters into business development agreements with other pharmaceutical and biotechnology companies and with academic institutions in order to develop new products and access new markets. We license products that complement our current product line and are appropriate to our business strategy. Therapeutic area strategies have been established to focus on alliances and acquisition activities for key disease areas/indications that are expected to be growth drivers in the future. We review products and compounds we are considering licensing using the same criteria as we use for our own internally discovered drugs.

Regulation

The international pharmaceutical industry is highly regulated. Regulatory authorities around the world administer numerous laws and regulations regarding the testing, approval, manufacturing, importing, labeling and marketing of drugs, and also review the safety and efficacy of pharmaceutical products. In particular, extensive controls exist on the non-clinical and clinical development of pharmaceutical products. These regulatory requirements, and the implementation of them by local health authorities around the globe, are a major factor in determining whether a substance can be developed into a marketable product, and the amount of time and expense associated with that development.

Health authorities, including those in the US, EU, Switzerland and Japan, have high standards of technical evaluation. The introduction of new pharmaceutical products generally entails a lengthy approval process. Of particular importance is the requirement in all major countries that products be authorized or registered prior to marketing, and that such authorization or registration be subsequently maintained. In recent years, the registration process has required increased testing and documentation for clearance of new drugs, with a corresponding increase in the expense of product introduction.

To register a pharmaceutical product, a registration dossier containing evidence establishing the quality, safety and efficacy of the product must be submitted to regulatory authorities. Generally, a therapeutic product must be registered in each country in which it will be sold. In every country, the submission of an application to a regulatory authority does not guarantee that approval to market the product will be granted. Although the criteria for the registration of therapeutic drugs are similar in most countries, the formal structure of the necessary registration documents and the specific requirements, including risk tolerance, of the local health authorities varies significantly from country to country. It is possible that a drug can be registered and marketed in one country while the registration authority in another country may, prior to registration, request additional information from the pharmaceutical company or even reject the product. It is also possible that a drug may be approved for different indications in different countries.

The registration process generally takes between six months and several years, depending on the country, the quality of the data submitted, the efficiency of the registration authority's procedures and the nature of the product. Many countries provide for accelerated processing of registration applications for

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innovative products of particular therapeutic interest. In recent years, intensive efforts have been made among the US, the EU and Japan to harmonize registration requirements in order to achieve shorter development and registration times for medical products. However, the requirement in many countries to negotiate selling prices or reimbursement levels with government regulators can substantially extend the time until a product may finally be launched to the market.

The following provides a summary of the regulatory processes in the principal markets served by Pharmaceuticals Division affiliates:

United States

In the US, applications for drug registration are submitted to and reviewed by the FDA. The FDA regulates the testing, manufacturing, labeling and approval for marketing of pharmaceutical products intended for commercialization in the US. The FDA continues to monitor the safety of pharmaceutical products after they have been approved for marketing in the US market. The pharmaceutical development and registration process is typically intensive, lengthy and rigorous. When a pharmaceutical company has gathered data which it believes sufficiently demonstrates a drug's quality, safety and efficacy, then the company may file a New Drug Application (NDA) or biologics license application (BLA), as applicable, for the drug. The NDA or BLA must contain all the scientific information that has been gathered about the drug and typically includes information regarding the clinical experiences of patients tested in the drug's clinical trials. A Supplemental New Drug Application (sNDA) or BLA amendment must be filed for new indications for a previously approved drug.

Once an NDA or BLA is submitted, the FDA assigns reviewers from its staff in biopharmaceutics, chemistry, clinical microbiology, pharmacology/toxicology, and statistics staff. After a complete review, these content experts then provide written evaluations of the NDA or BLA. These recommendations are consolidated and are used by the Senior FDA staff in its final evaluation of the NDA/BLA. Based on that final evaluation, FDA then provides to the NDA or BLA's sponsor an approval, or a "complete response" letter if the NDA or BLA application is not approved. If not approved, the letter will state the specific deficiencies in the NDA or BLA which need to be addressed. The sponsor must then submit an adequate response to the deficiencies in order to restart the review procedure.

Once the FDA has approved an NDA, BLA, sNDA or BLA amendment, the company can make the new drug available for physicians to prescribe. The drug owner must submit periodic reports to the FDA, including any cases of adverse reactions. For some medications, the FDA requires additional post-approval studies (Phase IV) to evaluate long-term effects or to gather information on the use of the product under special conditions.

Throughout the life cycle of a product, the FDA also requires compliance with standards relating to good laboratory, clinical, manufacturing and promotional practices.

European Union

In the EU, there are three main procedures for application for authorization to market pharmaceutical products in the EU Member States, the Centralized Procedure, the Mutual Recognition Procedure and the Decentralized Procedure. It is also possible to obtain a national authorization for products intended for commercialization in a single EU member state only, or for additional indications for licensed products.

Under the Centralized Procedure, applications are made to the EMA for an authorization which is valid for the European Community. The Centralized Procedure is mandatory for all biotechnology products and for new chemical entities in cancer, neurodegenerative disorders, diabetes and AIDS, autoimmune diseases or other immune dysfunctions and optional for other new chemical entities or innovative medicinal products or in the interest of public health. When a pharmaceutical company has gathered data which it believes sufficiently demonstrates a drug's quality, safety and efficacy, then the

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company may submit an application to the EMA. The EMA then receives and validates the application, and appoints a Rapporteur and Co-Rapporteur to review it. The entire review cycle must be completed within 210 days, although there is a "clock stop" at day 120, to allow the company to respond to questions set forth in the Rapporteur and Co-Rapporteur's Assessment Report. When the company's complete response is received by the EMA, the clock restarts on day 121. If there are further aspects of the dossier requiring clarification, the EMA will then request an Oral Explanation on day 180, in which the sponsor must appear before the CHMP to provide the requested additional information. On day 210, the CHMP will then take a vote to recommend the approval or non-approval of the application. The final decision under this Centralized Procedure is an EU Community decision which is applicable to all Member States. This decision occurs on average 60 days after a positive CHMP recommendation.

Under the Mutual Recognition Procedure (MRP), the company first obtains a marketing authorization from a single EU member state, called the Reference Member State (RMS). In the Decentralized Procedure (DCP) the application is done simultaneously in selected or all Member States if a medicinal product has not yet been authorized in a Member State. During the DCP, the RMS drafts an Assessment Report within 120 days. Within an additional 90 days the Concerned Member States (CMS) review the application and can issue objections or requests for additional information. On Day 90, each CMS must be assured that the product is safe and effective, and that it will cause no risks to the public health. Once an agreement has been reached, each Member State grants national marketing authorizations for the product.

After the Marketing Authorizations have been granted, the company must submit periodic safety reports to the EMA (if approval was granted under the Centralized Procedure) or to the National Health Authorities (if approval was granted under the DCP or the MRP). In addition, several pharmacovigilance measures must be implemented and monitored including Adverse Event collection, evaluation and expedited reporting and implementation as well as up-date of Risk Management Plans.

European Marketing Authorizations have an initial duration of five years. After this time, the Marketing Authorization may be renewed by the competent authority on the basis of re-evaluation of the risk/benefit balance. Once renewed the Marketing Authorization is valid for an unlimited period. Any Marketing Authorization which is not followed within three years of its granting by the actual placing on the market of the corresponding medicinal product ceases to be valid.

Japan

In Japan, applications for new products are made through the Pharmaceutical and Medical Devices Agency (PMDA). Once an NDA is submitted, a review team is formed consisting of specialized officials of the PMDA, including chemistry/manufacturing, non-clinical, clinical and biostatistics. While a team evaluation is carried out, a data reliability survey and Good Clinical Practice/Good Laboratory Practice/Good Manufacturing Practice inspection are carried out by the Office of Conformity Audit and Office of GMP/GQP Inspection of the PMDA. Team evaluation results are passed to the PMDA's external experts who then report back to the PMDA. After a further team evaluation, a report is provided to the Ministry of Health, Labor and Welfare (MHLW), which makes a final determination for approval and refers this to the Council on Drugs and Foods Sanitation which then advises the MHLW on final approvability. Marketing and distribution approvals require a review to determine whether or not the product in the application is suitable as a drug to be manufactured and distributed by a person who has obtained a manufacturing and distribution business license for the type of drug concerned and confirmation that the product has been manufactured in a plant compliant with Good Manufacturing Practices.

Once the MHLW has approved the application, the company can make the new drug available for physicians to prescribe. After that, the MHLW lists its national health insurance price within 60 days (or 90 days) from the approval, and physicians can obtain reimbursement. For some medications, the MHLW requires additional post-approval studies (Phase IV) to evaluate safety, effects and/or to gather information on the use of the product under special conditions. The MHLW also requires the drug's

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sponsor to submit periodic safety update reports. Within three months from the specified re-examination period, which is designated at the time of the approval of the application for the new product, the company must submit a re-examination application to enable the drug's safety and efficacy to be reassessed against approved labeling by the PMDA.

Price Controls

In most of the markets where we operate, the prices of pharmaceutical products are subject to both direct and indirect price controls and to drug reimbursement programs with varying price control mechanisms. Due to increasing political pressure and governmental budget constraints, we expect these mechanisms to continue to remain robust and to perhaps even be strengthened and to have a negative influence on the prices we are able to charge for our products.

Direct efforts to control prices.

United States. In the US, as a result of the Patient Protection and Affordable Care Act (ACA) and the recurring focus on deficit reduction, there is a significant risk of continued actions to control prices. Specifically, one proposal that has been repeatedly advanced would impose a government-mandated pricing formula on both patented and generic medications provided through the Medicare prescription drug benefit (Medicare Part D). In addition, the ACA mandated the creation of a new entity, the Independent Payment Advisory Board, which has been granted unprecedented authority to implement broad actions to reduce future costs of the Medicare program. This could include required prescription drug discounts or rebates, which could limit net prices for our products. There is a risk that government officials will continue to search for ways to reduce or control prices.

Europe. In Europe, our operations are subject to significant price and marketing regulations. Many governments are introducing healthcare reforms in a further attempt to curb increasing healthcare costs. In the EU, governments influence the price of pharmaceutical products through their control of national healthcare systems that fund a large part of the cost of such products to consumers. The downward pressure on healthcare costs in general in the EU, particularly with regard to prescription drugs, has become very intense. Increasingly high barriers are being erected against the entry of new products, and payors are limiting access to innovative medicines based on cost-benefit analyses. In addition, prices for marketed products are referenced within Member States and across Member State borders, including new EU Member States.

Japan. In Japan, the government generally introduces price cuts every other year, and the government additionally mandates price decreases for specific products. In 2013, the National Health Insurance price calculation method for new products and the price revision rule for existing products are being reviewed, and the resulting new drug tariffs will be effective beginning April 2014. The Japanese government is currently undertaking a healthcare reform initiative with a goal of sustaining the universal coverage of the National Health Insurance program, and is addressing the efficient use of drugs, including promotion of generic use. Meanwhile, the government tentatively initiated a premium system which basically maintains the price of patented drugs for unmet medical needs in order to promote innovative new drug creation and the solution of the unapproved indication issue. The continuance of this system will be reviewed as a part of price reforms in 2014.

Rest of World. Many other countries around the world are also taking steps to rein in prescription drug prices. As an example, China, one of our most important emerging growth markets, has ordered price cuts on drugs four times since 2011, including 2013 price cuts of up to 20%.

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Regulations favoring generics. In response to rising healthcare costs, many governments and private medical care providers, such as Health Maintenance Organizations, have instituted reimbursement schemes that favor the substitution of generic pharmaceuticals for more expensive brand-name pharmaceuticals. In the US, generic substitution statutes have been enacted by virtually all states and permit or require the dispensing pharmacist to substitute a less expensive generic drug instead of an original patented drug. Other countries have similar laws, including numerous European countries. We expect that the pressure for generic substitution will continue to increase.

Cross-Border Sales. Price controls in one country can also have an impact in other countries as a result of cross-border sales. In the EU, products which we have sold to customers in countries with stringent price controls can in some instances legally be re-sold to customers in other EU countries with less stringent price controls at a lower price than the price at which the product is otherwise available in the importing country. In North America, products which we have sold to customers in Canada, which has relatively stringent price controls, are sometimes re-sold into the US, again at a lower price than the price at which the product is otherwise sold in the US. Such imports from Canada and other countries into the US are currently illegal.

We expect that pressures on pricing will continue worldwide, and may increase. Because of these pressures, there can be no certainty that, in every instance, we will be able to charge prices for a product that, in a particular country or in the aggregate, enable us to earn an adequate return on our investment in that product.

Intellectual Property

We attach great importance to patents, trademarks, copyrights and know-how, including research data, in order to protect our investment in research and development, manufacturing and marketing. It is our policy to seek the broadest protection available under applicable laws for significant product developments in all major markets. Among other things, patents may cover the products themselves, including the product's active ingredient and its formulation. Patents may cover processes for manufacturing a product, including processes for manufacturing intermediate substances used in the manufacture of the products. Patents may also cover particular uses of a product, such as its use to treat a particular disease, or its dosage regimen. In addition, patents may cover assays or tests for certain diseases or biomarkers, which will improve patient outcomes when administered certain drugs, as well as assays, research tools and other techniques used to identify new drugs. The protection offered by such patents extends for varying periods depending on the grant and duration of patents in the various countries or region. The protection afforded, which may vary from country to country, depends upon the type of patent and its scope of coverage.

In addition to patent protection, various countries offer data or marketing exclusivities for a prescribed period of time. Data exclusivity may be available which would preclude a potential competitor from filing a regulatory application for a set period of time that relies on the sponsor's clinical trial data, or the regulatory authority from approving the application. The data exclusivity period can vary depending upon the type of data included in the sponsor's application. When it is available, market exclusivity, unlike data exclusivity, precludes a competitor from obtaining marketing approval for a product even if a competitor's application relies on its own data.

United States

Patents. In the US, a patent issued for an application filed today will receive a term of 20 years from the application filing date, subject to potential adjustments for Patent Office delay. A US pharmaceutical patent which claims a product, method of treatment using a product, or method of manufacturing a product, may be eligible for an extension of the patent term based on the time the FDA took to approve the product. This type of extension may only extend the patent term for a maximum of 5 years, and may

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not extend the patent term beyond 14 years from regulatory approval. Only one patent may be extended for any product based on FDA delay.

In practice, however, it is not uncommon for significantly more than the 5 year maximum patent extension period to pass between the time that a patent application is filed for a product and the time that the product is approved by the FDA. As a result, it is rarely the case that, at the time a product is approved by FDA, it will have the full 20 years of remaining patent life. Rather, in our experience, it is not uncommon that, at the date of approval, a product will have from 13 to 16 years of patent life remaining, including all extensions available at that time.

Data and Market Exclusivity. In addition to patent exclusivities, the FDA may provide data or market exclusivity for a new chemical entity or an "orphan drug," each of which run in parallel to any patent protection. Data exclusivity prevents a potential generic competitor from relying on clinical trial data which were generated by the sponsor when establishing the safety and efficacy of its competing product. Market exclusivity prohibits any marketing of the same drug for the same indication.

A new small-molecule active pharmaceutical ingredient shall have 5 years of data exclusivity, during which time a competitor generally may not submit an application to the FDA based on a sponsor's clinical data.

Orphan drug exclusivity provides 7 years of market exclusivity for drugs designated by the FDA as "orphan drugs," meaning drugs that treat rare diseases, as designated by the FDA. During this period, a potential competitor may not market the same drug for the same indication even if the competitor's application does not rely on data from the sponsor.

A new biologic active pharmaceutical ingredient shall have 12 years of market exclusivity, during which time a competitor may not market the same drug for the same indication.

The FDA may also request that a sponsor conduct pediatric studies, and in exchange will grant an additional 6-month period of market exclusivity, if the FDA accepts the data, the sponsor makes a timely application for approval for pediatric treatment, and the sponsor has either a patent-based or regulatory-based exclusivity period for the product which can be extended.

European Community

Patents. Patent applications in Europe may be filed in the European Patent Office (EPO) or in a particular country in Europe. The EPO system permits a single application to be granted for the whole of the EU, plus other non-EU countries, such as Switzerland and Turkey. A patent granted by the EPO or a European country office will expire no later than 21 years from the earliest patent application on which the patent is based. Pharmaceutical patents can also be granted a further period of exclusivity under the Supplementary Protection Certificate (SPC) system. SPCs are designed to compensate the owner of the patent for the time it took to receive marketing authorization by the European Health Authorities. An SPC may be granted to provide, in combination with the patent, up to 15 years of exclusivity from the date of the first European marketing authorization. But the SPC cannot last longer than 5 years. The SPC duration can additionally be extended by a further 6 months if the product is the subject of an agreed pediatric investigation plan. The post-grant phase of patents, including the SPC system, is currently administered on a country-by-country basis under national laws which, while differing, are intended to, but do not always, have the same effect.

As in the US, in practice, it is not uncommon for the granting of an SPC to not fully compensate the owner of a patent for the time it took to receive marketing authorization by the European health authorities. Rather, since it can often take from 5 to 10 years to obtain a granted patent in Europe after the filing of the application, and since it can commonly take longer than this to obtain a marketing authorization for a pharmaceutical product in Europe, it is not uncommon that a pharmaceutical product,

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at the date of approval, will have a patent lifetime of 10 to 15 years, including all extensions available at that time.

Data and Market Exclusivity. In addition to patent exclusivity, the EU also provides a system of regulatory data exclusivity for authorized human medicines, which runs in parallel to any patent protection. The system for drugs being approved today is usually referred to as "8+2+1" because it provides: an initial period of 8 years of data exclusivity, during which a competitor cannot rely on the relevant data; a further period of 2 years of market exclusivity, during which the data can be used to support applications for marketing authorization, but the competitive product cannot be launched; and a possible 1 year extension of the market exclusivity period if, during the initial 8-year data exclusivity period, the sponsor registered a new therapeutic indication with "significant clinical benefit." This system applies both to national and centralized authorizations. This system has been in force since late 2005, therefore some medicines remain covered by the previous system in which EU member states provided either 6 or 10 years of data exclusivity.

The EU also has an "orphan drug" system for medicines similar to the US system. If a medicine is designated as an "orphan drug," then it benefits from 10 years of market exclusivity after it is authorized, during which time a similar medicine for the same indication will not receive marketing authorization.

Japan

In Japan, a patent can be issued for active pharmaceutical ingredients. Although methods of treatment, such as dosage and administration, are not patentable in Japan, pharmaceutical compositions for a specific dosage or administration method are patentable. Processes to make a pharmaceutical composition are also patentable. The patent term granted is generally 20 years from the filing date of the patent application on which the patent is based. It can be extended up to 5 years under the Japanese Patent Act to compensate for erosion against the patent term caused by the time needed to obtain marketing authorization from the MHLW. Typically, it takes approximately 7 to 8 years to obtain marketing authorization in Japan. A patent application on a pharmaceutical substance is usually filed shortly before or at the time when clinical testing begins. Regarding compound patents, it commonly takes approximately 4 to 5 years or more from the patent application filing date to the date that the patent is ultimately granted. As a result, it is not uncommon for the effective term of patent protection for an active pharmaceutical ingredient in Japan to be approximately 10 to 15 years, if duly extended.

The following is a summary of the patent expiration dates for certain key products of our Pharmaceuticals Division:

Oncology

Gleevec/Glivec. We have patent protection on imatinib, the active ingredient used in our leading product *Gleevec/Glivec*, until July 2015 in the US (including pediatric extension), until 2016 in the major European countries and until September 2014 for the main indications in Japan. Additional patents were granted in more than 40 countries, including the US, Japan, France, Germany, UK, Italy and Spain, claiming innovative features of *Gleevec/Glivec*, including crystal form (expiry 2018), tablet formulation (expiry 2023) and process (expiry 2023). Patent protection on the crystal form of imatinib has been challenged in the US, but no challenge has been made to the compound patent in the US. *Gleevec/Glivec* currently faces generic competition in a number of countries including Brazil, Canada, China, India, Russia, Turkey and for a minor indication in Japan. Litigation is on-going in Canada, Portugal, UK, South Korea and Mexico.

Sandostatin. Patent protection for the active ingredient of *Sandostatin* has expired. Generic versions of *Sandostatin SC* are available in the US and elsewhere. Patents protecting the *Sandostatin LAR* formulation, the long-acting version of *Sandostatin* which represents a majority of our *Sandostatin* sales, expire in 2014 and beyond in the US, but expired in July 2010 in key markets outside the US.

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Afinitor/Votubia and *Zortress/Certican.* Patent protection for everolimus, the active ingredient in these products, and licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents, is expected to expire in 2020 in the US and in 2018-2019 in Europe and other major countries.

Exjade. Patent protection for the active ingredient in *Exjade* will expire in 2019 in the US and in 2021 in other markets. In the US and Canada, generic companies have challenged the compound patent. In the US, an automatic stay preventing the FDA from approving a generic version of *Exjade* will expire in August 2014. Novartis has begun patent litigation against this generic company in the US, with a trial scheduled for January 2014. It is possible that the generic company may launch its generic version of *Exjade* after the automatic stay expires, or if we lose our patent litigation suit against it.

Tasigna. Patent protection for the active ingredient in *Tasigna* will expire in 2023 in the US and other major markets.

Zometa and *Reclast/Aclasta.* Patent protection on zoledronic acid, the active ingredient in these products, expired in 2012 in a limited number of smaller markets, and in 2013 in the US and in other major markets. In the US, generic versions of *Zometa* and *Reclast* are available. In Europe, generic versions of *Zometa* are launched and generic *Aclasta* is available in some countries. Additional patents claiming certain innovative forms or uses of these products, in particular *Reclast/Aclasta*, have been granted in some countries including the US and Europe. Patent litigations are ongoing in the US, Europe and elsewhere.

Femara. Patent protection for the active ingredient in *Femara* expired in the US, in major European markets, and in Japan. Data exclusivity in Japan expires in 2014. Generic versions of *Femara* are available now in all major markets with the exception of Japan.

Jakavi. Basic compound patent protection (including SPC) for ruxolitinib, the active ingredient in *Jakavi*, expires in 2027 in Europe. Novartis licensed ruxolitinib from Incyte Corporation for development and commercialization outside the US.

Primary Care

Primary Care Medicines

Diovan/Co-Diovan/Diovan HCT. Patent protection on valsartan, the active ingredient used in our long-time best-selling products *Diovan* and *Co-Diovan/Diovan HCT*, expired in the major countries of Europe in 2011 and in September 2012 in the US. As a result, *Diovan* and *Co-Diovan/Diovan HCT* face generic competition in those countries. With respect to the US, generic versions of *Diovan HCT* launched in 2012. Generic versions of *Diovan* monotherapy have not yet launched in the US but could potentially launch at any time. Patent protection expired in Japan in 2013 for *Diovan* and will expire in 2016 for *Co-Diovan* (including patent term extensions). Patent litigations are ongoing against generic manufacturers in Europe and Asia.

Exforge/Exforge HCT. Exforge is a single-pill combination of amlodipine besylate and valsartan. *Exforge HCT* is the single-pill combination that also includes hydrochlorothiazide. The valsartan patents expired in many countries in 2011 and 2012 (see above), and will expire in 2015 in Japan, as a result of an extension granted in Japan for the *Exforge* product only. The patent on amlodipine besylate has expired. The patent covering the *Exforge* product (the combination of amlodipine besylate and valsartan) will expire in 2019 in the US and 2021 (including term extension) in Europe and has been challenged in both the US and Europe. In the US, under a license agreement with a generics manufacturer, the product is expected to face generic competition prior to patent expiry. We have regulatory exclusivity for the data generated for *Exforge* in Europe until 2017 and in Japan until 2014. Generic manufacturers may attempt to circumvent this regulatory exclusivity and seek

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to gain approval of a combination valsartan-amlodipine product in Europe before 2017. The patent covering the *Exforge HCT* product (the combination of amlodipine besylate, hydrochlorothiazide and valsartan) will expire in 2023 and has been challenged in the US.

Galvus and *Eucreas*. Patent protection for vildagliptin, the active ingredient of *Galvus*, and the patented active ingredient in *Eucreas*, is estimated to expire, with extensions, in 2019 to 2024.

Xolair. Patent protection for the active ingredient in *Xolair* will expire in 2018 in the US, in 2017 in Europe and in Japan (if the patent term extension pending there is granted), and expired in 2012 in Canada and Hong Kong. No biosimilar competitors have launched to date.

Arcapta/Onbrez. Patent protection for the active ingredient of *Onbrez* (*Arcapta* in the US) is expected to expire in 2025 in the US (including patent term extension), in 2024 in Europe, and in 2020 in various other markets.

Tekturna/Rasilez and combination products. Patent protection for aliskiren, the active ingredient of *Tekturna/Rasilez*, and various single-pill combination products, will expire in 2018 in the US (not including pediatric extension) and between 2015 and 2020 in other markets.

Seebri. There is no patent protection on glycopyrronium bromide, the active ingredient in *Seebri*. A number of patents covering the formulations, commercial product and uses of this product expire by 2025. In addition, *Seebri* is entitled to regulatory exclusivity for the data generated for approval until 2022 in Europe, and until 2020 in Japan.

Ultibro. Ultibro is a product which combines indacaterol, the active ingredient in *Arcapta/Onbrez*, with glycopyrronium bromide, the active ingredient in *Seebri*. Patent protection for indacaterol is expected to expire in 2025 in the US (including patent term extension), in 2024 in Europe (including patent term extensions), in 2025 in Japan and in 2020 in various other markets. There is no compound patent protection on glycopyrronium, but there are patents and patent applications for the dry powder formulation technology that apply to both glycopyrronium and fixed-dose combination indacaterol/glycopyrronium products. In addition, there are patents and patent applications for the combination of indacaterol and glycopyrronium that are due to expire in 2025 (excluding extensions in some countries).

Established Medicines

Voltaren/Cataflam. Patent protection for the active ingredient in *Voltaren* has expired worldwide.

Ritalin LA/Focalin XR. There is no patent protection for the active ingredient in *Ritalin* or *Focalin*. A number of patents covering the formulation will expire in 2015 and 2019. Several generic manufacturers have filed applications to market generic versions of *Ritalin LA* and *Focalin XR* in the US. Litigation against several generic manufacturers was initiated in the US. These patent litigations have been settled.

Specialty Care

Ophthalmology

Lucentis. Patent protection for the active ingredient in *Lucentis* expires in 2018-22 in Europe and Japan. Novartis licensed *Lucentis* from Genentech for development and commercialization outside the US.

Neuroscience

Gilenya. Patent protection for fingolimod, the active ingredient in *Gilenya* (licensed from Mitsubishi Tanabe Pharma Corporation), is expected to expire in 2019 in the US (including a

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5-year patent term extension), and in 2018 in Europe and Japan (including a 5-year patent term extension). In Europe and Japan, we have regulatory exclusivity for the data generated for approval of *Gilenya* until 2021, which could possibly be extended by one year in Europe. A patent for the commercial formulation of *Gilenya* has been granted in most major markets (including Australia and Russia, where there is no compound patent). This patent will expire in 2024 in most countries, including Europe and Japan, and in 2026 in the US.

Exelon. Patent protection for rivastigmine, the active ingredient in *Exelon*, granted to Proterra and licensed to Novartis, expired in August 2012 in the US and in 2011 in most other major markets. *Exelon* capsules are now subject to generic competition in major markets, including the US and all of Europe. We hold a patent on a specific isomeric form of the active ingredient used in *Exelon* that expires in 2014 in the US. *Exelon* Patch is covered by a formulation patent expiring in 2019 in major markets. In June 2013, the European Patent Office granted a patent (expiring in 2026) covering a dosage regimen of *Exelon* Patch. Since April 2011, four generic manufacturers have filed applications to market generic versions of the *Exelon* Patch in the US, and challenged the patents covering the *Exelon* Patch. We filed infringement lawsuits against all of these manufacturers. In 2012, we became aware that generic rivastigmine patches were being developed and manufactured in South Korea for markets including Europe. We have filed an infringement lawsuit under our South Korean patents. In 2013, generic patches manufactured in South Korea and Germany were launched in Germany, followed by certain other European countries. We are taking steps to enforce the European dosage regimen patent against the manufacturers and distributors of those patches.

Comtan. Patent protection for entacapone, the active ingredient in *Comtan*, licensed from Orion, has expired in Europe and the US and generic versions of *Comtan* are available.

Stalevo. Patent protection for entacapone, one of the active ingredients in *Stalevo*, has expired in Europe and the US (see above). *Stalevo* is protected by additional patents expiring up to 2020. Patent litigation by Orion in the US against generic manufacturers settled and generic versions of *Stalevo* were launched in the US. Novartis was not a party to the US litigation.

Integrated Hospital Care

Neoral/Sandimmune. Patent protection for the cyclosporine ingredient of *Neoral/Sandimmune* has expired worldwide.

Myfortic. There is no patent protection for the active ingredient in *Myfortic*. Patents covering the formulation will expire in 2017. In the US, four patent litigations have been settled and a generic version of *Myfortic* is currently available. Generic manufacturers are seeking approval for generic versions of *Myfortic* in some European countries.

Ilaris. Patent protection for the active ingredient in *Ilaris* is expected to expire in 2024 in the US and in Europe.

Critical Care

TOBI Podhaler. There is no patent protection for the active ingredient, tobramycin. Patents covering the commercial product will expire from 2018 to 2022 in the US and Europe. Additional patent applications are also pending with respect to the commercial product in the US and Europe. If the last-filed of these applications were granted, then that patent would expire in 2025. In addition, in Europe, the product is entitled to orphan drug status until 2021 for the current approved indication.

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Compounds in Development

We file patent applications on our Compounds in Development during the course of the development process. The length of the term of any patents on our Compounds in Development cannot be known with certainty until after a compound is approved for marketing by a health authority. This is so because patent applications for many of the compounds will be pending during the course of the development process, but not yet granted. In addition, while certain patents may be applied for early in the development process, such as for the compound itself, it is not uncommon for additional patent applications to be applied for throughout the development process, such as for formulations, or additional uses. Further, in certain countries, data exclusivity and other regulatory exclusivity periods may be available, and may impact the period during which we would have the exclusive right to sell a product. These exclusivity periods generally run from the date the products are approved, and so their expiration dates cannot be known with certainty until the product approval dates are known. Finally, in the US and other countries, pharmaceutical products are eligible for a patent term extension for patent periods lost during product development and regulatory review. The law recognizes that product development and review by the FDA and other health authorities can take an extended period, and permits an extension of the patent term for a period related to the time taken for the conduct of clinical trials and for the health authority's review. However, the length of this extension and the patents to which it applies cannot be known in advance, but can only be determined after the product is approved.

Subject to these uncertainties, we provide the following information regarding our Compounds in Phase III Clinical Development, if any, which have been submitted for registration to the FDA or the EU's EMA:

AIN457. Patent protection for secukinumab, an anti-IL-17 monoclonal antibody, is expected to expire in 2028 in the US and 2030 in Europe.

RLX030. Patent protection for the serelaxin molecule (human relaxin-2) has expired and the patents covering the formulation and process will expire shortly after the product's projected launch date. A patent covering the method of using serelaxin to treat acute heart failure has been granted in the US and expires in 2029. This use patent is now under examination worldwide in markets that permit use patents. Serelaxin is entitled to post-approval regulatory exclusivity for 12 years in the US, 11 years in Europe and 8 years in Japan.

SOM230: Patent protection for pasireotide, including patent term extensions, is expected to expire in the US and Europe in 2026.

The loss of patent protection can have a significant adverse impact on our Pharmaceuticals Division. There is also a risk that some countries, particularly countries in the developing world, may seek to impose limitations on the availability of patent protection for pharmaceutical products, or on the extent to which such protections may be enforced. In addition, even though we may own or license patents protecting our products, and conduct pre-launch freedom-to-operate analyses, a third party may nevertheless claim that one of our products infringes an unlicensed third party patent. In addition, despite data exclusivity, a competitor could opt to incur the costs of conducting its own clinical trials and preparing its own regulatory application, and avoid data exclusivity altogether. As a result, there can be no assurance that our efforts to protect our intellectual property will be effective, or that we will be able to avoid substantial adverse effects from the loss of patent protection in the future.

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ALCON

Our Alcon Division is a leader in the research, development, manufacturing and marketing of eye care products worldwide. As of December 31, 2013, the Alcon Division employed 25,494 full-time equivalent associates worldwide in 75 countries. In 2013, the Alcon Division had consolidated net sales of $10.5 billion representing 18% of total Group net sales.

Alcon is a global leader in eye care and offers an extensive breadth of products serving the full lifecycle of patient needs across eye diseases, vision conditions and refractive errors, and is our second largest Division based on sales. To meet the needs of ophthalmologists, surgeons, optometrists, opticians and physician specialists, Alcon operates with three businesses: Surgical, Ophthalmic Pharmaceuticals and Vision Care. Alcon sells products in 180 markets, and runs operations in 75 countries. Each business operates with specialized sales forces and marketing support.

Alcon's dedication to research and development is important to our growth plans. As part of our efforts, the Alcon Division works together with the Novartis Institutes for BioMedical Research (NIBR), our global pharmaceutical research organization. This collaboration allows our Alcon Division to leverage the resources of NIBR in an effort to discover and expand ophthalmic pharmaceutical research targets and to develop chemical and biologic compounds for the potential development in diseases of the eye, with a particular focus on diseases such as glaucoma and macular degeneration.

In March 2012, Alcon gained exclusive rights from ThromboGenics to commercialize *Jetrea* (ocriplasmin) intravitreal injection outside the US. *Jetrea* is the first pharmacological treatment for vitreomacular traction, including macular hole, in Europe. *Jetrea* was approved for sale in the EU in 2013.

In July 2012, Alcon acquired Endure Medical Systems. The acquisition enabled Alcon to enter into the ophthalmic microscopy field through the addition of the *LuxOR* microscope, which has applications for both cataract, as well as vitreoretinal surgeries. Products were introduced globally in 2013.

To further improve surgical planning and refractive patient outcomes in cataract surgery, Alcon acquired the ophthalmic division of SensoMotoric Instruments in November 2012, providing Alcon with leading ocular surgical guidance technology. Alcon also agreed to acquire, from Jack Holladay, MD, and software developer Athanassios Kontos, the rights to certain surgical guidance and planning software used in cataract procedures.

The merger of Alcon into Novartis was completed in April 2011. The merger united the strengths of Alcon, CIBA Vision and Novartis Ophthalmics into one eye care business. See "Item 5. Operating and Financial Review and Prospects Item 5.A Operating Results Factors Affecting Comparability of Year-On-Year Results of Operations Recent Significant Transactions Acquisitions in 2011 Alcon full ownership and merger in 2011." At that time, Alcon's portfolio of generic ophthalmic medicines sold through its Falcon business unit primarily in the US, was integrated into our Sandoz Division. Alcon has continued to manufacture the Falcon generics products and supply them to Sandoz. See
" Sandoz."

Alcon Division Products

Surgical

Our Alcon Division's Surgical business is the market leader in global ophthalmic surgical product revenues, according to Market Scope, offering ophthalmic surgical equipment, instruments, disposable products and intraocular lenses for surgical procedures that address cataracts, vitreoretinal conditions, glaucoma and refractive errors.

Alcon's Surgical portfolio includes the *Infiniti* vision system to perform cataract surgeries, the *Constellation* vision system for retinal operations, and the *Wavelight* refractive suite for refractive procedures. Alcon also offers the *AcrySof* family of intraocular lenses (IOLs) to treat cataracts, including the *AcrySof IQ*, *AcrySof IQ ReSTOR, AcrySof IQ Toric* and *AcrySof IQ ReSTOR Toric* IOLs. In addition,

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Alcon provides advanced viscoelastics, surgical solutions, surgical packs and other disposable products for cataract and vitreoretinal surgery. The portfolio also includes the Cataract Refractive Suite, a suite of equipment to help plan and perform some of the most challenging steps of cataract surgery with automation and precision. It is comprised of the *Verion* image guided system, an ocular surgical planning, imaging and guidance technology; the *Centurion* vision system phacoemulsification technology platform; the *LuxOR LX3* surgical microscope for greater visualization during surgery; as well as the *LenSx* laser, a femtosecond laser for increased precision and reproducibility for the corneal incision, capsulorhexis and lens fragmentation steps of the procedure.

Ophthalmic Pharmaceuticals

Our Alcon Division's Ophthalmic Pharmaceuticals business combined Alcon's broad range of pharmaceuticals with selected ophthalmic products (excluding *Lucentis*) previously marketed by the Novartis Pharmaceuticals Division. The products treat chronic and acute conditions of the eye including glaucoma, elevated intraocular pressure (associated with glaucoma), eye infection and inflammation, eye allergies, and dry eye. Our Alcon Division's Ophthalmic Pharmaceuticals business also oversees the line of professionally driven over-the-counter brands that include artificial tears and ocular vitamins. Product highlights within the Alcon Division's Ophthalmic Pharmaceuticals portfolio include *Jetrea* intravitreal injection for treating vitreomacular traction, including macular hole; *Ilevro* ophthalmic suspension for the treatment of pain and inflammation associated with cataract surgery; *Simbrinza* suspension to lower intraocular pressure as a fixed-dose combination; *Travatan Z* ophthalmic solution and *DuoTrav* ophthalmic solution for the treatment of elevated intraocular pressure associated with glaucoma; *Vigamox* ophthalmic solution for bacterial conjunctivitis; *Pataday* ophthalmic solution for ocular itching associated with allergic conjunctivitis; *Nevanac* ophthalmic suspension for eye pain and inflammation following cataract surgery, and to reduce the risk of macular edema associated with cataract surgery in diabetic patients; and the *Systane* family of over-the-counter products for dry eye relief.

Vision Care

Our Alcon Division's Vision Care business combined the portfolio of contact lenses and lens care products that had been sold by our former CIBA Vision Business Unit, with Alcon's contact lens care solution portfolio. Our contact lens care solutions business includes the *Opti-Free* line of multi-purpose disinfecting solutions, as well as the *Clear Care* and *AOSept Plus* hydrogen peroxide lens care solutions. Alcon also offers a broad portfolio of silicone hydrogel, daily disposables and color contact lenses, including our *Air Optix*, *Dailies* and *Freshlook* brands. Our *Dailies* business now includes *Dailies Total1* lenses, a first-of-its-kind water gradient contact lens. Through the integration of CIBA Vision products, Alcon is now one of the largest manufacturers of contact lenses and lens care products.

New Products

Alcon launched a number of significant products in 2013, and also received a number of key approvals, including:

AcrySof IQ ReSTOR Multifocal Toric IOL advanced technology intraocular lenses to correct cataracts, as well as refractive errors like astigmatism for improved near and intermediate vision, launched in China.

Cataract Refractive Suite suite of tools for use during cataract surgery launched in the US and EU.

Centurion vision system Alcon's next-generation phacoemulsification system for use during cataract surgery launched in the US and EU.

Air Optix Colors lenses silicone hydrogel, color cosmetic contact lenses received EMA approval for natural eye color enhancement.

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Dailies Aqua Comfort Plus Toric lenses silicone hydrogel, daily disposable contact lenses for improving refractive errors, such as astigmatism, received FDA approval.

Dailies Illuminate lenses color contact lenses introduced a new color, Light Brown, in Japan.

Dailies Total1 lenses daily disposable, water gradient contact lenses launched in the US, Switzerland, Canada, UK, Spain and Portugal, while also receiving approval in China.

Azorga (Brinzolamide 10mg/ml+timolol 5mg/ml) suspension received approval in Japan for the treatment of elevated intraocular pressure associated with glaucoma or ocular hypertension.

Ilevro (nepafenac ophthalmic suspension), 0.3% launched in the US, received EMA approval and launched in Europe, and received Health Canada approval for the once-daily treatment of pain and inflammation associated with cataract surgery.

Jetrea (ocriplasmin) intravitreal injection the first pharmacological treatment for vitreomacular traction, including macular hole, received EMA approval and launched in Germany, Benelux the Nordics, and the UK in the private market. The product also launched in Canada after receiving a Notice of Compliance and approval from Health Canada.

Simbrinza (brinzolamide, 1.0%/Brimonidine tartrate 0.2%) suspension received FDA approval and launched in the US for treatment of elevated intraocular pressure associated with glaucoma.

Key Marketed Products

The following tables set forth certain key marketed products in our Alcon Division. While we intend to sell our marketed products throughout the world, not all products and indications are currently available in every country.

Surgical

Cataract	*Acrysof* family of intraocular lenses includes but is not limited to: *Acrysof IQ ReSTOR, Acrysof IQ Toric* and *Acrysof IQ ReSTOR Toric* advanced technology intraocular lenses that correct cataracts with presbyopia and/or astigmatism
	Cataract Refractive Suite designed to streamline the cataract surgical procedure through surgical planning and execution
	Centurion vision system intelligent phacoemulsification technology platform with cataract removal capabilities
	Infiniti vision system with the *OZil* torsional hand piece for cataract procedures
	LenSx laser used for specific steps in the cataract surgical procedure
	LuxOR microscope used for ophthalmic surgical procedures
Vitreoretinal	*Constellation* vision system for vitreoretinal operations
	Constellation Ultravit vitrectomy probe
	Vitrectomy Probes in 23G, *25+*
	Purepoint laser system
	Grieshaber surgical instruments
	Edgeplus blade trocar cannula system

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Refractive	*Allegretto Wave Eye-Q* excimer laser for LASIK vision correction
	Wavelight FS200 laser for specific steps in LASIK surgical procedures
	Wavelight EX500 laser for LASIK vision correction
	Acrysof Cachet phakic intraocular lens that corrects moderate to high myopia
Glaucoma	*EX-PRESS* glaucoma filtration device

In addition, Alcon provides advanced viscoelastics, surgical solutions, surgical packs and other disposable products for cataract and vitreoretinal surgery.

Ophthalmic Pharmaceuticals

Glaucoma	*Simbrinza* suspension to lower intraocular pressure without a beta blocker
	Travatan and *Travatan Z* ophthalmic solutions to lower intraocular pressure
	Azopt ophthalmic suspension to lower intraocular pressure
	DuoTrav ophthalmic solution to lower intraocular pressure (outside US markets)
	Azarga/Azorga ophthalmic suspension to lower intraocular pressure (outside US markets)
	Nyogel eye gel for reduction of intraocular pressure
Anti-Infectives	*Vigamox* and *Moxeza* ophthalmic solution for treatment of bacterial conjunctivitis
	Okacin ophthalmic solution for treatment of bacterial conjunctivitis (Turkey only)
Anti-Inflammation	*Ilevro* suspension to treat pain and inflammation following cataract surgery
	Nevanac ophthalmic suspension to treat pain and inflammation following cataract surgery, and to reduce the risk of macular edema associated with cataract surgery in diabetic patients
	Durezol emulsion to treat pain and inflammation associated with eye surgery, and to treat anterior uveitis
	TobraDex and *TobraDex ST* ophthalmic suspensions, combination anti-infective/anti-inflammatory products
	Voltaren Ophtha treatment of postoperative inflammation after cataract surgery, temporary relief of pain and photophobia after refractive surgery

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Dry Eye	The *Systane* family of over-the-counter dry eye products:
	Systane Balance lubricant eye drops
	Systane Ultra lubricant eye drops
	Systane lubricant eye drops
	Systane gel drops
	Systane lid wipes
	Lubricants for eye dryness, discomfort or ocular fatigue:
	GenTeal eye drops
	Viscotears liquid gel
	Oculotect eye drops (outside US markets)
	Hypotears lubricant eye drops
Allergy	*Patanol* and *Pataday* ophthalmic solutions for ocular itching associated with allergic conjunctivitis
	Patanase nasal spray for seasonal nasal allergy symptoms
	Zaditor antihistamine eye drops for temporary relief of itchy eyes associated with eye allergies (over-the-counter in the US)
	Zaditen Ophtha an H1-antagonist to fight allergic conjunctivitis
	Livostin an H1-antagonist to fight allergic conjunctivitis (Canada only)
Ear Infections	Ciprodex®* Otic suspension to treat middle and outer ear infections
Ocular Nutrition	*ICaps* eye vitamin dietary supplements provide essential dietary ingredients to support eye health
	Vitalux nutrient supplements help patients with age-related macular degeneration maintain their vision (outside US markets)
Other Products	*Antikatarata* supplementary treatment of lens opacities (Russia only)
Retinal	*Jetrea* (ocriplasmin) intravitreal injection for the treatment of vitreomacular traction, including macular hole

* CiproDex® is a registered trademark of Bayer, AG.

Vision Care

Contact Lenses	*Air Optix* family of silicone hydrogel contact lenses
	Dailies family of daily disposable contact lenses (including *Dailies Total1*)
	FreshLook family of color contact lenses
Contact Lens Care	*Opti-Free PureMoist* MPDS
	Opti-Free RepleniSH MPDS
	Opti-Free Express MPDS
	Clear Care cleaning and disinfecting solution (*AOSept Plus* outside of North America)

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Selected Development Projects

Surgical

Project/Product	Mechanism of action	Potential indication	Planned submission date/Current Phase
AcrySof IQ ReSTOR 2.5D	Multifocal aspheric intraocular lens	Presbyopia and cataractous lens replacement	Submitted US
AcrySof IQ ReSTOR Toric 2.5D	Multifocal, aspheric and cylinder correcting intraocular lens	Presbyopia and cataractous lens replacement with astigmatism correction	2014 US/Advanced development
AcrySof IQ ReSTOR Toric 3.0D	Multifocal, aspheric and cylinder correcting intraocular lens	Presbyopia and cataractous lens replacement with astigmatism correction	Submitted US
Allegretto EX-500 laser	Refractive correction	Photorefractive keratotomy	2014 US/Advanced development
LuxOR microscope	Visualization	Cataract surgery	2014/Advanced development

Ophthalmic Pharmaceuticals

Project/Product	Mechanism of action	Potential indication	Route of Administration	Planned submission date/Current Phase
EXE844	Anti-infective	Otitis externa	Topical	2014/III
EXE844b	Anti-infective	Otic infections	Topical	2015/II
EXZ829 (olopatadine hydrochloride)	Antihistamine and mast cell stabilization	Allergic conjunctivitis	Topical	2014/III
GLT137 (travoprost)	Prostaglandin analogue	Glaucoma/ocular hypertension	Topical	Submitted
Ilevro suspension (nepafenac)	Anti-inflammatory	Macular edema	Topical	2015/III
LFG316	Complement inhibition	Geographic atrophy	Intravitreal	≥ 2017/II
RTH258	Anti-VEGF	Wet macular degeneration	Intravitreal	≥ 2016/II
Simbrinza suspension (brinzolamide/brimonidine tartrate)	Carbonic anhydrase inhibitor/alpha agonist	Glaucoma/ocular hypertension	Topical	Submitted EU

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Vision Care

Project/Product	Mechanism of action	Potential indication	Planned submission date/Current Phase
Air Optix Aqua Colors	Spherical correction with color enhancement	Contact lens wear	Submitted US
CLM041	Presbyopia correcting contact lens	Presbyopia correction	Submitted
LCE293	Disinfection and cleaning	Contact lens care	≥ 2014/Advanced development

Principal Markets

The principal markets for our Alcon Division include the US, Americas (except the US), Japan and Europe. The following table sets forth the aggregate 2013 net sales of the Alcon Division by region:

Alcon Division	2013 Net Sales to third parties	
	$ millions	%
United States	4,179	40
Americas (except the United States)	1,108	10
Europe	2,831	27
Rest of the World	2,378	23
Total	**10,496**	**100**

	$ millions	%
Established Markets*	7,918	75
Emerging Growth Markets*	2,578	25
Total	**10,496**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Sales of certain ophthalmic pharmaceutical products, including those for allergies, anti-inflammatory and dry eye, are subject to seasonal variation. Sales of the majority of our other products are not subject to material changes in seasonal demand.

Research and Development

In 2013, the Alcon Division expensed $1.0 billion (on a core basis $0.9 billion) in research and development, which amounted to 10% of the Division's net sales. The Alcon Division expensed $1.0 billion (on a core basis $1.0 billion) and $0.9 billion (on a core basis $0.9 billion) in

research and development in 2012 and 2011, respectively.

The Alcon Division has more than 2,000 associates dedicated to research and development, working to address diseases and conditions that affect vision, such as cataracts, glaucoma, retina diseases, dry eye, infection, ocular allergies and refractive error. Our Alcon Division invests $1 billion annually to drive research and new product development in eye care. Alcon's pipeline strategy is built around a proof-of-concept qualification process, which quickly identifies opportunities that have the best chance for technical success and advances those projects, while terminating others with a low probability of success.

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The Novartis Institutes for BioMedical Research (NIBR) is the Novartis global pharmaceutical research organization that works to discover innovative medicines that treat disease and improve human health. See " Pharmaceuticals Research and Development." For Alcon's Ophthalmic Pharmaceuticals business, NIBR engages in research activities in an effort to discover and expand ophthalmic research targets, and to develop chemical and biologic compounds for the potential development in diseases of the eye, with a particular focus on diseases such as glaucoma and macular degeneration. The costs for these activities are allocated to Alcon.

Research and development activities for Alcon's surgical business are focused on expanding intraocular lens capabilities to improve refractive outcomes and on developing instruments for cataract, vitreoretinal and corneal refractive surgeries. The focus for the Vision Care business is on the research and development of new lens materials, coatings and designs to improve patient comfort, and on lens care solutions that provide the safety, disinfecting and cleaning power needed to help maintain ocular health.

Production

We manufacture our Alcon Division's pharmaceutical products at nine facilities in the United States, Belgium, France, Spain, Brazil, Mexico, Canada and Singapore. Our Alcon Division's surgical equipment and other surgical medical devices are manufactured at twelve facilities in the United States, Belgium, Switzerland, Ireland, Germany and Israel. Our Alcon Division's contact lens and certain lens care production facilities are in the US, Canada, Germany, Singapore, Malaysia and Indonesia.

The goal of our supply chain strategy is to efficiently produce and distribute high quality products. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For some products and raw materials, we may also rely on a single source of supply.

The manufacture of our products is complex and heavily regulated, which means that supply is never guaranteed. Like our competitors, our Alcon Division has faced manufacturing issues and has received Warning Letters relating to such manufacturing issues. In particular, in December 2012, Alcon received an FDA Warning Letter following an inspection at the *LenSx* laser manufacturing site in Aliso Viejo, California. Alcon responded in writing to the FDA, and in February 2013, FDA responded to Alcon acknowledging that the corrective actions described in Alcon's written response appear to address the items identified in the Warning Letter. The FDA will verify these corrective actions during its next scheduled inspection of the site. The items noted in the Warning Letter do not affect the safety or effectiveness of the *LenSx* laser, or impact Alcon's ability to sell the product. If we or our third-party suppliers fail to comply fully with regulations then there could be a product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of such events or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues when they arise.

Marketing and Sales

Our Alcon Division conducts sales and marketing activities around the world organized under five operating regions (US and Canada, Europe/Middle East/Africa, Latin America/Caribbean, Asia and Japan). The Alcon Division's global commercial capability is organized around sales and marketing organizations dedicated to the Surgical, Ophthalmic Pharmaceuticals and Vision Care businesses.

Most of our global Alcon marketing efforts are supported by advertising in trade publications and by marketing and sales representatives attending regional and national medical conferences. Marketing efforts are reinforced by targeted and timely promotional materials and direct mail to eye care practitioners in the office, hospital or surgery center setting. Technical service after the sale is provided and an integrated customer relationship management system is in place in many markets. Where

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applicable in our Ophthalmic Pharmaceuticals and Vision Care businesses, direct-to-consumer marketing campaigns are executed to promote selected products.

While our Alcon Division markets all of its products by calling on medical professionals, direct customers and distribution methods differ across business lines. Although physicians write prescriptions, distributors, wholesalers, hospitals, government agencies and large retailers are the main direct customers for Alcon ophthalmic pharmaceutical products. Alcon surgical products are sold directly to hospitals and ambulatory surgical centers, although Alcon sells through distributors in certain markets outside the US. In most countries, contact lenses are available only by prescription. Our contact lenses can be purchased from eye care professionals, optical chains and large retailers, subject to country regulation. Lens care products can be found in major drugstores, food, mass merchandising and optical retail chains globally, subject to country regulations. In addition, mail order and Internet sales of contact lenses are becoming increasingly important channels in major markets worldwide.

As a result of the changes in healthcare economics, managed care organizations have become the largest group of payors for healthcare services in the US. In an effort to control prescription drug costs, almost all managed care organizations use a formulary that lists specific drugs that can be prescribed and/or the amount of reimbursement for each drug. We have a dedicated managed care sales team that actively seeks to optimize formulary positions for our products.

Competition

The eye care industry is highly competitive and subject to rapid technological change and evolving industry requirements and standards. Our Alcon Division typically competes with different companies across its three respective businesses Ophthalmic Pharmaceuticals, Surgical and Vision Care. Companies within this industry compete on technological leadership and innovation, quality and efficacy of their products, relationships with eye care professionals and healthcare providers, breadth and depth of product offering and pricing. The presence of these factors varies across our Alcon Division's product offerings, which provides a broad line of proprietary eye care products and competes in all major product categories in the eye care market, with the exception of eyeglasses. Our principal competitors also sometimes form strategic alliances and enter into co-marketing agreements in an effort to better compete with us.

Regulation

Our Ophthalmic Pharmaceuticals products are subject to the same regulatory procedures as are the products of our Pharmaceuticals Division. See " Pharmaceuticals Regulation."

Our Surgical and Vision Care products are regulated as medical devices in the US and the EU. These jurisdictions each have risk-based classification systems that determine the type of information which must be provided to the local regulators in order to obtain the right to market a product. In the US, safety and effectiveness information for Class II and III devices must be reviewed by the FDA. There are two review procedures: a Pre-Market Approval (PMA) and a Pre-Market Notification (510(k)) submission. Under a PMA, the manufacturer must submit to the FDA supporting evidence sufficient to prove the safety and effectiveness of the device. The FDA review of a PMA usually takes 180 days from the date of filing of the application. Under Pre-Market Notification (510(k)), the manufacturer submits notification to the FDA that it intends to commence marketing the product, with data that establishes the product as substantially equivalent to another product already on the market. The FDA usually determines whether the device is substantially equivalent within 90 days.

In the EU, the CE marking is required for all medical devices sold. By affixing the CE marking, the manufacturer certifies that a product is in compliance with provisions of the EU's Medical Device Directive. Most such products are subject to a self-certification process by the manufacturer, which requires the manufacturer to confirm that the product performs to appropriate standards. This allows the manufacturer to issue a Declaration of Conformity and to notify competent authorities in the EU that the

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manufacturer intends to market the product. In order to comply with European regulations, our Alcon Division maintains a full Quality Assurance system and is subject to routine auditing by a certified third party (a "notified body") to ensure that this quality system is in compliance with the requirements of the EU's Medical Device Directive as well as the requirements of the ISO quality systems' standard ISO 13485.

Intellectual Property

We attach great importance to patents, trademarks, copyrights and know-how in order to protect our investment in research and development, manufacturing and marketing. It is our policy to seek the broadest possible protection for significant product developments in all major markets. Among other things, patents may cover the products themselves, including the product's active substance and its formulation. Patents may also cover the processes for manufacturing a product, including processes for manufacturing intermediate substances used in the manufacture of the products. Patents may also cover particular uses of a product, such as its use to treat a particular disease, or its dosage regimen.

The protection offered by such patents extends for varying periods depending on the legal life of patents in the various countries. The protection afforded, which may also vary from country to country, depends upon the type of patent and its scope of coverage. We monitor our competitors and vigorously challenge infringements of our intellectual property. See generally " Pharmaceuticals Intellectual Property."

Worldwide, all of our major products are sold under trademarks that we consider in the aggregate to be important to our businesses as a whole. We consider trademark protection to be particularly important in the protection of our investment in the sales and marketing of our Surgical, Ophthalmic Pharmaceuticals and Vision Care businesses. The scope and duration of trademark protection varies widely throughout the world. In some countries, trademark protection continues only as long as the mark is used. Other countries require registration of trademarks and the payment of registration fees. Trademark registrations are generally for fixed, but renewable, terms.

We rely on copyright protection in various jurisdictions to protect the exclusivity of the code for the software used in our surgical equipment. The scope of copyright protection for computer software varies throughout the world, although it is generally for a fixed term which begins on the date of copyright registration.

SANDOZ

Our Sandoz Division is a leader in developing, manufacturing and marketing generic pharmaceutical products, follow-on biopharmaceutical products and drug substances that are not protected by valid and enforceable third-party patents. As of December 31, 2013, affiliates of the Sandoz Division employed 26,905 full-time equivalent associates worldwide, and sells products in more than 140 countries. In 2013, the Sandoz Division achieved consolidated net sales of $9.2 billion, representing 16% of the Group's total net sales.

The Sandoz Division develops, manufactures, distributes and sells prescription medicines, as well as pharmaceutical and biotechnological active substances, which are not protected by valid and enforceable third-party patents. Sandoz has activities in Retail Generics, Anti-Infectives and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the specialty areas of Dermatology, Respiratory and Ophthalmics. In Anti-Infectives, Sandoz manufactures active pharmaceutical ingredients and intermediates mainly antibiotics for internal use by Retail Generics and for sale to third-party customers. In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- or other biotechnology-based products (known as biosimilars or follow-on biologics) and provides biotechnology manufacturing services to other companies, and in Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market.

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Sandoz has three strategic priorities: to differentiate Sandoz based on its extensive global reach and advanced technical expertise in the development, manufacturing and marketing of differentiated generics and biosimilars, to be first-to-market as originators' substance patents expire or become unenforceable, and to be cost competitive by leveraging economies of scale in production and development.

According to IMS Health, Sandoz is the second-largest company in worldwide generic sales and is the global leader in biosimilars, with three marketed medicines accounting for over half of all biosimilars in the combined regions of North America, Europe, Japan and Australia. In addition, we have a pipeline of several biosimilar molecules including biosimilar rituximab (sold by Roche under the brand names Rituxan®/MabThera®) and biosimilar etanercept (sold by Amgen and Pfizer under the brand name Enbrel®).

In 2013, Sandoz launched 31 new products in the US twice as many as in 2012 including first-to-market launches of candesartan cilexetil tablets (AstraZeneca's Atacand®) and metronidazole 1% topical gel (Galderma Labs' Metrogel®) as well as authorized generics of Merck's temozolomide (Temodar®) and Celgene's azacitidine (Vidaza®).

Key product launches in various European countries include montelukast (Merck's Singulair®), sildenafil (Pfizer's Viagra®), memantine (Lundbeck's Ebixa®/Merz Pharmaceuticals' Axura®), escitalopram (Lundbeck's Cipralex®), methylphenidate (Janssen-Cilag's Concerta®), mometasone (Merck's Nasonex®), and diclofenac (an authorized generic version of our Pharmaceuticals Division's *Voltaren*).

In Biopharmaceuticals, Sandoz continued to strengthen its global leadership in biosimilars, and to drive its contract manufacturing base business. All three Sandoz biosimilar products continue to occupy the number one biosimilar position in terms of market share in their respective markets. According to IMS data, recombinant growth hormone *Omnitrope* was the fastest growing hGH treatment globally by volume. *Omnitrope*, which is now marketed in over 40 countries, was also among Sandoz's top three products in terms of sales. In 2013, Sandoz also introduced an innovative device that provides patients with a simple and secure way to inject *Omnitrope*. Anemia medicine *Binocrit* continued to demonstrate strong growth in several European countries as a short-acting erythropoietin stimulating agent (ESA). According to IMS, Sandoz G-CSF biosimilar, *Zarzio,* became the first biosimilar to overtake its reference product (Amgen's Neupogen®), as well as market leader (Chugai's Granocyte®), and is now the most prescribed daily G-CSF by volume in Europe and the number one daily G-CSF biosimilar globally.

Sandoz made significant progress on its biosimilar pipeline in 2013, with the start of Phase III clinical trials for biosimilar etanercept (Amgen's Enbrel®) and biosimilar adalimumab (AbbVie's Humira®). Sandoz now has six molecules in Phase III trials, including a biosimilar version of the originator compound rituximab (Roche's Rituxan®/MabThera®), which is currently in a Phase III clinical trial for the treatment of follicular lymphoma, and a Phase II trial for rheumatoid arthritis. Some of the other molecules undergoing Phase III testing are biosimilar versions of pegfilgrastim (Amgen's Neulasta®), filgrastim for US registration (Amgen's Neupogen®) and epoetin alfa (Janssen's Procrit®).

Sandoz received its first European approvals in Denmark in December 2013 and in other countries including Germany and Sweden in January 2014 for its *AirFluSal Forspiro* respiratory inhaler for asthma and chronic obstructive pulmonary disease patients, which offers the proven combination of salmeterol (a long-acting inhaled beta$_2$-agonist) and fluticasone (an inhaled corticosteroid) in an innovative new inhalation device. The product's safety, efficacy and equivalence have been proven in multiple clinical trials. These approvals of *AirFluSal Forspiro* are a key element of Sandoz's strategy to introduce differentiated generic medicines.

In 2013, Sandoz continued to accelerate its efforts to build a leading, sustainable and lasting presence across Sub-Saharan Africa, where it is already the number one provider of generics medicine across French West Africa. A strong product portfolio, including anti-infectives, tuberculosis treatments and maternal and child health products, support the objective to expand on the continent and address the

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needs of African patients. In 2013, Sandoz opened offices in Senegal (regional office for West Africa), Kenya, Ethiopia, Nigeria, Ghana, and Zambia. The Division also continued its ongoing work through several corporate responsibility projects, including efforts to develop "Health Shops" in Zambia in collaboration with the Zambian Ministry of Health to improve access to essential medicines in rural areas and a collaboration with Ethiopian authorities to set up a regional bioequivalence laboratory in Ethiopia. Sandoz is developing plans to expand its production capacity in Sub-Saharan Africa to address a growing demand for high-quality drugs.

New Products

Sandoz launched a number of important products in various countries in 2013, including:

Nystatin-Triamcin cream (Bristol Myers Squibb's Mycolog®-II)

Montelukast (Merck's Singulair®)

Candesartan cilexetil tablets (AstraZeneca's Atacand®)

Sildenafil (Pfizer's Viagra®)

Zoledronic acid (authorized generic version of our Pharmaceuticals Division's *Zometa*)

Clindamycin in 5% dextrose (Pfizer's Cleocin Phosphate® in Dextrose 5%)

Telmisartan (Boehringer Ingelheims Micardis®)

Capecitabine (Roche's Xeloda®)

Temozolomide (Merck's Temodar®)

Methylphenidate (Janssen's Concerta®)

Memantine (Lundbeck's Ebixa®/Merz Pharmaceuticals' Axura®)

Pioglitazone/Metformin tablets (Takeda Pharmaceuticals' Actoplus Met®)

Metronidazole 1% topical gel (Galderma Lab's Metrogel®)

Azacitidine for injection (Celgene's Vidaza®)

Key Marketed Products

The following tables describe key marketed products for Sandoz (availability varies by market):

Retail Generics

Product	Originator Drug	Description
Amoxicillin/clavulanic acid	Augmentin®	Anti-infective
Enoxaparin sodium injection	Lovenox®	Anti-coagulant
Acetylcysteine	Fluimicil®	Respiratory system
Fentanyl	Duragesic®	Analgesic
Omeprazole	Prilosec®	Ulcer and heartburn treatment
Linex (lactobacillus)	n/a	Dietary supplement
Tacrolimus	Prograf®	Transplantation
Sumatriptan	Imitrex®, Imigran®	Migraine headaches
Atorvastatin	Lipitor®	Blood cholesterol reduction
Diclofenac	*Voltaren*	Analgesic

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Anti-Infectives

Active Ingredients	Description
Oral and sterile penicillins	Anti-infectives
Oral and sterile cephalosporins	Anti-infectives
Clavulanic acid and mixtures with clavulanic acid	ß-lactam inhibitors
Classical and semisynthetic erythromycins	Anti-infectives

Intermediates	Description
Various cephalosporin intermediates	Anti-infectives
Erythromycin base	Anti-infectives
Various crude compounds produced by fermentation	Cyclosporine, ascomysine, rapamycine, mycophenolic acid, etc.

Biopharmaceuticals

Product	Originator Drug	Description
Omnitrope	Somatropin®	Recombinant human growth hormone
Binocrit and *Epoetin alfa Hexal*	Eprex®/Erypo®	Recombinant protein used for anemia
Zarzio and *Filgrastim Hexal*	Neupogen®	Recombinant protein used in oncology

Oncology Injectables

Product	Originator Drug	Description
Leuprorelin	Lupron®, Eligard®	Prostate cancer
Docetaxel	Taxotere®	Breast, ovarian and non-small cell lung cancer
Methotrexate	Folex®, Rheumatrex®	Arthritis; breast, lung, cervix and ovarian cancer, and others
Azacitidine	Vidaza®	Bone marrow cancer, leukemia
Paclitaxel	Taxol®	Breast, lung and ovarian cancer, Kaposi sarcoma
Gemcitabine	Gemzar®	Bladder, pancreas, lung, ovarian, and breast cancer
Etoposide	Etopophos®, Vepesid®	Lung, ovarian, and testicular cancer
Oxaliplatin	Eloxatin®	Colorectal and colon cancer
Irinotecan	Camptosar®	Colon and Rectal cancer
Doxorubicin	Doxil®, Adriamycin®	Leukemia, breast, bone, lung and brain cancer, many types of carcinoma and soft tissue sarcomas

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Biosimilars in Phase III Development

The following table describes Sandoz's biosimilar projects that are in Phase III development:

Project/product	Common name	Mechanism of action	Potential indication/ indications	Therapeutic areas	Route of administration
EP2006	filgrastim	Granulocyte colony-stimulating factor	Chemotherapy-induced neutropenia; mobilization of peripheral blood progenitor cells and others (same as originator)	Oncology	Subcutaneous and intravenous
GP2013	rituximab	Anti-CD20 antibody	Non-Hodgkin lymphoma, chronic lymphocytic leukemia, rheumatoid arthritis, granulomatosis with polyangiitis (also known as Wegener's granulomatosis), and microscopic polyangiitis and others (same as originator)	Oncology and Immunology	Intravenous
GP2015	etanercept	TNF-α inhibitor	Arthritidies (rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis), plaque psoriasis and others (same as originator)	Immunology	Subcutaneous
GP2017	adalimumab	TNF-α inhibitor	Arthritidies (rheumatoid arthritis, ankylosing spondylitis, psoriatic arthritis), plaque psoriasis and others (same as originator)	Immunology	Subcutaneous
HX575*	epoetin alfa	Erythropoiesis-stimulating agent	Chronic kidney disease, chemotherapy-induced anemia and others (same as originator)	Oncology and Nephrology	Subcutaneous and intravenous
HX575 s.c.**	epoetin alfa	Erythropoiesis-stimulating agent	Chronic kidney disease	Oncology and Nephrology	Subcutaneous
LA-EP2006	pegfilgrastim	Pegylated granulocyte colony-stimulating factor	Chemotherapy-induced neutropenia and others (same as originator)	Oncology	Subcutaneous

* Planned submission for US.

** Planned submission for EU (extension nephrology). Approved as *Binocrit* since 2007.

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Principal Markets

The two largest generics markets in the world the US and Europe are the principal markets for Sandoz, although Sandoz sells products in more than 140 countries. The following table sets forth the aggregate 2013 net sales of Sandoz by region:

Sandoz	2013 Net Sales to third parties	
	$ millions	%
United States	2,821	31
Americas (except the United States)	603	7
Europe	4,596	50
Rest of the World	1,139	12
Total	**9,159**	**100**

	$ millions	%
Established Markets*	6,625	72
Emerging Growth Markets*	2,534	28
Total	**9,159**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Many Sandoz products are used for chronic conditions that require patients to consume the product over long periods of time, from months to years. Sales of our anti-infective products are subject to seasonal variation. Sales of the vast majority of our other products are not subject to material changes in seasonal demand.

Production

The goal of our supply chain strategy is to produce and distribute high-quality products efficiently. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials.

We manufacture and package our Sandoz products at 45 manufacturing sites across 19 countries, supplying more than 140 countries globally. Among these, our principal production facilities are located in Barleben, Germany; Kundl and Unterach, Austria; Menges and Ljubljana, Slovenia; Broomfield, Colorado; Wilson, North Carolina; Stryków, Poland; Kalwe and Mahad, India; Boucherville, Canada; Cambé, Brazil; Gebze and Syntex, Turkey; and Hicksville and Melville, New York.

Active pharmaceutical ingredients are manufactured in our own facilities or purchased from third-party suppliers. We maintain state-of-the-art and cost-competitive processes within our own production network. Those processes include fermentation, chemical syntheses and precipitation processes, such as sterile processing. Many follow-on biologics are manufactured using recombinant DNA derived technology, by which a gene is introduced into a host cell, which then produces a human protein. This manufacturing process requires sophisticated technical expertise. We are constantly working to improve current, and to develop new, manufacturing processes.

Where possible, our policy is to maintain multiple supply sources so that the business is not dependent on a single or limited number of suppliers, and competitive material sourcing can be assured.

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However, our ability to do so may at times be limited by regulatory or other requirements. We monitor market developments that could have an adverse effect on the supply of essential active pharmaceutical ingredients. All active pharmaceutical ingredients we purchase must comply with high quality standards.

We obtain agricultural, chemical and other raw materials from suppliers around the world. The raw materials we purchase are generally subject to market price fluctuations. We seek to avoid these fluctuations, where possible, through the use of long-term supply contracts. We also proactively monitor markets and developments that could have an adverse effect on the supply of essential materials. All raw materials we purchase must comply with our quality standards. For some products and raw materials, we may also rely on a single source of supply.

In November 2011, we received a Warning Letter from the FDA with respect to three of our Sandoz Division's facilities in Broomfield, Colorado; Wilson, North Carolina; and Boucherville, Canada. The letter followed inspections at all three sites in the course of 2011, and raised concerns regarding these facilities' compliance with FDA cGMP regulations. The FDA observations in the letter related primarily to general documentation, validation and investigation practices. It stated that until the FDA confirms that the deficiencies have been corrected, the FDA can recommend that any pending applications or supplements listing Novartis affiliates as a drug manufacturer not be approved. In addition, the FDA may refuse requests to issue export certificates to our Sandoz US affiliate, or import certificates to our Sandoz Canada affiliate. The letter further states that other federal agencies may take the Warning Letter into account when considering the award of contracts.

In May 2013 we received a Warning Letter from the FDA concerning the oncology injectables manufacturing facility in Unterach, Austria. The letter contained two observations which followed an FDA inspection at the site in October 2012, and are related to historical visual inspection practices for products manufactured at the site.

We are collaborating with the FDA to correct all concerns raised in the Warning Letters, and to ensure that our products are safe and effective and meet the highest quality standards. Inspections conducted in 2013 at all three North American facilities have confirmed our progress on the committed actions. During the fourth quarter of 2012, the FDA formally notified Sandoz that the compliance status for the Broomfield, Colorado site was upgraded. In January 2014, the FDA formally notified Sandoz that the compliance status for the Boucherville, Canada site was upgraded. Work continues on closing out committed actions across the sites.

Our Sandoz Division has experienced significant supply interruptions in the past, and there can be no assurance that supply will not be interrupted again in the future as a result of unforeseen circumstances. The manufacture of our products is complex and heavily regulated, making supply never an absolute certainty. If we or our third-party suppliers fail to comply fully with regulations or other unforeseen challenges occur, then there could be a product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of business interruptions or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues and maintain continuous supply if such issues arise.

Marketing and Sales

Sandoz sells a broad portfolio of generic pharmaceutical products to wholesalers, pharmacies, hospitals and other healthcare outlets. Sandoz adapts its marketing and sales approach to local decision making processes, depending on the structure of the market in each country.

In response to rising healthcare costs, many governments and private medical care providers, such as health maintenance organizations, have instituted reimbursement schemes that favor the substitution of bioequivalent generic products for patented pharmaceutical products. In the US, statutes have been enacted by virtually all states that permit or require pharmacists to substitute a less expensive generic product for the brand-name version of a drug that has been prescribed to a patient. Generic use is growing

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in Europe, but penetration rates in many EU countries (as a percentage of volume) remain well below those in the US. Legislative or regulatory changes can have a significant impact on our business in a country. In Germany, for example, the generic market is in transition and healthcare reforms have increasingly shifted decision making from physicians to insurance funds.

Our Anti-Infectives business supplies Retail Generics and the pharmaceutical industry worldwide with active pharmaceutical ingredients and intermediates, mainly in the field of antibiotics.

Our Biopharmaceuticals business operates in an emerging business environment. Regulatory pathways for approving biosimilar products are either relatively new or still in development, and policies have not yet been fully defined or implemented for the automatic substitution and reimbursement of biosimilars in many markets, including the US. As a result, in many of these markets, including the US, our biosimilar products are marketed as branded competitors to the originator products.

Competition

The market for generic products is characterized by increasing demand for high-quality pharmaceuticals that can be marketed at lower costs due to comparatively minimal initial research and development investments. Increasing pressure on healthcare expenditures and numerous patent and data exclusivity period expirations have created a favorable market environment for the generics industry. This positive market trend, however, brings increased competition among the companies selling generic pharmaceutical products, leading to ongoing price pressure on generic pharmaceuticals.

In addition, research-based pharmaceutical companies have responded to increased competition from generic products by licensing their patented products to generic companies (the so-called "authorized generic"). By doing so, research-based pharmaceutical companies participate in the conversion of their patented product once generic conversion begins. Consequently, generic companies that were not in a position to compete on a specific product may enter the generic market using the innovator's product. In the US, the authorized generic is not subject to the US Hatch-Waxman Act rules regarding exclusivity (see " Regulation"). The company that launches an authorized generic typically launches its product at the same time as the generic exclusivity holder. While this may serve as a business opportunity to Sandoz when our Pharmaceuticals Division's products lose patent protection, this tends to reduce the value of the exclusivity for the company that invested in creating the first generic medicine to compete with the originator product. Furthermore, certain research-based companies continually seek new ways to protect their market franchise and to decrease the impact of generic competition. For example, some research-based pharmaceutical companies have reacted to generic competition by decreasing the prices of their patented product, or engaging in other tactics to preserve the sales of their branded products, thus potentially limiting the profit that the generic companies can earn on the competing generic product.

Development and Registration

Before a generic pharmaceutical may be marketed, intensive technical as well as clinical development work must be performed to demonstrate, in bio-availability studies, the bio-equivalency of the generic product to the reference product. Nevertheless, research and development costs associated with generic pharmaceuticals generally are much lower than those of the originator pharmaceuticals, as no clinical trials on dose finding and efficacy must be performed by the generic company. As a result, pharmaceutical products for which the patent and data exclusivity period has expired can be offered for sale at prices often much lower than those of products protected by patents and data exclusivity, which must recoup substantial basic research and development costs through higher prices over the life of the product's patent and data exclusivity period.

For biosimilar products, the regulatory pathways for approving such products are still in development, or pending final implementation, in many countries outside Europe. However, at least for certain

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biopharmaceutical products, a certain number of carefully targeted clinical trials in patients to determine safety and efficacy do appear to be required. Sandoz has successfully registered and launched the first biosimilar (or biosimilar type) product in Europe, the US, Canada, Japan, Taiwan, Australia and several Latin American countries, as well as two additional products in Europe.

Currently, the affiliates of the Sandoz Division employ more than 2,600 Development and Registration staff who explore alternative routes for the manufacture of known compounds and develop innovative dosage forms of well-established medicines. These associates are based worldwide, including major facilities in Holzkirchen and Rudolstadt, Germany; Kundl, Schaftenau and Unterach, Austria; Ljubljana and Menges, Slovenia; Boucherville, Canada; and East Hanover, New Jersey. In 2013, Sandoz expensed $0.8 billion (on a core basis $0.8 billion) in product development, which amounted to 9% of the division's net sales. Sandoz expensed $0.7 billion (on a core basis $0.7 billion, as a result, in part, of a decrease of a contingent consideration liability related to a business combination) and $0.6 billion (on a core basis $0.7 billion) in 2012 and 2011 respectively.

Regulation

The Hatch-Waxman Act in the US (and similar legislation in the EU and in other countries) eliminated the requirement that generic pharmaceutical manufacturers repeat the extensive clinical trials required for originator products, so long as the generic version could be shown in bioavailability studies to be of identical quality and purity, and to be therapeutically equivalent to the reference product.

In the US, the decision whether a generic pharmaceutical is bioequivalent to the original patented product is made by the FDA based on an Abbreviated New Drug Application (ANDA) filed by the generic product's manufacturer. The process typically takes nearly two years from the filing of the ANDA until FDA approval. However, delays can occur if issues arise regarding the interpretation of bioequivalence study data, labeling requirements for the generic product, or qualifying the supply of active ingredients. In addition, the Hatch-Waxman Act requires a generic manufacturer to certify in certain situations that the generic product does not infringe on any current applicable patents on the product held by the innovator, or to certify that such patents are invalid or the product is non-infringing. This certification often results in a patent infringement lawsuit being brought by the patent holder against the generic company. In the event of such a lawsuit, the Hatch-Waxman Act imposes an automatic 30-month delay in the approval of the generic product in order to allow the parties to resolve the intellectual property issues. For generic applicants who are the first to file their ANDA containing a certification claiming non-infringement or patent invalidity, the Hatch-Waxman Act provides those applicants with 180 days of marketing exclusivity to recoup the expense of challenging the innovator patents. However, generic applicants must launch their products within certain time frames or risk losing the marketing exclusivity that they had gained by being a first-to-file applicant.

In the EU, decisions on the granting of a marketing authorization are made either by the EMA under the Centralized Procedure, or by a single Member State under the national or decentralized procedure. See " Pharmaceuticals Regulation European Union." Companies may submit Abridged Applications for approval of a generic medicinal product based upon its "essential similarity" to a medicinal product authorized and marketed in the EU following the expiration of the product's data exclusivity period. In such cases, the generic company is able to submit its Abridged Application based on the data submitted by the medicine's innovator, without the need to conduct extensive Phase III clinical trials of its own. For all products that received a marketing authorization in the EU after late 2005, the Abridged Application can be submitted throughout the EU. However, the data submitted by the innovator in support of its application for a marketing authorization for the reference product will be protected for ten years after the first grant of marketing authorization in all Member States, and can be extended for an additional year if a further innovative indication has been authorized for that product, based on pre-clinical and clinical trials filed by the innovator that show a significant clinical benefit in comparison to the existing therapies.

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Intellectual Property

We take all reasonable steps to ensure that our generic products do not infringe valid intellectual property rights held by others. Nevertheless, originating companies commonly assert patent and other intellectual property rights in an effort to delay or prevent the launch of competing generic products. As a result, we can become involved in significant litigation regarding our generic products. If we are unsuccessful in defending these suits, we could be subject to injunctions preventing us from selling our generic products and to damages, which may be substantial.

Wherever possible, our generic products are protected by our own patents. Among other things, patents may cover the products themselves, including the product's formulation, or the processes for manufacturing a product. Patents also may cover particular uses of a product, such as its use to treat a particular disease or its dosage regimen. We seek the broadest possible protection for significant product developments in all major markets.

VACCINES AND DIAGNOSTICS

Vaccines and Diagnostics consists of two activities: Vaccines and Diagnostics. Following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., for approximately $1.7 billion in cash, the segment now consists only of Vaccines. Vaccines researches, develops, manufactures, distributes and sells human vaccines worldwide. Its products include meningococcal, influenza, pediatric, adult and travel vaccines. Diagnostics researched, developed, distributed and sold blood testing and molecular diagnostics products. As of December 31, 2013, the Vaccines and Diagnostics Division employed 6,997 full-time equivalent associates worldwide in 34 countries. In 2013, the Vaccines and Diagnostics Division had consolidated net sales of $2.0 billion representing 3% of total Group net sales.

The current product portfolio of our Vaccines and Diagnostics Division includes more than 15 marketed products. In addition, the division's portfolio of development projects includes more than 15 potential new products in various stages of clinical development.

The Novartis meningococcal franchise is expected to be a cornerstone of future growth for the division. Meningococcal disease causes approximately 50,000 deaths a year globally. Because the vast majority of infections are caused by five serogroups A, B, C, W-135 and Y and the distribution of strains varies greatly over time and location, we are working to deliver vaccines with broad coverage and the potential to protect all age groups at risk.

In January 2013, *Bexsero*, the Novartis Meningococcal Group B Vaccine (rDNA, component, adsorbed) received EU approval, following a positive opinion from the CHMP in November 2012. With this approval *Bexsero* became the first broad coverage vaccine to help prevent a leading cause of bacterial meningitis and septicemia in Europe. Global incidence of invasive meningococcal Group B disease (MenB) is estimated to be between 20,000 and 80,000 cases per year, with an approximate 10% fatality rate. In the UK, MenB is the cause of the majority (approximately 55%) of all bacterial meningitis and septicemia, and the cause of approximately 96% of such cases in infants. *Bexsero* received regulatory approval in Australia in August 2013 and has also been submitted for approval to health authorities in certain other countries. We are working with health authorities to provide access to *Bexsero* as soon as possible.

In July 2013, the UK Joint Commission on Vaccination and Immunisation (JCVI) released its interim recommendation regarding *Bexsero*, which advised against the inclusion of *Bexsero* in the country's National Immunisation Programme (NIP) based on cost effectiveness concerns. After multiple stakeholder responses to the interim recommendation, the JCVI issued a statement in October 2013, confirming that it would conduct further analyses before making a final recommendation on the inclusion of *Bexsero* in the NIP.

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Menveo (MenACWY-CRM), a quadrivalent conjugate vaccine for the prevention of invasive meningococcal disease caused by the A, C, Y and W-135 serogroups of the bacteria, was approved in 2010 in the US for use in individuals 11-55 years old and in the EU for individuals 11 years and older. In 2011, *Menveo* gained approval for use in individuals 2-10 years old in the US, and in 2012 gained approval in the EU for individuals 2 years and older. In 2013, the FDA expanded the approval of *Menveo* for the prevention of meningococcal disease in infants and toddlers from 2 months of age. With this expanded indication, pediatricians in the US can now offer a single vaccine to help protect infants as young as two months of age, children and adolescents against four of the five most common serogroups that cause meningococcal disease.

Influenza vaccines are an important franchise of the division. Today, we are among the world's largest producers of influenza vaccines. Influenza vaccination is one of the most effective public health interventions, sparing millions of people from complications, including death, from this infectious disease. In September 2013, Novartis began shipping *Flucelvax,* the first cell-culture derived influenza vaccine approved in the US, to help protect adults 18 years and older against seasonal influenza, to retailers and physicians in the US. Cell-culture technology marks the most significant advance in influenza vaccine manufacturing in the US in more than 40 years, and is an alternative to traditional egg-based production. *Flucelvax* does not contain any preservatives, such as thimerosal, or antibiotics.

In 2013, Novartis announced that it would deliver more than 30 million doses of its seasonal influenza vaccines *Fluvirin* and *Flucelvax* to US customers for the 2013/2014 season. These doses were shipped in time for the start of public vaccination programs. Early arrival of seasonal influenza vaccines ensures that healthcare professionals are equipped to provide the earliest possible vaccination against influenza.

Young children and older adults are among the most vulnerable to influenza. *Fluad*, our adjuvanted seasonal influenza vaccine, has been approved for more than a decade in Europe to enhance the immune response in older adults, helping to overcome their naturally occurring immune vulnerability and enabling effective protection against influenza.

Novartis has been awarded various contracts by the US Department of Health and Human Services (HHS) including a (pre)pandemic preparedness contract and an Advanced Development and Manufacturing (ADM) Center contract. Under the terms of the ADM contract, our production facility in Holly Springs, North Carolina will provide late-stage development and manufacturing expertise and capabilities to support HHS-driven projects, including development of new biodefense agents and rapid manufacturing response in the event of a public health emergency. The (pre)pandemic preparedness contract was used to support activities initiated by Novartis to develop a new vaccine for H7N9, a strain of avian influenza that emerged in China in early 2013. In addition, Novartis remains dedicated to working with the World Health Organization and other stakeholders to support global pandemic preparedness, including affordable and equitable access to pandemic vaccines for developing countries.

In 2012, Novartis informed the WHO and other public health partners that it would cease oral polio vaccine (OPV) manufacturing by 2013. Novartis did continue to produce and deliver oral polio vaccines to UNICEF, PAHO and individual countries in 2013, and supply commitments for 2013 were fulfilled as contracted. Novartis has been proud to have provided a significant proportion of the global supply of OPV for more than 20 years and is a longtime supporter of the Global Polio Eradication Initiative. Novartis will continue to support efforts to eradicate polio and other key global immunization initiatives.

In 2011, Novartis Vaccines completed the acquisition of an 85% stake in the vaccines company Zhejiang Tianyuan Bio-Pharmaceutical Co., Ltd. Zhejiang Tianyuan offers marketed vaccine products in China. We collaborate with Tianyuan on strengthening our existing product portfolio and expanding our innovation capabilities. This acquisition is also expected to facilitate the introduction of additional Novartis vaccines into China where there continues to be tens of thousands of new cases of vaccine-preventable diseases each year.

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Vaccines and Diagnostics Division Products

The summary and the tables that follow describe key marketed products and potential products in development in our Vaccines and Diagnostics Division. Subject to required regulatory approvals and, in certain instances, contractual limitations, we intend to sell our marketed products throughout the world. However, our Vaccines and Diagnostics Division products are not currently available in every country. Regarding our products in development, these products and indications are in various stages of development throughout the world. For some products, the development process is ahead in the US; for others, development in one or more other countries or regions is ahead of that in the US. Due to the uncertainties associated with the development process, and due to regulatory restrictions in some countries, it may not be possible to obtain regulatory approval for any or all of the new products referred to in this Form 20-F. See " Regulation" for further information on the approval process.

Vaccines Key Marketed Products

Product	Indication
Influenza Vaccines	
Agrippal	A surface antigen, inactivated, seasonal influenza vaccine for adults and children above six months of age.
Fluad	A surface antigen, inactivated, seasonal influenza vaccine containing the proprietary *MF59* adjuvant for the elderly
Fluvirin	A surface antigen, inactivated, seasonal influenza vaccine for adults and children four years of age and up
Optaflu (EU)	Cell culture-based, surface antigen, inactivated, influenza vaccine for adults 18 years of age and up
Flucelvax (US)	Cell culture-based surface antigen, inactivated, seasonal flu influenza vaccine indicated for those aged 18 years and older
Meningococcal Vaccines	
Bexsero	Meningococcal Group B Vaccine [rDNA component adsorbed]
Menjugate	Meningococcal C vaccine for children 2 months of age and up
Menveo	Meningococcal A, C, W-135 and Y vaccine for children, adolescents and adults between 2 months and 55 years of age
Travel Vaccines	
Encepur Children/*Encepur* Adults	Tick-borne encephalitis vaccine for children 1-11 years of age and for adults 12+ years of age
Ixiaro[(1)]	Prophylactic vaccine against Japanese encephalitis virus
Rabipur/Rabavert	Vaccine for rabies, which can be used before or after exposure (typically animal bites) in all age groups
Pediatric Vaccines	
Quinvaxem[(2)]	Fully liquid pentavalent vaccine combining antigens for protection against five childhood diseases: diphtheria, tetanus, pertussis (whooping cough), hepatitis B and Haemophilus influenzae type b for children above 6 weeks of age

(1) In collaboration with Valneva.

(2) In collaboration with Crucell.

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Vaccines Key Products in Development

Project/product	Common name	Vaccine Type	Planned submission dates/Current phase
Acellular Pertussis combination	Tdap vaccine	Pediatric	≥2015/I
Bexsero US	Meningococcal B vaccine	Meningitis	≥2015/II
C. difficile[1]	*C. difficile* vaccine	Hospital Infections	≥2015/I
Fluad US	Seasonal influenza vaccine	Seasonal Influenza	2014/III
Flucelvax pediatric US	Seasonal influenza vaccine	Seasonal Influenza	≥2015/III
Flucelvax QIV	Seasonal influenza vaccine	Seasonal Influenza	≥2015/III
Group B *streptococcus*	Group B *streptococcus* vaccine	Maternal	≥2015/II
H5N1 flu cell culture vaccine[2]	Pandemic influenza vaccine	Pandemic	≥2015/II
H7N9[2]	H7N9 vaccine	Pandemic Influenza	≥2015/Not applicable
Human immunodeficiency virus (HIV)[3]	HIV vaccine	HIV	≥2015/I
MenABCWY	Meningococcal A, B, C, W and Y vaccine	Meningitis	≥2015/II
Menjugate liquid	Meningococcal C vaccine	Meningitis	2013/Submission
P. aeruginosa[1]	*P. aeruginosa* vaccine	Hospital Infections	≥2015/II
Quadrivalent influenza vaccine pediatric adjuvanted	Seasonal influenza vaccine	Seasonal Influenza	≥2015/III
S. aureus	*S. aureus* vaccine	Hospital Infections	≥2015/I

(1) Collaboration with Valneva.

(2) Collaboration with United States Department of Health and Human Services.

(3) Collaboration with United States National Institutes of Health.

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Principal Markets

The principal markets for our Vaccines and Diagnostics Division include the US and Europe. The following table sets forth the aggregate 2013 net sales of the Vaccines and Diagnostics Division by region:

Vaccines and Diagnostics	2013 Net Sales to third parties	
	$ millions	%
United States	821	41
Americas (except the United States)	184	9
Europe	654	33
Rest of the World	328	17
Total	**1,987**	**100**

	$ millions	%
Established Markets*	1,512	76
Emerging Growth Markets*	475	24
Total	**1,987**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Sales of certain vaccines, including influenza and tick borne encephalitis vaccines, are subject to seasonal variation. Sales of the majority of our other products are not subject to material changes in seasonal demand.

Research and Development

In 2013, the Vaccines and Diagnostics Division expensed $0.5 billion (on a core basis $0.5 billion) in research and development, which amounted to 24% of the division's net sales. The Vaccines and Diagnostics Division expensed $0.5 billion (on a core basis $0.4 billion) and $0.5 billion (on a core basis $0.5 billion) in research and development in 2012 and 2011 respectively.

While research and development costs for vaccines traditionally have not been as high as for pharmaceuticals, a robust clinical program including Phase I to Phase III must be performed by the manufacturer to obtain a license for commercialization. See " Pharmaceuticals Compounds in Development" and " Pharmaceuticals Research and Development." At each step, there is a substantial risk that we will not achieve our goals. In such an event, we may decide or be required to abandon a product or program in which we have made a substantial investment.

Production

The goal of our supply chain strategy is to produce and distribute high quality products efficiently. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For some products and raw materials, we may also rely on a single source of supply.

We manufacture our vaccines products at facilities in Europe, the US and Asia. Our principal production facilities are located in Liverpool, UK; Marburg, Germany; Siena and Rosia, Italy;

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Ankleshwar, India; and Holly Springs, North Carolina. We continue to invest and upgrade our existing sites to ensure that previously initiated remediation efforts are completed and meet quality standards.

Each year new seasonal influenza vaccines need to be produced in order to help induce protection against the current circulating strains of the virus, which can change from year to year. Global surveillance of influenza viruses is conducted throughout the year by the World Health Organization (WHO) Influenza Surveillance Network, which provides information on currently circulating strains and identifies the appropriate strains to be included in next season's influenza vaccine. Each year, the EMA and the US Centers for Disease Control then confirm the vaccine composition for the coming season for the northern hemisphere and the Australian Therapeutic Goods Administration for the southern hemisphere. There can be no guarantee that the division will succeed in producing and gaining approval of an updated influenza vaccine within the timeframes necessary to commercialize the vaccine for the applicable flu season.

The manufacture of our products is complex and heavily regulated, which means that supply is never guaranteed. Like our competitors, our Vaccines and Diagnostics Division has faced significant manufacturing issues. If we or our third-party suppliers fail to comply fully with regulations then there could be a product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of such events or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues when they arise.

Marketing and Sales

Our main Vaccines marketing and sales organizations are based in Switzerland, Germany, UK, Italy and the US. We are also seeking to expand operations in China, India, Europe and Latin America. In the US, we market influenza, meningococcal, Japanese encephalitis and rabies vaccines through a network of wholesalers and distributors as well as direct to key customers. Direct sales efforts are focused on public health and distributor channels, and on non-traditional channels, such as employers, chain drug headquarters and service providers.

Competition

The global market for products of the type sold by our Vaccines and Diagnostics Division is highly competitive, and we compete against other major international corporations with substantial financial and other resources. Competition within the industry is intense and extends across a wide range of commercial activities, including pricing, product characteristics, customer service, sales and marketing, and research and development.

There is no guarantee that any product, even with patent protection, will remain successful if another company develops a new product offering significant improvements over existing products.

Regulation

Our vaccines products are subject to essentially the same regulatory procedures as are the products of our Pharmaceuticals Division. See " Pharmaceuticals Regulation." In the US, a company seeking approval of a vaccine submits a Biologics License Application (BLA) for the vaccine, rather than an NDA. Subsequently, the BLA follows substantially the same path for approval as does an NDA. In addition, license applications for seasonal flu vaccines must be submitted annually.

Intellectual Property

We attach great importance to patents, trademarks, and know-how in order to protect our investment in research and development, manufacturing and marketing. It is our policy to seek the broadest possible protection for significant product developments in all major markets. Among other things, patents may cover the products themselves, including the product's active substance and its formulation. Patents may also cover the processes for manufacturing a product, including processes for manufacturing intermediate substances used in the manufacture of the products. Patents may also cover particular uses of a product, such as its use to prevent a particular disease, or its dosage regimen.

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The protection offered by such patents extends for varying periods depending on the legal life of patents in the various countries. The protection afforded, which may also vary from country to country, depends upon the type of patent and its scope of coverage. We monitor our competitors and vigorously challenge infringements of our intellectual property.

CONSUMER HEALTH

Consumer Health is a leader in the research, development, manufacturing and marketing of a wide range of competitively differentiated products that restore, maintain or improve the health and well-being of consumers, as well as pets and livestock. The business of Consumer Health is conducted by a number of affiliated companies throughout the world. Consumer Health consists of the following two divisions:

OTC (over-the-counter medicines)

Animal Health

Each division has its own research, development, manufacturing, distribution and selling capabilities. However, neither division is material enough to the Group to be separately disclosed as a segment. As of December 31, 2013, the affiliates of Consumer Health employed 9,213 full-time equivalent associates worldwide. In 2013, the affiliates of Consumer Health achieved consolidated net sales of $4.1 billion, which represented 7% of the Group's total net sales.

The divisions of Consumer Health place considerable emphasis on the development of strong, consumer-oriented and trustworthy brands. To deliver accelerated sales growth and to achieve leadership positions in the fields in which we compete, the divisions of Consumer Health seek to give voice to the consumer and to determine the needs and desires of consumers.

In the dynamic world of consumer healthcare, consumers are becoming more knowledgeable about health and the benefits of self-medication. The success of each division depends upon its ability to anticipate and meet the needs of consumers and health professionals worldwide.

The following is a description of the two Consumer Health divisions:

OTC (over-the-counter medicines) is a leader in offering products designed for self-care and prevention of common medical conditions and ailments to enhance people's overall health and well-being. The business of OTC is conducted by a number of affiliated companies in more than 50 countries. The OTC business focuses on a group of strategic global brands in leading product categories that include treatments for cough/cold/respiratory ailments (e.g., *Theraflu* and *Otrivin*) and pain relief (e.g., *Excedrin* and *Voltaren*), as well as products for digestive health (e.g., *Benefiber* and *Prevacid24HR*), dermatology (e.g., *Lamisil* and *Fenistil*), and smoking cessation (*Nicotinell*).

Animal Health offers products and services to save, prolong and improve animal lives, focusing on both companion and farm animals (including cultivated fish). The business of Animal Health is conducted by affiliated companies in approximately 40 countries. Animal Health has a dedicated research and development team that benefits from synergies with other Novartis businesses, most notably research in the Pharmaceuticals Division. Key products for companion animals include *Atopica* (atopic dermatitis management), *Deramaxx* and *Onsior* (pain relief), *Fortekor* (heart failure in dogs, chronic renal insufficiency in cats), and *Sentinel/Milbemax/Interceptor* (intestinal parasite control and heartworm prevention), while leading farm animal products include the therapeutic anti-infective *Denagard*, an effective broad-spectrum antimicrobial used to treat and control bacteria in swine, *CLiK,* an effective insect growth regulator used to control blowfly strike in sheep, cattle vaccines used to prevent respiratory and reproductive diseases in beef and dairy cattle, and *Zolvix*, a sheep drench representing the first new sheep anthelmintic class in 25 years. Aquaculture products include vaccines and treatments mainly used in salmon farming.

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Principal Markets

The principal markets for Consumer Health are the US and Europe. The following table sets forth the aggregate 2013 net sales of Consumer Health by region:

Consumer Health	2013 Net Sales to third parties	
	$ millions	%
United States	847	21
Americas (except the United States)	420	10
Europe	2,004	49
Rest of the World	793	20
Total net sales	**4,064**	**100**

	$ millions	%
Established Markets*	2,636	65
Emerging Growth Markets*	1,428	35
Total net sales	**4,064**	**100**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Sales of our OTC Division are marked by a high degree of seasonality, with our cough, cold and respiratory brands significantly affected by the timing and severity of the annual cold and flu and allergy seasons. Sales of our Animal Health Division's livestock segment can also fluctuate seasonally, and can be significantly affected by climatic and economic conditions, or by changing health or reproduction rates of animal populations. Sales of most of our other products are not subject to material changes in seasonal demand.

Production

The goal of our supply chain strategy is to produce and distribute high quality products efficiently. The manufacture of our products is heavily regulated by governmental health authorities around the world, including the FDA. In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For some products and raw materials, we may also rely on a single source of supply.

OTC: Products for our OTC Division are produced by the division's own plants, strategic third-party suppliers and other Group plants (which are predominantly owned and operated by the Pharmaceuticals Division). The primary OTC plants are located in Lincoln, Nebraska; Nyon, Switzerland; Humacao, Puerto Rico; and Jamshoro, Pakistan.

Animal Health: Approximately 80% of our production volume is manufactured by third parties and Novartis affiliates in other divisions. Animal Health has production facilities of its own located around the world, with main sites in Wusi Farm, China; Dundee, UK; Larchwood, Iowa; Charlottetown, Canada; and Huningue, France.

While production practices may vary by division, we generally obtain our raw materials, intermediates and active ingredients from suppliers around the world. The raw materials, intermediates and active ingredients we purchase are generally subject to market price fluctuations. We seek to avoid these fluctuations, where possible, through the use of long-term supply contracts. We also proactively monitor

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markets and developments that could have an adverse effect on the supply of essential materials. All raw materials we purchase must comply with our quality standards.

In December 2011, we suspended operations and shipments from the OTC Division facility located at Lincoln, Nebraska, which also produces certain products for our Animal Health Division. This action was taken to accelerate maintenance and other improvement activities at the site. Subsequently, in 2012 and 2013, we recalled certain OTC Division products that were produced at the Lincoln facility. We made significant progress in 2012 and 2013 in the remediation of quality issues at Lincoln, and have out-sourced the production of certain Lincoln products, while discontinuing others. We resumed commercial production of the Animal Health product *Sentinel* at the Lincoln facility in 2013, and the product was re-launched to the US veterinary market in April 2013. In November 2013, we also resumed shipment of the OTC product *Excedrin* to the US market from Lincoln following the FDA's October 2013 inspection of the site which resulted in no Form 483 observations. However, as of the date of this Form 20-F, it is not possible to determine when the plant will resume full operations. As a result of the manufacturing issues at Lincoln, we have suffered and may continue to suffer significant losses in sales and market share. In addition, we have been required to expend considerable resources on the remediation of the issues at this site. Should we fail to complete the planned improvements at the site in agreement with FDA in a timely manner, then we may suffer significant additional losses in sales and drainage of resources, and we could be subject to legal action without further notice.

As a result of the activities at Lincoln, Consumer Health has experienced, and continues to experience, significant supply interruptions, and there can be no assurance that supply will not be interrupted again in the future as a result of unforeseen circumstances. The manufacture of our products is complex and heavily regulated, which means that supply is never guaranteed. If we or our third-party suppliers fail to comply fully with regulations then there could be another product recall or other shutdown or disruption of our production activities. We have implemented a global manufacturing strategy to maximize business continuity in case of business interruptions or other unforeseen catastrophic events. However, there can be no guarantee that we will be able to successfully manage such issues when they arise.

Marketing and Sales

OTC: OTC aims to be a leading global participant in fulfilling the needs of patients and consumers for self-care. Strong leading brands and products, innovation led by a worldwide research and development organization, and in-house marketing and sales organizations are key strengths in pursuing this objective. We engage in general public relations activities, including media advertisements, brand websites and other direct advertisements of brands, to the extent permitted by law in each country. We distribute our products through various channels such as pharmacies, food, drug and mass retail outlets.

Animal Health: Animal Health's products are mostly prescription-only treatments for both farm and companion animals. The major distribution channel is veterinarians, either directly or through wholesalers of veterinary products. Primary marketing efforts are targeted at veterinarians using such marketing tools as targeted personal selling, printed materials, direct mail, advertisements, articles in the veterinary specialty press, and conferences and educational events for veterinarians. In addition, we engage in general public relations activities and media advertising, including brand websites and other direct advertisements of brands, to the extent permitted by law in each country.

Competition

The global market for products of the type sold by Consumer Health is highly competitive, and we compete against other major international corporations with substantial financial and other resources. Competition within the industry is intense and extends across a wide range of commercial activities, including pricing, product characteristics, customer service, sales and marketing, and research and development. Particularly in the US, our branded OTC products compete against "store brand" products

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that are made with the same active ingredients as ours. These products do not carry our trusted brand names, but they also do not carry the burden of the expensive advertising and marketing which helped to establish a demand for the product. As a result, the store brands may be sold at lower prices. In recent years, consumers have increasingly begun to purchase store brand OTC products instead of branded products.

Research and Development

OTC: At OTC, the focus of research and development activities is primarily on pain relief and cough/cold/respiratory treatments, as well as potential new therapeutic categories for the business. OTC also works closely with the Pharmaceuticals Division to evaluate appropriate products that can be switched from prescription to OTC status. The development of line extensions to leverage brand equities is also of high importance. These extensions can take many forms, including new flavors, new galenical forms and more consumer-friendly packaging.

Animal Health: Novartis Animal Health has dedicated research and development facilities in Switzerland, North America and Australia. The main focus for research is identification of potential new parasiticides and therapeutics in key areas of internal medicine. In addition, in the US and Canada, we devote resources to the quest for new pharmaceuticals and vaccines for farm animals and cultivated fish. Also, our researchers exploit synergy with other Novartis businesses and collaborate with external partners to develop veterinary therapeutics and vaccines. Drug delivery projects, some in collaboration with external partners, concentrate on key treatment areas and aim to improve efficacy and ease of use.

In 2013, Consumer Health expensed $0.3 billion (on a core basis $0.3 billion) in research and development, which amounted to 8% of the division's net sales. Consumer Health expensed $0.3 billion (on a core basis $0.3 billion) and $0.3 billion (on a core basis $0.3 billion) in research and development in 2012 and 2011 respectively.

Regulation

OTC: For OTC products, the regulatory process for bringing a new product to market consists of preparing and filing a detailed dossier with the appropriate national or international registration authority and obtaining approval of the applicable health authority. See " Pharmaceuticals Regulation." OTC and health authorities worldwide continue to evaluate the safety of marketed products and propose changes based on this ongoing monitoring. Dossier submissions can also be made to update safety and/or labeling information throughout a product's lifecycle. In the US, in addition to the NDA process, which also is used to approve prescription pharmaceutical products, an OTC product may be sold if the FDA has determined that the product's active ingredient is generally recognized as safe and effective. FDA makes this determination through a regulatory process known as the OTC Drug Review. In the OTC Drug Review, the FDA has established, in a series of monographs, the conditions under which particular active ingredients may be recognized as safe and effective for OTC use. Pharmaceutical companies can market products containing these active ingredients without the necessity of filing an NDA and going through its formal approval process, so long as the company complies with the terms of the published monograph. Outside the US, countries have their own regulatory processes for approving or allowing the sale of pharmaceutical products, including prescription, OTC, and switching from prescription to OTC status. These processes vary from country to country, but essentially are all built on the principle of requiring an assessment of product efficacy, quality and safety before any marketing activities can be undertaken. In addition, a process similar to the US monograph system exists in some countries, such as Canada and Japan.

Animal Health: The registration procedures for animal medicines are similar to those for human medicines. An animal drug application for product registration must be accompanied by extensive data on target animal and user safety, environmental fate and toxicology, efficacy in laboratory and clinical studies, information on manufacturing, quality control and labeling as well as on residues and food safety if

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applied to food-producing animals. In the US, animal health products are generally regulated by the FDA's Center for Veterinary Medicine. Certain product categories are regulated by the Environmental Protection Agency, and vaccines are under the control of the US Department of Agriculture. In the EU, veterinary medicinal products need marketing authorization from the competent authority of a member-state (national authorization) or from the EU Commission (community authorization) following either the Centralized Procedure, Mutual Recognition Procedure or the Decentralized Procedure. See " Pharmaceuticals Regulation."

Intellectual Property

Our Consumer Health divisions are strongly brand-oriented. As a result, we consider our trademarks to be of utmost value. Enforceable trademarks protect most of our brands in the majority of the markets where these brands are sold, and we vigorously protect these trademarks from infringement. Our most important trademarks are used in a number of countries. Local variations of these international trademarks are employed where legal or linguistic considerations require the use of an alternative. See also " Alcon Intellectual Property."

Wherever possible our products are protected by patents. Among other things, patents may cover the products themselves, including the product's active substance and its formulation. Patents may also cover the processes for manufacturing a product, including processes for manufacturing intermediate substances used in the manufacture of the products. Patents may also cover particular uses of a product, such as its use to treat a particular disease, or its dosage regimen. It is our policy to seek the broadest possible protection for significant product developments in all major markets.

Our Consumer Health divisions also sell products which are not currently covered by patents. Some of these products have never been patent-protected and others have lost protection due to patent expiry.

4.C Organizational Structure

See "Item 4. Information on the Company 4.A History and Development of Novartis," and "Item 4. Information on the Company 4.B Business Overview Overview."

4.D Property, Plants and Equipment

Our principal executive offices are located in Basel, Switzerland. Our divisions and business units operate through a number of affiliates having offices, research facilities and production sites throughout the world.

We generally own our facilities. However, some sites are leased under long-term leases. Some of our principal facilities are subject to mortgages and other security interests granted to secure indebtedness to certain financial institutions.

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The following table sets forth our major headquarters, production and research and development facilities.

Location/Division	Size of Site (in square meters)	Major Activity
Major facilities:		
Pharmaceuticals		
East Hanover, NJ	400,000	Division US headquarters, research and development
Basel, Switzerland St. Johann	200,000	Global Group headquarters, global division headquarters, research and development, production of drug substances and drug intermediates
Hyderabad, India	141,700	Drug safety and epidemiology, drug regulatory affairs, research and development
Stein, Switzerland	130,000	Production of sterile vials, pre-filled syringes and ampoules, and of inhalation capsules, tablets and transdermals, and of active pharmaceutical ingredients
Cambridge, MA	65,000	Global NIBR headquarters, research and development
Grimsby, UK	64,000	Production of drug substances and drug intermediates
Changshu, China	60,900	Production of drug substances and drug intermediates, research and development
Ringaskiddy, Ireland	60,000	Production of drug substances and drug intermediates
Taboao da Serra, Brazil	59,100	Production of capsules, tablets, syrups, suspensions and drop solutions, and secondary packaging activities for imported products
Kurtkoy, Turkey	52,000	Production and packaging of tablets and capsules

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Location/Division	Size of Site (in square meters)	Major Activity
Suffern, NY	46,000	Production of tablets, capsules, vials and inhalation products
Emeryville, CA	43,800	Research and development
Genome Valley, India	36,880	Research and development
Singapore	29,000	Production of bulk tablets
Basel, Switzerland Schweizerhalle	26,000	Production of drug substances and drug intermediates
Barbera, Spain	24,000	Production of tablets, capsules and inhalation products
Torre, Italy	24,000	Production of tablets and capsules
Wehr, Germany	24,000	Production of tablets, creams and ointments
Horsham, UK	21,000	Research and development
Beijing, China	19,700	Production of tablets, gels and capsules
Resende, Brazil	16,000	Production of drug substances and drug intermediates
Tokyo, Japan	15,800	Development and regulatory
Carlsbad, California	15,500	Molecular Diagnostics testing and services, clinical trial assay center
Sasayama, Japan	15,000	Production of tablets, sachets, capsules, powders, creams and suppositories, inhalation products, vials and pre-filled syringes.
Shanghai, China	14,200	Research and development
Morris Plains, NJ	14,000	Production of personalized medicine
San Carlos, California	14,000	Research and development, production of capsules for inhalation

Cairo, Egypt	12,400	Production of tablets, capsules, creams, liquids and sterile products

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Location/Division	Size of Site (in square meters)	Major Activity
Basel, Switzerland Klybeck	11,000	Production of drug substances and drug intermediates, research and development
Schaftenau, Austria	10,900	Production of vials
Huningue, France	8,600	Production of biopharmaceutical drug substances
Vacaville, California	7,400	Production of biopharmaceutical drug substances
Kent, UK	1,500	Development, production of cartridges for use in diagnostic tests
Alcon		
Fort Worth, Texas	252,800	Division headquarters, production, research and development for Ophthalmic Pharmaceuticals, Vision Care, Surgical
Johns Creek, Georgia	73,400	Production, research and development for Vision Care
Grosswallstadt, Germany	72,500	Production, research and development for Vision Care
Puurs, Belgium	55,000	Production for Ophthalmic Pharmaceuticals, Surgical
Singapore	50,000	Production for Ophthalmic Pharmaceuticals, Vision Care
Barcelona, Spain	41,100	Production for Ophthalmic Pharmaceuticals
Houston, Texas	36,300	Production for Surgical
Johor, Malaysia	35,000	Production for Vision Care
Pulau Batam, Indonesia	27,000	Production for Vision Care
Des Plaines, IL	27,000	Production for Vision Care
Huntington, West Virginia	24,600	Production for Surgical
Irvine, California	20,700	Production for Surgical

Sinking Spring, Pennsylvania	18,000	Production for Surgical
Lake Forest, California	17,100	Research and development for Surgical

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Location/Division	Size of Site (in square meters)	Major Activity
Mississauga, Canada	15,000	Production for Vision Care
Kaysersberg, France	14,800	Production for Ophthalmic Pharmaceuticals
Cork, Ireland	13,700	Production for Surgical
Erlangen, Germany	8,700	Research and development for Surgical
Sao Paulo, Brazil	8,400	Production for Ophthalmic Pharmaceuticals
Pressath, Germany	7,400	Production for Surgical
Aliso Viejo, California	7,300	Production, research and development for Surgical
Schaffhausen, Switzerland	5,500	Production, research and development for Surgical
Mexico City, Mexico	2,900	Production for Ophthalmic Pharmaceuticals
Cumming, Georgia	1,400	Production, research and development for Surgical
Neve Ilan, Israel	1,000	Production for Surgical
Sandoz		
Kundl and Schaftenau, Austria	449,000	Production of biotech products, anti-infectives, active drug substances, product development
Ljubljana, Slovenia	120,000	Production of broad range of finished dosage forms
Hicksville, NY	101,700	Production of dermatology products
Barleben, Germany	95,000	Production of broad range of finished dosage forms
Holzkirchen, Germany	72,300	Division headquarters, production of oral films, transdermal delivery systems, matrix patches, product development
Broomfield, CO	60,000	Production of broad range of finished dosage forms

Menges, Slovenia	58,000	Production of biotechnology products and active drug substances
Kalwe, India	48,000	Production of broad range of finished dosage forms

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Location/Division	Size of Site (in square meters)	Major Activity
Mahad, India	43,000	Production of active drug substances
Gebze, Turkey	42,000	Production of broad range of finished dosage forms
Rudolstadt, Germany	37,000	Production of inhalation technology, ophthalmics and nasal products, development
Cambé, Brazil	32,000	Production of broad range of finished dosage forms
Wilson, NC	31,000	Production of broad range of finished dosage forms
Boucherville, Canada	20,000	Production of injectable products, development
Stryków, Poland	20,000	Production of broad range of finished dosage forms
Melville, NY	15,800	Production of dermatology products
Unterach, Austria	15,000	Production of oncology injectables, development
Zhongshan, China	7,700	Production of tablets and oral solutions
East Hanover, NJ	6,000	Development
Vaccines and Diagnostics		
Siena/Rosia, Italy	110,000	Production, research and development for vaccines and bacteriology
Marburg, Germany	80,000	Production, research and development for vaccines and adjuvant, quality control for all vaccines products
Hangzhou, China	50,800	Production of vaccines
Holly Springs, NC	50,000	Production, research and development of vaccines and adjuvant
Liverpool, UK	26,000	Production of vaccines
Ankleshwar, India	11,000	Production of vaccines

Cambridge, MA	9,000	Division headquarters, virology research

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Location/Division	Size of Site (in square meters)	Major Activity
Consumer Health OTC		
Lincoln, NE	48,000	Production of solids and powders, research and development
Jamshoro, Pakistan	24,000	Production of solids, semi-solids and liquids
Nyon, Switzerland	15,000	Production of semi-solids and liquids, research and development
Parsippany, NJ	14,000	Division headquarters
Humacao, Puerto Rico	13,000	Production of solids
Hyderabad, India	3000	Research and development
Consumer Health Animal Health		
Wusi Farm, China	39,000	Production of insecticides, antibacterials, acaricides, powders
St. Aubin, Switzerland	26,000	Research on parasiticides and therapeutics for companion animals and farm animals
Larchwood, IA	13,000	Production, research and development of veterinary immunologicals
Dundee, UK	11,000	Production of liquid products
Greensboro, NC	10,200	North American division headquarters
Huningue, France	5,000	Production of tablets, creams, ointments, suspensions and liquids
Charlottetown, Canada	5,000	Production of veterinary vaccines for aquaculture
Victoria, Canada	4,500	Aquaculture vaccine research
Basel, Switzerland	4,200	Global division headquarters, research and formulation technology
Yarrandoo, Australia	3,000	Research primarily focused on farm animals

Puerto Varas, Chile	2,100	Research and development, warehouse space

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In the fourth quarter of 2010, we announced a Group-wide review of our manufacturing footprint. In 2013, and continuing into 2014, we continued to optimize our manufacturing footprint, bringing the total number of production sites that are in the process of being restructured or divested to 20. This has and is expected to enable us to reduce excess capacity and to shift strategic product to technology competence centers. We have recorded charges related to exits, impairment charges and inventory write-offs of $115 million in 2013, bringing the total charges to $515 million since the program began. As part of this initiative, our Alcon Division announced in 2013 that it would close several of its manufacturing plants and consolidate remaining production at other existing manufacturing sites. In addition, in January 2014, we announced the closing of the Pharmaceuticals manufacturing site in Suffern, New York. Restructuring costs for Suffern will be incurred from the first quarter of 2014 onwards.

Our St. Johann site in Basel, Switzerland, is our largest research site as well as the headquarters for the Group and for the Pharmaceuticals Division. A project was started in 2001, known as "Campus," with the aim of transforming the site into a center of knowledge, innovation and encounter with a primary emphasis on international corporate functions and research activities. At that time, changes needed to be made to the site, since it had originally been designed primarily for pharmaceuticals production, but Research and Development had come to account for a greater proportion of our activities there. The Campus project is progressing as planned. By the end of 2013, 14 new buildings had begun operations, seven of them laboratory buildings. Three further buildings are in the construction phase. These buildings are scheduled to open in 2014 and at the beginning of 2015. The current phase of the long-term redevelopment of our St. Johann site in Basel, Switzerland is expected to be finalized in 2015. Through December 31, 2013, the total amount paid and committed to be paid on the Campus project was $2.5 billion. We expect that, through 2015, we will spend more than $2.5 billion on Campus and the transfer of production facilities from St. Johann to other sites in the Basel region. Preparations for the next phase beyond 2015 are under discussion. We intend to fund these expenditures from internally developed resources.

In 2007, NIBR opened a start-up facility for our new R&D center in Shanghai, China (CNIBR). In 2008, we broke ground on Phase 1 of a new facility that was originally to be home to approximately 400 R&D scientists and approximately 400 other Pharmaceuticals Division personnel. In 2009, we announced that we would expand the scope of the site and invest $1 billion over the next five years to increase the size of our operations in Shanghai. Based on a re-evaluation of the site conducted in 2010, the current Phase 1 has been extended by two buildings to fulfill the requirements for the cross-divisional Shanghai campus to house 800 offices and 400 laboratory work places. As of December 31, 2013, major structural work has been completed, including significant parts of the mechanical, electrical and plumbing installations. Construction of the external facade and interior fit-out have begun. Through December 31, 2013, the total amount paid and committed to be paid on the CNIBR Project is $689 million.

In 2010, we announced that we would build new laboratory and office space for NIBR in Cambridge, Massachusetts on an area of land close to the existing NIBR research facilities on Massachusetts Avenue. In 2011 we finalized design plans for the new buildings, received necessary zoning changes from the city of Cambridge and began preparing the site for construction. Construction began on the site in April 2012, and at the end of 2013, the steel frames of the new buildings are complete. Through December 31, 2013, the total amount paid and committed to be paid on the NIBR Project is $664 million.

In 2010, we commenced a construction project on our Pharmaceuticals Division campus in East Hanover, New Jersey. This project is expected to continue through 2014. It involves construction of three new office buildings, a parking garage, and upgrades to the site entrances. The purpose of the project is to consolidate US Pharmaceuticals Division personnel on one site to drive innovation, collaboration and productivity. The consolidation is also expected to achieve long-term cost savings resulting from the elimination of off-campus leases. As of December 31, 2013, the total amount paid and committed to be paid on this project was $548 million.

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During 2012, the Pharmaceuticals Division commenced a series of projects in which we expect to invest over $300 million over the following five years. These projects are in the following three areas: implementation of a serialization product tracking program across its pharmaceutical operations network, providing a health, safety and environment / Good Manufacturing Practices upgrade for its milling and blending center at Stein, Switzerland, and for the upgrade of change control systems.

In the second quarter of 2012, Novartis announced the construction of a new state-of-the-art production facility to produce solid dosage form medicines for the Pharmaceuticals Division in Stein, Switzerland. We expect our investment in this facility to exceed CHF 500 million. The new facility is planned to replace an older facility which will be partially demolished by 2016. Stein is planned to be a technological competence center for both sterile and solid dosage form drugs, while Novartis plans to expand the site's strategic role as a key platform for global launches of new pharmaceutical products. Through December 31, 2013, the total amount paid and committed to be paid on this project is $432 million.

In the fourth quarter of 2012, we announced the planned construction of a new state-of-the-art biotechnology production site in Singapore with an investment valued at over $500 million. The new facility will focus on biological drug substance manufacturing based on cell culture technology. Groundbreaking happened in February 2013 and construction is underway. The site is expected to be fully operational in 2016. It will be co-located with the pharmaceutical production site based in Tuas, Singapore. In the future, Singapore is expected to be a technological competence center for both biotechnology and pharmaceutical manufacturing at Novartis. Through December 31, 2013, the total amount paid and committed to be paid on this project is $194 million.

In December 2012, we acquired a 16,000 square meter FDA-approved manufacturing facility in Morris Plains, New Jersey, from Dendreon Corporation for $43 million. In particular, we purchased all fixed assets at the site, including all equipment, machinery, utilities, and cell therapy related plant infrastructure, while the land and building will continue to be leased from a third party. The facility, and the former Dendreon personnel whom we retained, will support both clinical and commercial production of potential new products and therapies that emerge from the Novartis-University of Pennsylvania collaboration announced in August 2012, including CTL019. The facility space and infrastructure could also accommodate future chimeric antigen receptor production activities, in addition to CTL019.

In 2008, the Vaccines and Diagnostics Division broke ground on a new rabies and tick-borne encephalitis manufacturing facility in Marburg, Germany, which is expected to require a total investment of approximately $330 million. Construction is complete and the facility is in the process of executing the necessary validation activities. Regulatory approvals for products are planned for 2014 and 2015. As of December 31, 2013, the total amount paid and committed to be paid on this project was $321 million.

In 2009, the Vaccines and Diagnostics Division opened the division's new cell culture-based influenza vaccine manufacturing site in Holly Springs, North Carolina. As of December 31, 2013, the total amount spent on the project was $422 million, net of grants reimbursed by the US government. The total investment in this new facility is expected to be least $1 billion, partly supported by grants from the US government and prior investments in flu cell culture technologies at the Novartis Vaccines site in Marburg, Germany.

The Vaccines and Diagnostics Division has commenced a project for a new vaccine manufacturing facility in Recife, Brazil. The manufacturing plant is part of Novartis Vaccines' strategy to enter the Brazilian market, and is aligned with the government's goal to become self-sufficient in vaccine production. Our total investment in the facility is expected to be approximately $480 million. The technical startup of the facility is planned for approximately 2015. As of December 31, 2013, the total amount paid and committed to be paid on this project was $105 million.

In 2010, Novartis announced the signing of a Memorandum of Understanding, confirming its intention to build a new full-scale pharmaceutical manufacturing plant in St. Petersburg, Russia, operated

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by our Sandoz Division. In June 2011 we announced the commencement of construction. The plant is expected to produce approximately 1.5 billion units per year (oral solid dosage forms), of which the majority is anticipated to be generic products. Product registration for production at the site is expected to begin in 2014. Our total investment in the plant is expected to be approximately $140 million. As of December 31, 2013, the total amount paid and committed to be paid on this project was $60 million.

In 2013, the Alcon Division continued its expansion of its Johns Creek, Georgia facility for contact lens manufacturing. The capital cost for the expansion is expected to be $250 million, and production is expected to begin in 2014. Construction has added 6,500 square meters to the existing facility. As of December 31, 2013, the total amount paid and committed to be paid on this project is $213 million.

In the first quarter of 2013, the Alcon Division expanded its California operations and opened its Lake Forest facility to increase surgical research and development capabilities. Alcon signed an 11-year lease for three buildings, covering 17,000 square meters. As of December 31, 2013, the total amount paid and committed to be paid on this project is $23 million.

In the second quarter of 2013, the OTC Division announced a long-term plan to update and increase the capacity of its Nyon, Switzerland plant. The project is expected to take four years and cost up to $189 million. Basic design work for the project has been completed, and detailed design work is ongoing. As of December 31, 2013, the total amount paid and committed to be paid on this project is $9 million.

Environmental Matters

We integrate core values of environmental protection into our business strategy to add value to the business, manage risk and enhance our reputation.

We are subject to laws and regulations concerning the environment, safety matters, regulation of chemicals and product safety in the countries where we manufacture and sell our products or otherwise operate our business. These requirements include regulation of the handling, manufacture, transportation, use and disposal of materials, including the discharge of pollutants into the environment. In the normal course of our business, we are exposed to risks relating to possible releases of hazardous substances into the environment which could cause environmental or property damage or personal injuries, and which could require remediation of contaminated soil and groundwater. Under certain laws, we may be required to remediate contamination at third party sites, or at certain of our properties regardless of whether the contamination was caused by us, or by previous occupants of the property.

See also "Item 3. Key Information Item 3.D Risk Factors Environmental liabilities may adversely impact our results of operations" and "Item 18. Financial Statements Note 20."

Item 4A. Unresolved Staff Comments

Not applicable.

Item 5. Operating and Financial Review and Prospects

5.A Operating Results

This operating and financial review should be read together with the Group's consolidated financial statements in this Annual Report, which have been prepared in accordance with IFRS as published by the IASB.

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OVERVIEW

Novartis provides healthcare solutions that address the evolving needs of patients and societies worldwide. Our broad portfolio is organized into six global operating divisions, and we report our results in the following five segments:

Pharmaceuticals: Innovative patent-protected prescription medicines

Alcon: Surgical, ophthalmic pharmaceutical and vision care products

Sandoz: Generic pharmaceuticals

Vaccines and Diagnostics: Preventative human vaccines and blood-testing diagnostics (following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the division now consists only of Vaccines)

Consumer Health: OTC (over-the-counter medicines) and Animal Health

Novartis is the only healthcare company globally with leading positions in each of these areas. To maintain our competitive positioning across these growing segments of the healthcare industry, we place a strong focus on innovating to meet the evolving needs of patients around the world, growing our presence in new and emerging markets, and enhancing our productivity to invest for the future and increase returns to shareholders.

Headquartered in Basel, Switzerland, the Novartis Group companies employed approximately 136,000 full-time equivalent associates as of December 31, 2013, with operations in more than 140 countries around the world.

BUSINESS AND OPERATING ENVIRONMENT

Opportunity and Risk Summary

Our financial results are affected, to varying degrees, by the following external factors:

Transformational changes fueling demand

Aging population and shifting behaviors: The aging of the global population, as well as the prevalence of behaviors that increase risk of obesity and other chronic diseases, is driving demand for treatments Novartis provides.

Global rise in healthcare spending: Despite cost containment measures adopted by governments around the world, healthcare spending continues to increase. This is particularly true in emerging markets, where the expanding middle class has contributed to increased demand for quality care.

Scientific advances: Advances in the fields of genomics and biotechnology have provided new opportunities to more closely tailor treatments to individual patient groups, helping us demonstrate efficacy and bring innovative products to market for patients in need.

New technologies: The increasing use of connected medical devices and health information technology has made it easier for physicians to monitor patient adherence to our treatments, improving outcomes in clinical trials and the post-marketing setting.

Patient engagement: Increased access to health information and tools to communicate with providers is making patients more active participants in their own healthcare, creating a broader audience for our marketing efforts.

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Shift to generics and over-the-counter products: As healthcare costs continue to rise, both governments and consumers continue to gravitate toward lower-cost treatment options such as generics and over-the-counter products, which we produce at Sandoz and OTC.

Increasingly Challenging Business Environment

Patent expirations and product competition: The loss of market exclusivity and the introduction of branded and generic competitors can significantly erode sales of our innovative products.

Regulatory and safety hurdles: The costs associated with bringing a drug to market have increased as a result of heightened regulatory requirements. Even after a drug is approved, there is a possibility that safety events could occur and materially affect our results.

Manufacturing quality and complexity: The manufacture of our products is both highly regulated and complex, and may result in a variety of issues that could lead to extended supply disruptions and significant liability.

Weak economic environment: Despite some improvement in the global economy, governments and patients worldwide continue to seek ways to contain rising healthcare costs.

Legal proceedings: There is a trend of increasing government investigations and litigations against companies in the healthcare industry. Despite our best efforts to comply with the laws of the countries in which we operate and sell products, any failure in compliance could have a material adverse effect on our business and reputation.

For more detail on these trends and how they impact our results, see "Factors Affecting Results of Operations" below.

NOVARTIS STRATEGY FOR SUSTAINABLE GROWTH

We believe our diversified portfolio with leading positions in pharmaceuticals, eye care, generics, vaccines, over-the-counter medicines and animal health makes Novartis uniquely positioned to capture opportunities across growing segments of the healthcare industry while mitigating risks in other areas.

Our Priorities: Innovation, Growth and Productivity

Our long-term growth strategy places an emphasis on delivering positive patient outcomes through science-based innovation focused on high-growth segments of healthcare. We remain committed to three core strategic priorities extending our lead in innovation, accelerating growth and driving productivity all underpinned by integrity, which means a commitment to people, quality beyond compliance, ethical business practices and corporate responsibility. Our continued focus on R&D investments across divisions is expected to translate into key launches over the coming years. Our ongoing efforts to flawlessly execute product launches and growth programs across key markets help us convert our innovation pipeline into top-line growth. At the same time, our continued efforts to operate as efficiently as possible help us to reduce unnecessary complexity in order to strengthen financial results.

Extending Our Lead in Innovation

Patients are at the center of everything we do, and we have continued to prioritize innovation in order to bring new treatment solutions to market in areas where there is high unmet need. In 2013, we maintained our high level of investment in innovation, dedicating $9.9 billion, or 17% of Group net sales, to R&D activities, in an effort to help rejuvenate our portfolio.

We conduct research and early-stage development through the Novartis Institutes for BioMedical Research (NIBR), which focuses on studying molecular signaling pathways that can lead to disease. When drugs pass initial safety and efficacy tests in one disease area, we frequently initiate parallel studies in other indications because illnesses can share a common underlying pathway. We also leverage our R&D investments in Animal Health, as some of the medicines developed for human patients also may have applications for pets or farm animals.

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For our oncology monoclonal antibody biosimilars programs, Sandoz and Novartis Oncology have a joint project team which leverages the strengths of both groups. Sandoz brings biosimilars, technical development, manufacturing, regulatory and IP expertise while Novartis Oncology brings therapeutic area expertise and a broad, well respected network to drive clinical trial execution. Sandoz also leverages other R&D capabilities including animal disease models from NIBR, as well as clinical trial operations support and modeling and simulation from the Pharmaceuticals Division.

Our cutting-edge research has resulted in one of the industry's most promising pipelines, both in terms of the potential to change the lives of patients and ultimately the growth prospects of the Company. For example, in 2013, we received three Breakthrough Therapy designations from the United States Food and Drug Administration, among the highest number in the industry, for our pipeline products RLX030, LDK378 and BYM338. This new, high-priority designation is intended to increase FDA interactions that may ultimately speed the development of medicines that treat serious conditions, particularly where early clinical evidence indicates that they may yield a substantial improvement over existing therapies. For example, RLX030, an investigational heart failure drug, started a second Phase III trial and is currently the only product for which a reduction in all-cause mortality has been observed in patients with acute heart failure.

Beyond our internal research activities, Novartis also collaborates with partners to develop and commercialize promising treatments that can improve patient outcomes. For example, in September, Novartis entered an exclusive global licensing and research collaboration agreement with Regenerex LLC, a biopharmaceutical company in Louisville, Kentucky regarding the use of the company's novel Facilitating Cell Therapy (FCRx) platform. The stem cell-based FCRx platform has the potential to assist in suppressing immunological responses after kidney transplants and may have curative potential for multiple underserved diseases.

Accelerating Growth Across Six Divisions

While our focus on innovation contributes to our portfolio rejuvenation, we are also focused on continuously improving our commercial execution of approved products and expanding access to our medicines in Emerging Growth Markets (EGMs) which comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand to drive growth across the portfolio.

In 2013, our growth products[1] including *Gilenya*, *Afinitor*, *Tasigna*, *Galvus*, *Xolair, Lucentis*, the Q Family[2] and *Jakavi*, amongst others contributed significantly to overall performance, comprising 31% or $18.1 billion of Group net sales, up 15% over the previous year. For example, *Galvus*, our oral type 2 diabetes treatment, reached blockbuster status in 2013 with $1.2 billion (+40% cc) in full-year sales.

Emerging Growth Markets (EGMs) also performed strongly, up 10% (cc) over 2012 to $14.7 billion or 25% of Group net sales in 2013. We made significant investments to strengthen our footprint in key markets and establish ourselves as a market leader. In Russia and Brazil, Novartis is building a significant manufacturing presence. In China, we continued our strong growth trajectory, with net sales up 23% (cc) over the previous year. China became one of our top 10 markets in 2013.

In some EGMs, where healthcare infrastructure is limited, we have created innovative business models, or "Social Ventures," to build local capabilities in healthcare. Social Ventures address societal problems that impact access to healthcare in a way that also creates a financial return for the Company. In 2013, Novartis took steps to expand *Arogya Parivar* ("Healthy Family" in Hindi), a Social Venture that helps enhance access to health education, care and treatments in rural India, to additional countries. Since

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1 Growth products are defined as products launched in 2008 or later, or with exclusivity until at least 2017 in key markets (EU, US, Japan), except Sandoz which includes only products launched in the last 24 months. The definition of growth products is maintained in all comparisons to prior year.

2 The Q Family includes *Arcapta Neohaler/Onbrez Breezhaler*, *Seebri Breezhaler* and *Ultibro Breezhaler*.

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launching *Arogya Parivar* in 2007, Novartis has increased access to healthcare across about 30,000 villages in India, home to more than 50 million people.

Enhancing Productivity

Across divisions, Novartis maintains a consistent focus on improving efficiency and enhancing margins, allowing us to reinvest in the business and provide value for shareholders. Ongoing productivity initiatives relate to procurement and resource allocation across the portfolio, as well as our manufacturing network, offshoring, service hubs and R&D.

In Procurement, we leveraged our scale, implemented global category management and created country Centers of Excellence in key markets. These efforts generated savings of approximately $1.5 billion in 2013.

In addition, we continued to optimize our manufacturing footprint in 2013 with the announced closure of the Alcon contact lens care manufacturing facility in Mississauga, Canada in the fourth quarter. In January 2014, we also announced the closing of the Pharmaceuticals manufacturing site in Suffern, New York, US, bringing the total number of production sites that are in process of being restructured or divested to 20. Related to these initiatives, we recorded exceptional charges of $115 million in 2013, bringing total charges to $515 million cumulatively since the program began in the fourth quarter of 2010. In January 2014, the Pharmaceuticals Division announced plans to change the size and structure of the US Primary Care Business Unit and a shift of positions within Switzerland.

We anticipate that these initiatives, coupled with the Suffern plant closure, will contribute to an exceptional charge of approximately $150 million in the first quarter of 2014.

We also made productivity gains through global business service hubs, with a focus on knowledge services like clinical development and regulatory and medical affairs, and outsourcing, with a focus on transactional and commoditized processes in Finance and IT.

Taken together, our productivity initiatives allowed us achieve savings of approximately 5% of net sales.

Novartis Structure

The Novartis Group strategy for sustainable, long-term growth is based on focused diversification, in which we seek to access multiple, growing segments of the healthcare market. Reflecting our leadership positions across the market, the Group's businesses are divided on a worldwide basis into six global operating divisions, which report results in five segments (Pharmaceuticals, Alcon, Sandoz, Vaccines and Diagnostics, and Consumer Health), and Corporate activities. Except for Consumer Health, which comprises two divisions (Over-the-Counter, or OTC, and Animal Health) that are not material enough to the Group to be reported on an individual basis, these segments reflect the Group's internal management structure and are disclosed separately because they research, develop, manufacture, distribute and sell distinct products that require different marketing strategies.

Pharmaceuticals

Pharmaceuticals researches, develops, manufactures, distributes and sells patented prescription medicines and is organized in the following business franchises: Primary Care, consisting of Primary Care medicines and Established Medicines; and Specialty Care, consisting of Ophthalmology, Neuroscience, Integrated Hospital Care and Critical Care medicines. Novartis Oncology is organized as a business unit, responsible for the global development and marketing of oncology products.

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Pharmaceuticals is the largest contributor among the segments, and in 2013 accounted for $32.2 billion, or 56%, of Group net sales and $9.4 billion, or 80%, of Group operating income (excluding Corporate Income and Expense, net).

Alcon

As the global leader in eye care, Alcon researches, develops, manufactures, distributes and sells eye care products and technologies to serve the full lifecycle of eye care needs. Alcon offers a broad range of products to treat many eye diseases and conditions, and is organized into three businesses: Surgical, Ophthalmic Pharmaceuticals and Vision Care.

The Surgical portfolio includes technologies and devices for cataract, retinal, glaucoma and refractive surgery, as well as intraocular lenses to treat cataracts and refractive errors, like presbyopia and astigmatism. Alcon also provides viscoelastics, surgical solutions, surgical packs, and other disposable products for cataract and vitreoretinal surgery.

In Ophthalmic Pharmaceuticals, the portfolio includes treatment options for elevated intraocular pressure caused by glaucoma, anti-infectives to aid in the treatment of bacterial infections and bacterial conjunctivitis, ophthalmic solutions to treat inflammation and pain associated with ocular surgery, as well as an intravitreal injection for vitreomacular traction, including macular hole. The Ophthalmic Pharmaceuticals product portfolio also includes eye and nasal allergy treatments, as well as over-the-counter dry eye relief and ocular vitamins.

The Vision Care is comprised of disposable, monthly replacement, and color-enhancing contact lenses, as well as a complete line of contact lens care products including multi-purpose and hydrogen peroxide-based solutions, rewetting drops, and daily protein removers.

In 2013, Alcon accounted for $10.5 billion, or 18%, of Group net sales, and $1.2 billion, or 11% of Group operating income (excluding Corporate Income and Expense, net).

Sandoz

Sandoz develops, manufactures, distributes and sells prescription medicines, as well as pharmaceutical and biotechnological active substances, which are not protected by valid and enforceable third-party patents. Sandoz has activities in Retail Generics, Anti-Infectives and Biopharmaceuticals & Oncology Injectables. In Retail Generics, Sandoz develops, manufactures and markets active ingredients and finished dosage forms of pharmaceuticals to third parties. Retail Generics includes the specialty areas of Dermatology, Respiratory and Ophthalmics. In Anti-Infectives, Sandoz manufactures active pharmaceutical ingredients and intermediates mainly antibiotics for internal use by Retail Generics and for sale to third-party customers. In Biopharmaceuticals, Sandoz develops, manufactures and markets protein- or other biotechnology-based products (known as biosimilars or follow-on biologics) and sells biotechnology manufacturing services to other companies, and in Oncology Injectables, Sandoz develops, manufactures and markets cytotoxic products for the hospital market.

In 2013, Sandoz accounted for $9.2 billion, or 16%, of Group net sales and $1.0 billion, or 9% of Group operating income (excluding Corporate Income and Expense, net).

Vaccines and Diagnostics

Vaccines and Diagnostics consists of two activities: Vaccines and Diagnostics. Following the January 9, 2014 completion of the divestment of our blood transfusion diagnostics unit to Grifols S.A., the segment now consists only of Vaccines. Vaccines researches, develops, manufactures, distributes and sells human vaccines worldwide. Diagnostics researched, developed, distributed and sold blood testing and molecular diagnostics products.

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In 2013, Vaccines and Diagnostics accounted for $2.0 billion, or 3%, of Group net sales and generated an operating loss of $165 million.

Consumer Health

Consumer Health consists of two divisions: OTC and Animal Health. Each has its own research, development, manufacturing, distribution and selling capabilities, but neither is material enough to the Group to be separately disclosed as a segment. OTC offers readily-available consumer medicine, and Animal Health provides veterinary products for farm and companion animals.

In 2013, Consumer Health accounted for $4.1 billion, or 7%, of Group net sales and $178 million, or 1%, of Group operating income (excluding Corporate Income and Expense, net).

Corporate

Corporate activities include certain functions such as Financial Reporting & Accounting, Treasury, Internal Audit, IT, Legal, Compliance, Tax and Investor Relations that are managed at the Corporate level and provide support to the organization but are not attributable to specific divisions. Corporate also includes the costs of our headquarters and corporate coordination functions in major countries.

RESULTS OF OPERATIONS

In evaluating the Group's performance, we consider not only the IFRS results, but also additional non-IFRS measures, in particular core results and constant currency results. These measures assist us in evaluating our ongoing performance from year to year and we believe this additional information is useful to investors in understanding our business.

The Group's core results exclude the amortization of intangible assets, impairment charges, expenses relating to the integration of acquisitions as well as certain other income and expense items that are, or are expected to accumulate within the year to be, over a $25 million threshold that management deems exceptional. A reconciliation between IFRS results and core results, see " Core Results" below.

We present information about our revenue and other key figures relating to operating profit and net income in constant currencies (cc). We calculate constant currency revenue and operating profit measures by applying the prior-year average exchange rates to current financial data expressed in non-US dollars in order to estimate an elimination of the impact of foreign exchange rate movements.

These non-IFRS measures are explained in more detail, see "non-IFRS measures as defined by Novartis" and are not intended to be substitutes for the equivalent measures of financial performance prepared in accordance with IFRS. These measures may differ from similarly titled non-IFRS measures of other companies.

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2013 Compared to 2012

Key figures

	Year ended Dec 31, 2013	Restated Year ended Dec 31, 2012[1]	Change in $	Change in constant currencies
	$ m	$ m	%	%
Net sales	**57,920**	**56,673**	**2**	**4**
Other revenues	911	888	3	2
Cost of goods sold	(19,608)	(18,756)	(5)	(5)
Gross profit	**39,223**	**38,805**	**1**	**4**
Marketing & Sales	(14,549)	(14,353)	(1)	(3)
Research & Development	(9,852)	(9,332)	(6)	(6)
General & Administration	(3,060)	(2,937)	(4)	(5)
Other income	1,367	1,049	30	30
Other expense	(2,219)	(2,039)	(9)	(9)
Operating income	**10,910**	**11,193**	**(3)**	**5**
Income from associated companies	600	552	9	9
Interest expense	(683)	(724)	6	6
Other financial income and expense	(92)	(96)	4	30
Income before taxes	**10,735**	**10,925**	**(2)**	**6**
Taxes	(1,443)	(1,542)	6	(1)
Net income	**9,292**	**9,383**	**(1)**	**7**
Attributable to:				
Shareholders of Novartis AG	*9,175*	*9,270*	*(1)*	*7*
Non-controlling interests	*117*	*113*	*4*	*4*
Basic earnings per share ($)	**3.76**	**3.83**	**(2)**	**6**
Free cash flow	**9,945**	**11,383**	**(13)**	

(1) Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

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Core Key Figures

	Year ended Dec 31, 2013	Restated Year ended Dec 31, 2012[1]	Change in $	Change in constant currencies
	$ m	$ m	%	%
Core gross profit	**42,158**	**41,847**	**1**	**3**
Marketing & Sales	(14,522)	(14,352)	(1)	(3)
Research & Development	(9,642)	(9,116)	(6)	(6)
General & Administration	(3,035)	(2,923)	(4)	(4)
Other income	808	675	20	20
Other expense	(1,282)	(1,289)	1	0
Core operating income	**14,485**	**14,842**	**(2)**	**3**
Core net income	**12,533**	**12,576**	**0**	**5**
Core basic earnings per share ($)	**5.09**	**5.15**	**(1)**	**4**

(1) Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

Group overview

Group net sales increased to $57.9 billion in the full year, up 2% (+4% cc) over 2012. Currency had a negative impact of 2 percentage points, mainly from the weakening yen and emerging market currencies against the US dollar.

Excluding the impact of generic competition, underlying sales grew 8% in constant currencies. Growth products[3] contributed $18.1 billion or 31% of Group net sales, up from 28% in 2012. Loss of exclusivity impacted sales by approximately $2.2 billion, mainly due to *Diovan* and *Zometa/Aclasta.*

Group operating income was $10.9 billion (-3%, +5% cc). The negative currency impact of 8 percentage points was greater than the currency impact on sales, as the yen and emerging market currencies represent a larger proportion of operating income than sales.

The adjustments made to Group operating income to arrive at core operating income amounted to $3.6 billion (2012: $3.6 billion). These adjustments included $3.0 billion (2012: $2.9 billion) of amortization of intangible assets, $0.3 billion (2012: $0.4 billion) of impairment charges, $0.3 billion (2012: $0.3 billion) of acquisition-related items and in 2012 $0.1 billion of other exceptional items.

Significant exceptional items in 2013, which exclude amortization, included $331 million of integration costs, mainly in Alcon; $259 million of impairment charges, of which $74 million was in Pharmaceuticals, $61 million in Alcon, $59 million in Corporate and $65 million in other divisions; restructuring charges totaling $226 million, mainly $122 million in Pharmaceuticals, and $77 million in Alcon, offset by gains from divesting products and financial assets of $313 million in Pharmaceuticals and a net $117 million of other exceptional expenses. Prior year adjustments of significant exceptional items, which exclude amortization, were mainly driven by $330 million of integration costs principally from Alcon; $356 million of impairment charges of which the majority was in Pharmaceuticals; $272 million of restructuring charges offset by gains from divesting products and financial assets of $144 million; and a net $41 million of exceptional income.

[3] "Growth products" are defined as products launched in 2008 or later, or products with exclusivity until at least 2017 in key markets (EU, US, Japan) (except Sandoz, which includes only products launched in the last 24 months). The definition of growth products is maintained in all comparisons to prior year.

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Excluding these items, Group core operating income in 2013 was $14.5 billion (-2%, +3% cc). Excluding the impact of generic competition, underlying core operating income grew 15% in constant currencies. Core operating income margin in constant currencies decreased by 0.3 percentage points, mainly from lower core gross margins due to higher royalties and generic erosion as well as R&D investment in Pharmaceuticals; currency had a negative impact of 0.9 percentage points, resulting in a net decrease of 1.2 percentage points to 25.0% of net sales.

Group net income of $9.3 billion was down 1% in reported terms, but up 7% in constant currencies due to operating income performance, higher income from associated companies and lower net financial expense.

EPS was down 2% (+6% cc), in line with net income, to $3.76.

Group core net income was $12.5 billion (0%, +5% cc), ahead of core operating income mainly due to higher income from associated companies and lower net financial expenses. Core EPS was $5.09 (-1%, +4% cc), largely following core net income.

For the full year, free cash flow of $9.9 billion was 13% below the prior year. Aside from the significant currency impact, major reasons for the decline were increased trade receivables and higher capital investments in manufacturing and research facilities.

Net Sales by Segments

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Pharmaceuticals	32,214	32,153	0	3
Alcon	10,496	10,225	3	5
Sandoz	9,159	8,702	5	5
Vaccines and Diagnostics	1,987	1,858	7	6
Consumer Health	4,064	3,735	9	10
Net sales	**57,920**	**56,673**	**2**	**4**

	Year ended Dec 31, 2013	Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Established Markets*	**43,184**	**42,834**	**1**	**2**
Emerging Growth Markets*	**14,736**	**13,839**	**6**	**10**
Net Sales	**57,920**	**56,673**	**2**	**4**

*

Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Pharmaceuticals

Pharmaceuticals delivered net sales of $32.2 billion (0%, +3% cc) for the full year, driven by strong volume growth (+9 percentage points) and pricing (+1 percentage point), which more than offset the impact of generic competition ($2.2 billion, -7 percentage points). Growth products[3] grew 25% in constant currencies and contributed $12.3 billion or 38% of division net sales in 2013, compared to 31% in 2012.

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Europe ($11.0 billion, +5% cc) benefited from the continued strong performance of growth products. The US ($10.3 billion,-1% cc) was impacted by generic competition for *Zometa/Aclasta* and *Diovan HCT*. Japan's performance ($3.3 billion, +1% cc) improved versus prior year due to new launches. Emerging Growth Markets[4] ($7.7 billion, +9% cc) grew strongly.

TOP 20 PHARMACEUTICALS DIVISION PRODUCT NET SALES 2013

Brands	Business franchise	Indication	Net sales in United States	Change in constant currencies	Net sales in Rest of world	Change in constant currencies	Total net sales	Change in $	Change in constant currencies
			$ m	%	$ m	%	$ m	%	%
Gleevec/Glivec	Oncology	Chronic myeloid leukemia	1,939	14	2,754	(6)	**4,693**	**0**	**1**
Diovan/Co Diovan	Primary Care	Hypertension	1,679	(20)	1,845	(12)	**3,524**	**(20)**	**(16)**
Lucentis	Ophthalmics	Age-related macular degeneration			2,383	1	**2,383**	**(1)**	**1**
Gilenya	Neuroscience	Relapsing multiple sclerosis	1,023	41	911	94	**1,934**	**62**	**62**
Sandostatin	Oncology	Acromegaly	710	9	879	6	**1,589**	**5**	**8**
Exforge	Primary Care	Hypertension	356	(1)	1,100	16	**1,456**	**8**	**12**
Afinitor/Votubia	Oncology	Breast cancer	691	68	618	64	**1,309**	**64**	**66**
Tasigna	Oncology	Chronic myeloid leukemia	428	22	838	36	**1,266**	**27**	**31**
Galvus	Primary Care	Diabetes			1,200	40	**1,200**	**32**	**40**
***Exelon/Exelon*Patch**	Neuroscience	Alzheimer's disease	457	7	575	(5)	**1,032**	**(2)**	**0**
Exjade	Oncology	Iron chelator	265	6	628	4	**893**	**3**	**4**
Neoral/Sandimmun	Integrated Hospital Care	Transplantation	56	(13)	694	(3)	**750**	**(9)**	**(4)**
***Voltaren* (excl. other divisions)**	Established medicines	Inflammation/pain	2	100	673	(4)	**675**	**(11)**	**(4)**
Myfortic	Integrated Hospital Care	Transplantation	270	13	367	13	**637**	**10**	**13**
Xolair	Primary Care	Asthma			613	24	**613**	**22**	**24**
Zometa	Oncology	Cancer complications	115	(80)	485	(30)	**600**	**(53)**	**(52)**
Ritalin/Focalin	Established medicines	Attention deficit/ hyperactivity disorder	435	8	159	6	**594**	**7**	**8**
Comtan/Stalevo	Neuroscience	Parkinson's disease	33	(78)	368	0	**401**	**(24)**	**(21)**
TOBI	Critical Care	Cystic fibrosis	268	28	119	12	**387**	**22**	**22**
Femara	Oncology	Breast cancer	19	(14)	365	(7)	**384**	**(12)**	**(7)**
Top 20 products total			**8,746**	**2**	**17,574**	**5**	**26,320**	**1**	**4**
Rest of portfolio			1,510	(15)	4,384	3	**5,894**	**(5)**	**(2)**
Total Division sales			**10,256**	**(1)**	**21,958**	**5**	**32,214**	**0**	**3**

4 Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

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Pharmaceuticals Division Product Highlights Leading Products

Net sales growth data below refer to 2013 worldwide performance. Growth rates are not provided for some products since they are not meaningful.

Gleevec/Glivec ($4.7 billion, +1% cc) maintained steady sales as a treatment for adult patients with metastatic and/or unresectable KIT+ gastrointestinal stromal tumors (GIST), as an adjuvant treatment for certain adult patients following resection of KIT+ GIST, and as a targeted therapy for Philadelphia chromosome-positive chronic myeloid leukemia (Ph+ CML). In 2013, *Gleevec/Glivec* was approved in the US and EU for treatment of acute lymphocytic leukemia in pediatric patients. Our Bcr-Abl franchise, which consists of *Gleevec/Glivec* and *Tasigna*, grew strongly in 2013, reaching net sales of $6.0 billion (+7% cc).

Diovan Group ($3.5 billion,-16% cc), consisting of *Diovan* monotherapy and the combination product *Co-Diovan/Diovan HCT*, saw worldwide sales decline due to the loss of exclusivity in the EU, US, Canada and other markets, as well as the impact of the conflict of interest issue regarding valsartan investigator-initiated trials in Japan. Continued growth was seen in China and select markets in Latin America, Asia Pacific, the Middle East, and Africa. With respect to *Diovan* monotherapy in the US (90% of *Diovan* Group sales in the US in 2013), no generic competitor has yet been approved by the FDA. *Diovan HCT*, however, already faces competition from multiple generic competitors in the US.

Lucentis ($2.4 billion, +1% cc) saw total sales figures equal to the previous year and double-digit volume growth, despite entry of licensed competition and one-time price adjustments due to reimbursement expansion in recently launched new indications. *Lucentis* is the only anti-VEGF therapy licensed in many countries for the treatment of four ocular indications: wet age-related macular degeneration (wet AMD), visual impairment due to diabetic macular edema (DME), visual impairment due to macular edema secondary to retinal vein occlusion (RVO, including both branch and central RVO), and visual impairment due to choroidal neovascularization secondary to pathologic myopia (mCNV). *Lucentis* is approved in more than 100 countries to treat patients with the first three conditions, and in more than 40 countries for the fourth condition. Since its launch in 2007, there have been more than 2.2 million patient-treatment years of exposure for *Lucentis. Lucentis received several regulatory approvals in 2013:* EU approval in July for the treatment of visual impairment due to mCNV; Japan approval in August as a treatment for visual impairment due to mCNV and for visual impairment due to RVO, including both branch and central RVO; and EU approval in October for a pre-filled syringe. Genentech/Roche holds the rights to *Lucentis* in the US.

Gilenya ($1.9 billion, +62% cc) continued to show rapid growth as the first once-daily oral therapy approved to treat relapsing forms of multiple sclerosis (MS) and the first in a new class of compounds called sphingosine 1-phosphate receptor modulators. In the US, *Gilenya* is indicated for relapsing forms of MS. In the EU, *Gilenya* is indicated for adult patients with highly active relapsing remitting MS (RRMS) defined as either high disease activity despite treatment with beta interferon, or rapidly evolving severe RRMS. In an expanding oral market with multiple options, *Gilenya* is the only oral MS treatment that provides early and long-term reduction in the rate of brain volume loss and enduring high efficacy across all key disease activity measures (disability progression, relapses, MRI activity, brain volume loss). *Gilenya* is proven to consistently limit brain volume loss, seen within 6 months and sustained for up to 4 years in Phase III studies and up to 7 years in a Phase II study. In addition, *Gilenya* is the only oral disease-modifying therapy with proven superior relapse reduction versus an active comparator (61% in interferon non-responders). *Gilenya* has shown very good tolerability over the long term. Nine in 10 patients and their physicians confirm favorable tolerability in a real-world setting. As of December 2013, more than 84500 patients have been treated in clinical trials and in a post-marketing setting, and there are currently more than 118000 patient years of exposure. *Gilenya* is currently approved in over 78 countries around the world, and is licensed from Mitsubishi Tanabe Pharma Corporation.

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Sandostatin ($1.6 billion, +8% cc), a somatostatin analogue used as a treatment for patients with functional gastroenteropancreatic tumors as well as acromegaly, continued to benefit from increasing use of *Sandostatin LAR* in key markets. A new presentation of *Sandostatin LAR*, which includes an enhanced diluent, safety needle and vial adapter, has been approved in 40 countries to date with additional filings underway. *Sandostatin LAR* is also approved in 44 countries for the delay of disease progression in patients with advanced neuroendocrine tumors of the midgut or unknown primary tumor location. *Sandostatin* was first launched in 1988 and is approved in more than 100 countries.

Exforge Group ($1.5 billion, +12% cc) includes two medicines approved for the treatment of hypertension *Exforge*, a single-pill combination of the angiotensin receptor blocker (ARB) valsartan and the calcium channel blocker amlodipine besylate; and *Exforge HCT*, a single pill combining an ARB (valsartan), calcium channel blocker (amlodipine) and a diuretic (hydrochlorothiazide). *Exforge* Group continued to grow at a double-digit rate, fueled by robust growth in Europe, Latin America, Asia Pacific, and the Middle East, as well as ongoing *Exforge HCT* launches in Asia and Latin America. *Exforge* is now available in more than 100 countries. *Exforge HCT* is available in over 60 countries.

Afinitor/Votubia ($1.3 billion, +66% cc), an oral inhibitor of the mTOR pathway, continued its strong growth trajectory in 2013 with sales across multiple indications. *Afinitor* is approved in more than 100 countries for the treatment of various cancers including HR+/HER2- advanced breast cancer, advanced renal cell carcinoma and advanced pancreatic neuroendocrine tumors (NET). Everolimus, the active ingredient in *Afinitor/Votubia*, is also available in more than 60 countries for the treatment of renal angiomyolipomas and/or subependymal giant cell astrocytomas (SEGA) associated with tuberous sclerosis complex (TSC), including as a dispersible tablet formulation in the US and EU for SEGA. Everolimus is also in Phase III development for patients with gastrointestinal and lung NET, HER2+ breast cancer, lymphoma and TSC-related seizures. Everolimus is available under the trade names *Zortress/Certican* for use in other non-oncology indications and is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Tasigna ($1.3 billion, +31% cc) grew rapidly as a more effective, targeted therapy for certain adult patients with Ph+ CML. It is currently approved as a first-line therapy for newly diagnosed patients with Ph+ CML in the chronic phase in more than 85 countries globally, including the US, EU, Japan and Switzerland, with additional submissions pending worldwide. *Tasigna* (nilotinib) is also approved in more than 110 countries as a second-line treatment for patients with Ph+ CML in chronic and/or accelerated phase who are resistant or intolerant to existing treatment, such as *Gleevec/Glivec*. *Tasigna* market share continues to rise in markets around the world in both the first-line and second-line settings. This product is part of our Bcr-Abl franchise with net sales of $6.0 billion, (+7% cc), which also includes *Gleevec/Glivec*. Novartis has initiated a global clinical trial program to evaluate the potential for Ph+ CML patients to maintain deep molecular response after stopping nilotinib therapy a concept called treatment-free remission.

Galvus Group ($1.2 billion, +40% cc), which includes *Galvus*, an oral treatment for type 2 diabetes, and *Eucreas*, a single-pill combination of vildagliptin (the active ingredient in *Galvus*) and metformin, continued to deliver strong growth across markets including Europe, Japan, Latin America, and Asia Pacific. Performance was driven by a continued focus on patients whose diabetes remains uncontrolled on metformin, as well as an expansion of usage in new patient segments based on new indications. *Galvus* and *Eucreas* are currently approved in more than 110 countries. In October, the German Federal Joint Committee (G-BA) announced the results of its benefit assessment of *Galvus* and *Eucreas*, finding that they do not provide an additional benefit relative to sulphonylureas in combination with metformin. This decision is not consistent with the views of other Health Technology Assessment bodies and is the result of the German assessment process that limited its review to specific comparators.

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Exelon/Exelon Patch ($1.0 billion, 0% cc) had stable combined sales in 2013 as a therapy for Alzheimer's disease (AD) dementia and Parkinson's disease (PD) dementia. *Exelon* Patch, the novel transdermal form of the medicine launched in 2007 and now available in more than 90 countries worldwide, generated the majority of the sales. In June 2013, the US FDA expanded the approved indication for *Exelon* Patch, which was already approved for the treatment of mild to-moderate dementia of the Alzheimer's type and mild to-moderate dementia associated with PD, to include the treatment of patients with severe AD. The severe AD indication has subsequently been approved in Argentina (Sep. 2013) and Chile (Oct. 2013). In January 2013, European marketing authorization was obtained for the higher dose in mild-to-moderate AD. The first generic versions of *Exelon* Patch have been launched in the EU.

Exjade ($893 million, +4% cc), a once-daily oral therapy for the treatment of chronic iron overload due to blood transfusions in patients two years of age and older, saw steady sales growth in the US, Europe, Latin America, China, Middle East and Japan. *Exjade* was first approved in 2005 and is now approved in more than 100 countries. *Exjade* is also approved for the treatment of chronic iron overload in patients 10 years of age and older with non-transfusion-dependent thalassemia in more than 60 countries, including the US and the member states of the EU.

Neoral/Sandimmun ($750 million, -4% cc), a micro-emulsion formulation of cyclosporine is an immunosuppressant to prevent organ rejection following a kidney, liver or heart transplant. *Neoral* is also approved for use in lung transplant in many countries outside of the US. Additionally, it is indicated for treating selected autoimmune disorders such as psoriasis and rheumatoid arthritis. First launched in 1995, *Neoral* is marketed in approximately 100 countries. This product is subject to generic competition.

Voltaren/Cataflam ($675 million, -4% cc), is a leading non-steroidal anti-inflammatory drug (NSAID) for the relief of symptoms in rheumatic diseases such as rheumatoid arthritis and osteoarthritis, and for various other inflammatory and pain conditions. *Voltaren/Cataflam* was first launched in 1973 and is available in more than 140 countries. This product, which is subject to generic competition, is marketed by the Pharmaceuticals Division in a wide variety of dosage forms, including tablets, drops, suppositories, ampoules and topical therapy. In addition, in various countries, our Sandoz Division markets generic versions of *Voltaren*, our Alcon Division markets *Voltaren* for ophthalmic indications, and our OTC Division markets low-dose oral forms and the topical therapy of *Voltaren* as over-the-counter products.

Total sales across all divisions of *Voltaren/Cataflam* (diclofenac) amounted to $1.5 billion in 2013 and grew 7% in constant currencies against the prior year.

Myfortic ($637 million, +13% cc), a transplantation medicine, continued to grow as a treatment for the prevention of acute rejection of kidney allografts. It is indicated for treatment in combination with cyclosporine and corticosteroids, and approved in more than 90 countries.

Xolair ($613 million, +24% cc), a biologic drug for appropriate patients with severe persistent allergic asthma in Europe and moderate-to-severe persistent allergic asthma in the US, is now approved in more than 90 countries and in 2013 continued to grow strongly in Europe, Japan, Canada and Latin America. Novartis co-promotes *Xolair* with Genentech/Roche in the US and shares a portion of operating income, but does not book US sales. A Phase III trial is progressing to support registration in China. Results from three pivotal Phase III registration studies for omalizumab, the active ingredient in *Xolair*, for the treatment of chronic spontaneous urticaria (CSU) were presented in 2013. CSU is also known as chronic idiopathic urticaria (CIU) in the US, and is a persistent, debilitating form of hives and chronic itch with limited approved treatment options. Regulatory submissions for omalizumab in CSU were completed in the EU, US and Switzerland in the third quarter of 2013. In January 2014, the CHMP granted a positive opinion for the use of *Xolair* as an add-on therapy for CSU in adult and adolescent patients 12 years and older with inadequate response to H1 antihistamines. The opinion was based on positive results from the three pivotal registration studies.

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Zometa ($600 million, -52% cc), which is used in an oncology setting to reduce or delay skeletal-related events in patients with bone metastases from solid tumors and multiple myeloma, continued to decline as anticipated in 2013 due to competition and generic challenges following patent expirations in 2013 on its active ingredient, zoledronic acid.

Ritalin/Focalin ($594 million, +8% cc) continued to grow as a treatment for attention deficit hyperactivity disorder (ADHD) in children. *Ritalin* and *Ritalin LA* are available in more than 70 and 30 countries, respectively, and are also indicated for narcolepsy. *Focalin* and *Focalin XR* are available in the US and *Focalin XR* is additionally indicated for adults. *Focalin XR* is also approved in Switzerland. *Ritalin* Immediate Release has generic competition in most countries. Some strengths of *Ritalin* and *Focalin* are subject to generic competition in the US.

Comtan/Stalevo ($401 million, -21% cc), both indicated for the treatment of patients with Parkinson's disease who experience end-of-dose motor (or movement) fluctuations, known as "wearing off", saw sales decline in 2013 due to generic competition in some markets. *Comtan* (entacapone) and *Stalevo* (carbidopa, levodopa and entacapone) are marketed in more than 50 countries by Novartis under a licensing agreement with Orion Corporation.

TOBI/TOBI Podhaler ($387 million, +22% cc). Sales of both *TOBI* (tobramycin inhalation solution) and *TOBI Podhaler* (tobramycin inhalation powder) formulations of the antibiotic tobramycin, continued to grow, in particular following the approval of *TOBI Podhaler* in the US in March 2013, with *TOBI Podhaler* representing 33% of total sales in 2013. Both products are used for the management of pulmonary Pseudomonas aeruginosa infection in cystic fibrosis patients aged six years and older. *TOBI Podhaler*, now approved in over 55 countries, delivers tobramycin using a portable, pocket-sized inhaler and reduces administration time by approximately 70% relative to *TOBI*.

Femara ($384 million, -7% cc), a treatment for early stage and advanced breast cancer in postmenopausal women, experienced a continued decline in sales due to multiple generic entries in the US, Europe and other key markets.

Other Products of Significance

Reclast/Aclasta ($337 million, -42% cc), is the first once-yearly bisphosphonate infusion for the treatment of certain forms of osteoporosis in both men and women. *Reclast/Aclasta* is also indicated for the treatment of Paget's disease of the bone in men and women. Sold as *Reclast* in the US and *Aclasta* in the rest of the world, the product is approved in more than 100 countries for up to six indications. It is also the only bisphosphonate approved to reduce the incidence of fractures at all three key fracture sites (hip, spine and non-spine) in the treatment of postmenopausal osteoporosis. Zoledronic acid, the active ingredient in *Reclast/Aclasta*, is also approved in a number of countries in a different dosage under the trade name *Zometa* for certain oncology indications. *Reclast/Aclasta* is facing generic competition in 2013 since the patent on its active ingredient, zoledronic acid, expired in the US and other major markets.

Zortress/Certican ($249 million, +20% cc), is a transplantation medicine approved in more than 90 countries to prevent organ rejection for renal and heart transplant patients, and in addition, in more than 50 countries worldwide to prevent organ rejection for liver transplant patients. In the US, under the trade name *Zortress*, the drug is approved for the prophylaxis of organ rejection in adult patients at low-moderate immunologic risk receiving a kidney transplant, as well as for the prophylaxis of allograft rejection in adult liver transplant recipients. Everolimus, the active ingredient in *Zortress/Certican,* is marketed for other indications under the trade names *Afinitor/Votubia.* Everolimus is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Arcapta Neohaler/Onbrez Breezhaler ($192 million, +47% cc) continued to grow strongly worldwide as a once-daily long-acting beta$_2$-agonist (LABA) for the maintenance bronchodilator treatment of airflow obstruction in adult patients with chronic obstructive pulmonary disease (COPD). Indacaterol, the active ingredient in *Arcapta Neohaler/Onbrez Breezhaler*, is now approved in more than 100 countries.

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Jakavi ($163 million) sales grew as an oral inhibitor of the JAK 1 and JAK 2 tyrosine kinases. It is the first JAK inhibitor indicated for the treatment of disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis (also known as chronic idiopathic myelofibrosis), post-polycythemia vera myelofibrosis or post-essential thrombocythemia myelofibrosis. *Jakavi* is approved in more than 50 countries, including EU member states, Canada, Australia, Russia, Mexico and Argentina; with additional worldwide regulatory filings underway. Incyte Corporation holds the rights for *Jakavi* in the US, where it is sold as Jakafi®. Trials, including a Phase III registration study, are underway examining the use of *Jakavi* in patients with polycythemia vera, with data expected to be presented at medical congresses and filed with health authorities in 2014.

Extavia ($159 million, -1% cc), the Novartis version of Betaferon®/Betaseron® (interferon beta-1b) for relapsing forms of MS is available in more than 35 countries, including the US. A new auto-injector device, *EXTAVIPro 30G*, was launched in October 2013 for self-injection of *Extavia*. The auto injector is an enhanced version of the *EXTAVIJECT 30G* and has been designed for greater convenience and patient comfort.

Ilaris ($119 million, +65% cc), is a fully human monoclonal antibody that selectively binds and neutralizes interleukin-1β, a pro-inflammatory cytokine. Since 2009, *Ilaris* has been approved in over 60 countries for the treatment of children and adults suffering from cryopyrin associated periodic syndrome (CAPS), a group of rare disorders characterized by chronic recurrent fever, urticaria, occasional arthritis, deafness, and potentially life-threatening amyloidosis. In March 2013, *Ilaris* was approved in the EU for the treatment of acute gouty arthritis in patients who cannot be managed with the standard of care. Also in 2013, *Ilaris* was approved for the treatment of systemic juvenile idiopathic arthritis in the US, EU and other countries, and it was granted a CAPS label extension in the EU for use in younger children.

Seebri Breezhaler ($58 million) saw strong growth and is now approved in the EU, Japan, Switzerland, Canada, Australia and a number of other countries. *Seebri Breezhaler* (glycopyrronium bromide) is a novel inhaled long-acting muscarinic antagonist (LAMA) indicated as a once-daily maintenance bronchodilator treatment to relieve symptoms in patients with COPD. Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.

Ultibro Breezhaler ($6 million), is a once-daily fixed-dose combination of the LABA indacaterol and the LAMA glycopyrronium bromide. In September 2013, *Ultibro Breezhaler* was approved in the EU as a maintenance bronchodilator treatment to relieve symptoms in adult patients with COPD, and in Japan the Ministry of Health Labour and Welfare approved *Ultibro* Inhalation Capsules, delivered through the *Breezhaler* inhalation device, for relief of various symptoms due to airway obstruction in COPD. *Ultibro Breezhaler* was also approved in Canada in 2013 as a long-term once-daily maintenance bronchodilator treatment of airflow obstruction in patients with COPD, including chronic bronchitis and emphysema. Glycopyrronium bromide was exclusively licensed to Novartis in April 2005 by Vectura and its co-development partner Sosei.

Alcon

Alcon net sales were $10.5 billion (+3%, +5% cc) for the full year 2013. The Surgical franchise grew 4% (+7% cc), driven by procedure growth, market share gains, and demand for *LenSx* and *Centurion* equipment. Ophthalmic Pharmaceuticals growth (+2%, +5% cc) was due to broad market share gains across key segments, but was impacted by generic competition in the US glaucoma market. Vision Care grew 2% (+4% cc), as sales growth in the contact lens business was partly offset by declines in the contact lens care market.

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Alcon Division net sales by product category:

	Year ended Dec 31, 2013 $ m	Year ended Dec 31, 2012 $ m	Change in $ %	Constant currencies change %
Surgical				
Cataract products	3,037	2,932	4	7
of which IOLs	*1,297*	*1,281*	*1*	*5*
Vitreoretinal products	592	578	2	7
Refractive/other	268	242	11	12
Total	**3,897**	**3,752**	**4**	**7**
Ophthalmic Pharmaceuticals				
Glaucoma	1,265	1,259	0	4
Allergy/otic/nasal	939	901	4	6
Infection/inflammation	1,019	1,011	1	2
Dry eye/other	885	848	4	7
Total	**4,108**	**4,019**	**2**	**5**
Vision Care				
Contact lenses	1,793	1,732	4	5
Contact lens care	698	722	(3)	(1)
Total	**2,491**	**2,454**	**2**	**4**
Total net sales	**10,496**	**10,225**	**3**	**5**

Alcon Division Highlights

Net sales growth data below refer to 2013 worldwide performance.

Surgical

Surgical was the Alcon Division's fastest-growing franchise in 2013, with global net sales of $3.9 billion up 7% (cc) over the previous year. This performance was driven by growth in the installed equipment base, including *LenSx* and the recently launched *Centurion* equipment, as well as cataract procedure growth and share gains in intraocular lenses (IOLs).

Global sales of the *LenSx* femtosecond laser grew 30% (cc), with increasing use of disposable products for the platform, as well as disposables for Constellation, which grew 34% (cc).

In addition, Alcon launched the *Centurion* vision system, its latest phacoemulsification platform, in the US and Europe, as part of the Cataract Refractive Suite, which is comprised of multiple innovations and advanced technologies from its surgical device portfolio, including the

Verion image guided system and *LuxOR* surgical microscopes in addition to the *LenSx* laser and *Centurion* vision system.

Sales of base IOLs increased by 6% (cc), growing ahead of the market. Advanced technology intraocular lenses (ATIOLs) (+4% cc) were driven primarily by the continued penetration of toric ATIOLs, partially offset by price erosion.

Ophthalmic Pharmaceuticals

Ophthalmic Pharmaceuticals global net sales were $4.1 billion (+5% cc) in 2013, driven by broad market share gains across key segments.

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Within Glaucoma, the positive US response to the April 2013 launch of *Simbrinza* ophthamlic suspension, overall pricing discipline, and continued non-US growth (+5% cc), driven by fixed-dose combinations *DuoTrav* solution and *Azarga* suspension, were partially offset by US generic prostaglandin competition. US sales of *Travatan* (-5% cc) declined due to prostaglandin generic competition.

Allergy/otic/nasal sales were up 4% in $ (+6% cc) driven by *Nevanac* suspension (+13% cc) and Dry Eye continued to show global growth within the *Systane* product family (+17% cc).

Market access for *Jetrea* intravitreal injection, a first-in-class treatment for symptomatic vitreomacular adhesion and vitreomacular traction when associated with macular hole, continued to make significant progress. In 2013, it was launched in Germany, Benelux, the Nordics, Canada, and the UK. In the UK, the National Institute for Health and Care Excellence (NICE) confirmed its positive recommendation for reimbursement to the NHS with final written guidance received in October 2013. In Germany, the Institute for Quality and Efficiency in Health Care (IQWiG) assessed the additional benefit of *Jetrea* intravitreal injection versus standard of care as "major" for patients with mild symptoms and "significant" for patients with moderate to severe symptoms. Additionally, in January 2014, Canada's Common Drug Review issued a positive recommendation.

Vision Care

Vision Care global product net sales were $2.5 billion (+4% cc), with solid sales in contact lenses (+5% cc), offset by a slight decline in sales of contact lens care products (-1% cc). Contact lens segment performance was driven by the continued strong global growth of the *Air Optix* portfolio (+12% cc), which leads the market in the multifocal segment. The *Dailies* brand experienced continued growth in the US and Europe due to the positive market response to the launch of *Dailies Total1* water gradient contact lenses. In 2013, the product was introduced in the US, Canada, Switzerland, the UK, Spain and Portugal, while also receiving approval in China. Alcon also received FDA approval for its *Dailies Aqua Comfort Plus* Toric silicone hydrogel lenses. Performance of contact lens care products was mixed, driven by strength in *Clear Care*, offset by declines in non-promoted chemical disinfectant brands and softness in *Opti-Free* products.

Sandoz

Net sales increased by 5% (+5% cc) to $9.2 billion, driven by double-digit retail generics and biosimilars sales increases in Western Europe (excluding Germany) (+12% cc), Central & Eastern Europe (+11% cc), the Middle East & Africa (+19% cc), Latin America (+16% cc) and Asia (excluding Japan) (+13% cc). Japan (+19% cc) grew double digit for the 6th year in a row. The US was up 2% (cc) in a flat generics market, as new product launches and the acquisition of Fougera more than compensated for the decline in sales of enoxaparin (generic Lovenox®) (which fell from $451 million in 2012 to $213 million in 2013) and the US authorized generic launch of the valsartan HCT in 2012. German retail generics and biosimilars sales declined by 1% (cc) in a declining market. Biosimilars sales grew 23% (cc) to reach $420 million globally.

Volume increased 14 percentage points, including 3 percentage points contributed by Fougera. Price erosion was 9 percentage points, driven primarily by higher pricing for enoxaparin in the first half of 2012.

Vaccines and Diagnostics

Net sales increased 7% (+6% cc) to $2.0 billion for the full year compared to $1.9 billion in 2012. The sales increase was driven by higher *Menveo* sales and seasonal influenza demand and pre-pandemic sales.

Key progress was achieved this year with the approval of *Menveo* for infants as young as 2 months of age in the US as well as the approval of *Bexsero* in Europe, Australia and Canada, with shipments to

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several European private markets starting in the fourth quarter. Additionally, we supplied *Bexsero* to Princeton University in response to a potentially deadly outbreak of meningococcal serogroup B disease.

Consumer Health

Consumer Health returned to growth in 2013 as sales increased 9% (+10% cc) to $4.1 billion, driven by both the OTC and Animal Health businesses.

OTC sales grew double-digit (cc) versus the prior-year period, mainly due to product re-launches in the US and Canada, new product launches globally, the ability to increase price behind strong brands, and a focus on priority brands around the world. Double-digit sales growth (cc) continued in Emerging Growth Markets, particularly in China, Poland and Russia. Russia became OTC's biggest growth driver and second-largest market this year. *Voltaren* became the world's tenth-largest OTC brand in 2013, delivering double-digit sales growth (cc) supported by continued success of the extra-strength and extended-relief (12 hours) topical formulation, now available in 21 countries. *Theraflu* and *Otrivin* also achieved double-digit growth, supported by a strong cough/cold season in Russia and Poland. *Excedrin* continued to regain momentum following US re-launches in the fourth quarter of 2012 and the first quarter of 2013.

Animal Health delivered high single-digit growth (cc) over the prior-year period, driven by the *Sentinel* re-launch in the US market in the beginning of the second quarter. In Europe, after adjusting for the impact of a minor divestment in 2012, the business grew at a high single-digit rate, led by strong sales of *Milbemax*. *Denagard*, an anti-infective for pigs and poultry, continued to drive growth across several markets with particularly strong results in Southeast Asia. Emerging Growth Markets delivered high single-digit growth (cc), led by Russia, India and Vietnam.

Operating Income by Segments

	Year ended Dec 31, 2013	% of net sales	Restated Year ended Dec 31, 2012	% of net sales	Change	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**9,376**	**29.1**	**9,598**	**29.9**	**(2)**	**3**
Alcon	**1,232**	**11.7**	**1,465**	**14.3**	**(16)**	**(2)**
Sandoz	**1,028**	**11.2**	**1,091**	**12.5**	**(6)**	**(3)**
Vaccines and Diagnostics	**(165)**	**(8.3)**	**(250)**	**(13.5)**	**34**	**34**
Consumer Health	**178**	**4.4**	**48**	**1.3**	**nm**	**nm**
Corporate income & expenses, net	(739)		(759)[1]		3	4
Operating income	**10,910**	**18.8**	**11,193**	**19.8**	**(3)**	**5**

(1) Corporate income and expenses, net have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

nm = not meaningful

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Core Operating Income by Segments

	Year ended Dec 31, 2013	% of net sales	Restated Year ended Dec 31, 2012	% of net sales	Change	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**9,523**	**29.6**	**10,213**	**31.8**	**(7)**	**(1)**
Alcon	**3,694**	**35.2**	**3,698**	**36.2**	**0**	**6**
Sandoz	**1,541**	**16.8**	**1,503**	**17.3**	**3**	**4**
Vaccines and Diagnostics	**65**	**3.3**	**(75)**	**(4.0)**	**nm**	**nm**
Consumer Health	**298**	**7.3**	**159**	**4.3**	**87**	**95**
Corporate income & expenses, net	(636)		(656)[1]		3	5
Core operating income	**14,485**	**25.0**	**14,842**	**26.2**	**(2)**	**3**

(1) Corporate income and expenses, net have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

nm = not meaningful

Pharmaceuticals

Operating income was $9.4 billion (-2%, +3% cc) for the full year. Operating income margin in constant currencies increased by 0.1 percentage points, and currency had a negative impact of 0.9 percentage points, resulting in a net decline of 0.8 percentage points to 29.1% of net sales. Adjustments to arrive at core operating income amounted to $147 million, mainly due to the amortization of intangible assets of $278 million and impairment charges of $74 million, partially offset by gains from divesting products and financial assets of $313 million. Prior-year adjustments of $615 million included $322 million for the amortization of intangible assets, $238 million of impairments and $55 million of other exceptional charges.

Core operating income declined 7% (-1% cc) to $9.5 billion. Core operating income margin in constant currencies declined by 1.3 percentage points, mainly due to increased investments into promising R&D pipeline assets and lower gross margins, partly offset by productivity savings from Marketing & Sales. Currency had a negative impact of 0.9 percentage points, resulting in a net decrease of 2.2 percentage points to 29.6% of net sales.

Core gross margin declined by 0.7 percentage points (cc) mainly due to the impact of increased royalties, principally for *Gilenya* and generic erosion. R&D expenses as a percentage of net sales increased by 0.9 percentage points (cc) to support key projects. Marketing & Sales and General & Administration expenses improved margin by 0.4 percentage points (cc). Other Income and Expense, net reduced the margin by 0.1 percentage points (cc).

As shown below, Pharmaceuticals invested $7.2 billion (on a core basis also $7.2 billion) in research and development in 2013. Total Research and Development expenses of the Pharmaceuticals Division in 2013 represents 22.5% of Pharmaceuticals net sales compared to 21.5% in 2012.

Research and Exploratory Development expenditure was $2.7 billion in 2013, practically unchanged from 2012. Confirmatory Development expenditures in 2013 increased by 6% to $4.6 billion as compared against 2012.

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Pharmaceuticals research and development expenditure

	2013	Core R&D 2013[1]	2012	Core R&D 2012[1]
	$ m	$ m	$ m	$ m
Research and Exploratory Development	2,664	2,611	2,584	2,530
Confirmatory Development	4,578	4,550	4,334	4,167
Total	**7,242**	**7,161**	**6,918**	**6,697**
% of Pharmaceuticals net sales	22.5%	22.2%	21.5%	20.8%

(1) Core excludes impairments, amortization and certain exceptional items.

Alcon

Operating income of $1.2 billion (16%, 2% cc) was impacted by integration and restructuring charges, partially offset by sales growth and productivity gains. Operating income margin in constant currencies decreased by 1.0 percentage point, and currency had a negative impact of 1.6 percentage points, resulting in a net decline of 2.6 percentage points to 11.7% of net sales. Adjustments to arrive at core operating income amounted to $2.5 billion, consisting of $2.0 billion for the amortization of intangible assets, $330 million of acquisition-related items, $61 million for the impairment of intangible assets and property, plant and equipment, $18 million for a net increase in contingent consideration, and $64 million of other costs. Prior-year adjustments of $2.2 billion included $1.9 billion of intangible asset amortization and $0.3 billion of acquisition-related items.

Core operating income was in line with prior year in reported terms, but up 6% in constant currencies. Core operating income margin in constant currencies increased by 0.1 percentage points; currency had a negative impact of 1.1 percentage points, resulting in a net decrease of 1.0 percentage points to 35.2% of net sales.

Core gross margin declined by 1.0 percentage point (cc), mainly due to product mix as Alcon refreshes and expands its surgical equipment install base. Marketing & Sales expenses as a percentage of net sales decreased by 0.8 percentage points (cc) compared to 2012, driven by synergies and productivity improvements, partially offset by investments in new launches. General & Administration expenses increased by 0.4 percentage points (cc), while R&D expenses decreased by 0.6 percentage points (cc). Other Income and Expense, net increased margin by 0.1 percentage points (cc).

Sandoz

Operating income decreased by 6% (3% cc) to $1.0 billion. The operating income margin in constant currencies decreased by 1.0 percentage point; currency had a negative impact of 0.3 percentage points, resulting in a net decrease of 1.3 percentage points to 11.2% of net sales, driven by $85 million of legal provisions and the prior-year US authorized generic launch of valsartan HCT. Adjustments to arrive at core operating income amounted to a net expense of $513 million, mainly driven by $409 million for the amortization of intangible assets, as well as $85 million for legal provisions and $20 million for impairments of intangible assets. Prior-year adjustments of $412 million included $364 million of intangible asset amortization and $62 million of acquisition-related items.

Core operating income grew by 3% (+4% cc) to $1.5 billion. The difference between reported and core operating income growth was driven by higher exceptional items, particularly the aforementioned $85 million for legal provisions, compared to the previous year. Core operating income margin in constant currencies decreased by 0.1 percentage points; currency had a negative impact of 0.4 percentage points, resulting in a net decrease of 0.5 percentage points to 16.8% of net sales.

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Core gross margin decreased by 1.0 percentage points (cc) as a result of the very high-margin US authorized generic sales of valsartan HCT in the prior year. Marketing & Sales expenses as a percentage of net sales increased by 0.4 percentage points (cc), driven by investments into strongly growing businesses in emerging markets. R&D expenses decreased by 0.1 percentage points (cc) as overall investments grew slower than sales, despite the continued ramp-up of investments into biosimilars and respiratory pipeline products. General & Administration expenses increased by 0.1 percentage points (cc). Other Income and Expense, net improved margin by 1.3 percentage points (cc) due to lower litigation costs and legal settlements in 2013 and restructuring costs in the prior year.

Vaccines and Diagnostics

Operating loss was $165 million, $85 million less than the $250 million operating loss in 2012. Adjustments to arrive at core operating loss amounted to $230 million, including $222 million for the amortization of intangible assets. This compares to adjustments of $175 million in 2012, which benefited from an exceptional licensing settlement of $56 million.

Core operating income was $65 million compared to a loss of $75 million for the prior period. This improvement was mainly driven by the impact of strong sales and higher other revenues.

Consumer Health

Consumer Health, which is continuing to recover from supply disruption in 2012, reported operating income of $178 million compared to $48 million in the prior-year period, driven by gross margin from incremental sales and higher income from minor divestments, partially offset by commercial investment behind re-launches and Lincoln restructuring expenses in the first quarter of 2013. Operating income margin in constant currencies increased by 3.4 percentage points, and currency had a negative impact of 0.3 percentage points, resulting in a margin of 4.4% of net sales. Adjustments to arrive at core operating income for the year amounted to $120 million, consisting mainly of the amortization and impairment of intangible assets and Lincoln restructuring costs. Prior-year adjustments amounted to $111 million.

Core operating income increased 87% (+95% cc) to $298 million. Core operating income margin in constant currencies increased 3.4 percentage points; currency had a negative impact of 0.4 percentage points, resulting in a net increase of 3.0 percentage points to 7.3% of net sales.

Lower costs to upgrade quality at the Lincoln facility and higher revenues generated a core gross margin increase of 2.8 percentage points (cc). Marketing & Sales expenses as a percentage of net sales increased by 0.1 percentage points (cc) behind investments to support the re-launch of products as well as investments into key brands and Emerging Growth Markets. R&D expenses decreased by 0.4 percentage points (cc), and General & Administration expenses increased by 0.5 percentage points (cc). Other Income and Expense, net increased core operating income margin by 0.8 percentage points (cc).

Corporate Income and Expense, Net

Corporate income and expense amounted to a net expense of $739 million compared to $759 million in the prior-year period. Total adjustments of $103 million in both periods were mainly related to finance and IT transformation costs, which were partly offset by the release of Corporate provisions of $75 million in 2013 and in 2012 by the exceptional gain of $51 million from the sale of financial assets.

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Non-operating Income and Expense

	Year ended Dec 31, 2013	Restated Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Operating income	**10,910**	**11,193**[1]	**(3)**	**5**
Income from associated companies	600	552	9	9
Interest expense	(683)	(724)	6	6
Other financial income and expense	(92)	(96)	4	30
Income before taxes	**10,735**	**10,925**	**(2)**	**6**
Taxes	(1,443)	(1,542)	6	(1)
Net income	**9,292**	**9,383**	**(1)**	**7**
Attributable to:				
Shareholders of Novartis AG	*9,175*	*9,270*	*(1)*	*7*
Non-controlling interests	*117*	*113*	*4*	*4*
Basic EPS ($)	**3.76**	**3.83**	**(2)**	**6**

(1) Other income and Other expense included in operating income have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

Core Non-operating Income and Expense

	Year ended Dec 31, 2013	Restated Year ended Dec 31, 2012	Change in $	Change in constant currencies
	$ m	$ m	%	%
Core operating income	**14,485**	**14,842**[1]	**(2)**	**3**
Income from associated companies	877	755	16	16
Interest expense	(683)	(724)	6	6
Other financial income and expense	(48)	(96)	50	30
Core income before taxes	**14,631**	**14,777**	**(1)**	**4**
Taxes	(2,098)	(2,201)	5	0
Core net income	**12,533**	**12,576**	**0**	**5**

Attributable to:				
Shareholders of Novartis AG	*12,416*	*12,463*	*0*	*5*
Non-controlling interests	*117*	*113*	*4*	*4*
Core basic EPS ($)	**5.09**	**5.15**	**(1)**	**4**

(1) Other income and Other expense included in core operating income have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

INCOME FROM ASSOCIATED COMPANIES

The income from associated companies increased from $552 million in 2012 to $600 million in 2013. The increase was primarily due to an estimated higher net result of Roche AG.

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The following is a summary of the individual components included in the income from associated companies:

	2013 $ m	2012 $ m
Novartis share of Roche's estimated current-year consolidated net income	817	709
Prior-year adjustment	(59)	(18)
Amortization of additional intangible assets recognized by Novartis on initial accounting for the equity interest	(154)	(153)
Net income effect from Roche	**604**	**538**
Net (loss)/income from other associated companies	**(4)**	**14**
Income from associated companies	**600**	**552**

The Group's 33.3% interest in Roche's voting shares, which represents a 6.3% interest in Roche's total equity, generated income of $604 million in 2013, up from $538 million in 2012. The 2013 contribution reflects an estimated $817 million share of Roche's net income in 2013. This contribution, however, was reduced by a prior year adjustment of $59 million based on the Roche 2012 results published after the 2012 Novartis consolidated financial statements and $154 million for the amortization of intangible assets arising from the allocation to intangible assets of the purchase price paid by Novartis for this investment in Roche. A survey of analyst estimates is used to estimate the Group's share of net income in Roche. Any differences between these estimates and actual results will be adjusted in the 2014 consolidated financial statements.

Adjusting for the exceptional items in both years, core income from associated companies increased 16% from $755 million to $877 million.

Interest Expense and other financial income/expense

Interest expense decreased to $683 million in 2013 from $724 million in 2012. Slightly higher interest expenses were more than offset by lower charges from the unwinding of discounted liabilities. Other financial income and expense amounted to a net expense of $92 million compared to $96 million in 2012 mainly due to lower currency losses.

Taxes

The tax rate (taxes as percentage of pre-tax income) decreased to 13.4% in 2013 from 14.1% in 2012 due to lower profit before tax in higher tax jurisdictions.

The core tax rate (taxes as a percentage of core pre-tax income) was 14.3% in 2013, down from 14.9% in 2012.

For further information on the main elements contributing to the difference, see " Core Results" below and "Item 18. Financial Statements Note 6".

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2012 Compared to 2011

Key Figures

	Restated Year ended Dec 31, 2012[1] $ m	Restated Year ended Dec 31, 2011[1] $ m	Change in $ %	Change in constant currencies %
Net sales	**56,673**	**58,566**	**(3)**	**0**
Other revenues	888	809	10	11
Cost of goods sold	(18,756)	(18,983)	1	(2)
Gross profit	**38,805**	**40,392**	**(4)**	**(1)**
Marketing & Sales	(14,353)	(15,079)	5	1
Research & Development	(9,332)	(9,583)	3	0
General & Administration	(2,937)	(2,970)	1	(3)
Other income	1,049	1,192	(12)	(4)
Other expense	(2,039)	(3,172)	36	33
Operating income	**11,193**	**10,780**	**4**	**7**
Income from associated companies	552	528	5	5
Interest expense	(724)	(751)	4	1
Other financial income and expense	(96)	(2)	nm	nm
Income before taxes	**10,925**	**10,555**	**4**	**7**
Taxes	(1,542)	(1,483)	(4)	(6)
Net income	**9,383**	**9,072**	**3**	**7**
Attributable to:				
Shareholders of Novartis AG	*9,270*	*8,940*	*4*	*7*
Non-controlling interests	*113*	*132*	*(14)*	*(14)*
Basic earnings per share ($)	**3.83**	**3.75**	**2**	**5**
Free cash flow	**11,383**	**12,503**	**(9)**	

nm = not meaningful

(1) In 2012 Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

Core Key Figures

	Restated Year ended	Restated Year ended	Change in $	Change in constant

	Dec 31, 2012[1]	Dec 31, 2011[1]		currencies
	$ m	$ m	%	%
Core gross profit	**41,847**	**43,839**	**(5)**	**(2)**
Marketing & Sales	(14,352)	(15,077)	5	1
Research & Development	(9,116)	(9,239)	1	(2)
General & Administration	(2,923)	(2,957)	1	(3)
Other income	675	281	140	164
Other expense	(1,289)	(1,156)	(12)	(20)
Core operating income	**14,842**	**15,691**	**(5)**	**(3)**
Core net income	**12,576**	**13,317**	**(6)**	**(3)**
Core basic earnings per share ($)	**5.15**	**5.50**	**(6)**	**(4)**

(1) In 2012 Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

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Group Overview

Net sales amounted to $56.7 billion (-3%, 0% cc), as growth in recently launched products (products launched since 2007, except Sandoz products launched in last 24 months) absorbed patent expiries. Currency depressed results by 3 percentage points as a result of the strengthening of the dollar against most currencies.

Across the Group's diversified healthcare portfolio, recently launched products continued to perform strongly and in 2012 comprised 29% of Group net sales, up from 25% a year ago.

Operating income increased 5% (+8% cc) to $11.5 billion. The strengthening of the US dollar resulted in a negative currency impact of 3 percentage points. Cost of goods sold decreased by 1% (+2% cc) to $18.8 billion in 2012, but represented an increase of 0.7 percentage points to 33.1% of net sales. This led to a reduction in the gross margin by 0.5 percentage points (cc) to 68.5%. Marketing & Sales expenses decreased 5% (-1% cc) to $14.4 billion, improving 0.4 percentage points to 25.3% of net sales, as productivity improvements and changes in the portfolio mix were partly offset by investments in new launch products. R&D expenses decreased by 3% (0% cc) in 2012 to $9.3 billion. This included $109 million in impairments of intangible assets. General & Administration expenses decreased by 1% (+3% cc) to $2.9 billion. Other income was down 12% (-6% cc) to $1.2 billion and largely consisted of a *Tekturna/Rasilez* provision reduction, divestment gains and restructuring provision releases. Other expense was down 40% (-37% cc) to $1.9 billion and included acquisition-related charges and restructuring costs.

In 2012, the adjustments made to Group operating income to arrive at core operating income amounted to $3.6 billion (2011: $4.9 billion). These adjustments included the amortization of intangible assets of $2.9 billion (2011: $3.0 billion) and exceptional net expense of $773 million (2011: $1.9 billion).

The significant exceptional expense items, net, in 2012 were $149 million for a United States restructuring in Pharmaceuticals and $265 million of Alcon integration costs, which were offset by exceptional gains of $472 million. The previous year benefited from exceptional product divestment and other gains of $1.0 billion, offset by a number of exceptional expense items totaling $2.9 billion, principally the *Tekturna/Rasilez*-related impairment and other charges of $903 million, restructuring charges of $487 million and a legal settlement of $204 million.

Group core operating income, which excludes exceptional items and amortization of intangible assets, decreased 5% (-2% cc) to $15.2 billion. Core operating income margin in constant currencies decreased by 0.7 percentage points. A positive currency impact of 0.2 percentage points resulted in a core operating income margin of 26.7% of net sales.

Group net income increased 4% (+7% cc) to $9.6 billion following the increase in operating income. EPS increased 3% (+6% cc) to $3.93 from $3.83 in the prior year.

Group core net income was down 5% (-3% cc) to $12.8 billion, in line with core operating income. Core EPS declined 6% (-3% cc) to $5.25.

Free cash flow of $11.4 billion was $1.1 billion lower than the prior year mainly on account of higher investments in property, plant and equipment as well as in intangible and other non-current assets and lower proceeds from the sale of non-current assets which amounted to $0.5 billion in the current period compared to $0.8 billion in the previous year.

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Net Sales by Segments

	Year ended Dec 31, 2012	Year ended Dec 31, 2011	Change in $	Change in constant currencies
	$ m	$ m	%	%
Pharmaceuticals	**32,153**	**32,508**	**(1)**	**2**
Alcon	**10,225**	**9,958**	**3**	**5**
Sandoz	**8,702**	**9,473**	**(8)**	**(4)**
Vaccines and Diagnostics	**1,858**	**1,996**	**(7)**	**(4)**
Consumer Health	**3,735**	**4,631**	**(19)**	**(16)**
Net sales	**56,673**	**58,566**	**(3)**	**0**

	Year ended Dec 31, 2012	Year ended Dec 31, 2011	Change in $	Change in constant currencies
	$ m	$ m	%	%
Established Markets*	**42,834**	**44,774**	**(4)**	**(2)**
Emerging Growth Markets*	**13,839**	**13,792**	**0**	**6**
Net Sales	**56,673**	**58,566**	**(3)**	**0**

* Emerging Growth Markets comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand.

Pharmaceuticals

Net sales were $32.2 billion (-1%, +2% cc), driven by 8 percentage points of volume growth, partially offset in constant currencies by the negative impact of generic competition ($1.9 billion, -6 percentage points) and slightly negative pricing. Recently launched major products (products launched since 2007, including *Lucentis, Tasigna, Exjade, Sebivo/Tyzeka, Exforge, Galvus, Aclasta/Reclast, Cubicin, Exelon* Patch, *Afinitor/Votubia, Tekturna/Rasilez, Onbrez, Gilenya, Fanapt* and *Ilaris*) contributed $11.4 billion or 35% of net sales for the division, compared to 28% in 2011.

Regionally, Europe ($10.2 billion, -5% cc) saw a strong performance of recently launched products but was impacted by generic competition, mainly for *Diovan*, and by negative price effects. Performance in the United States ($10.4 billion, +4% cc) benefited from robust growth for *Tasigna*, *Gilenya* and *Afinitor*, and was only partly impacted by generic competition to *Diovan* ($2.1 billion, -11% cc), as no generic competitor to *Diovan* mono-substance was approved in the United States by the end of 2012 (while the combination product, *Diovan HCT,* faced competition from a single generic competitor holding 180-day exclusivity and from Sandoz with an authorized generic). Japan's performance ($4.0 billion, +3% cc) improved versus 2011 due to new launches which more than offset the biennial price cut. Latin America and

Canada ($3.1 billion, +9% cc) achieved strong growth rates fueled by new product launches despite the *Diovan* generic impact in Canada. Emerging Growth Markets ($7.4 billion, +6% cc) were driven by double-digit growth in China and India.

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TOP 20 PHARMACEUTICALS DIVISION PRODUCT NET SALES 2012

Brands	Business franchise	Indication	Net sales United States	Change in constant currencies	Net sales Rest of world	Change in constant currencies	Total net sales	Change in $	Change in constant currencies
			$ m	%	$ m	%	$ m	%	%
Gleevec/Glivec	Oncology	Chronic myeloid leukemia	1,698	16	2,977	(2)	**4,675**	**0**	**4**
Diovan/Co Diovan	Primary care	Hypertension	2,087	(11)	2,330	(28)	**4,417**	**(22)**	**(21)**
Lucentis	Ophthalmics	Age-related macular degeneration			2,398	22	**2,398**	**17**	**22**
Sandostatin	Oncology	Acromegaly	649	13	863	5	**1,512**	**5**	**8**
Exforge	Primary care	Hypertension	358	10	994	18	**1,352**	**12**	**16**
Zometa	Oncology	Cancer complications	561	(13)	727	(10)	**1,288**	**(13)**	**(11)**
Gilenya	Neuroscience	Relapsing multiple sclerosis	727	90	468	nm	**1,195**	**142**	**147**
Exelon/Exelon **Patch**	Neuroscience	Alzheimer's disease	428	14	622	(4)	**1,050**	**(2)**	**2**
Tasigna	Oncology	Chronic myeloid leukemia	351	38	647	47	**998**	**39**	**44**
Galvus	Primary care	Diabetes			910	43	**910**	**34**	**43**
Exjade	Oncology	Iron chelator	251	(3)	619	11	**870**	**2**	**7**
Neoral/Sandimmun	Integrated Hospital Care	Transplantation	64	(10)	757	(6)	**821**	**(9)**	**(6)**
Afinitor/Votubia	Oncology	Breast cancer	412	142	385	49	**797**	**80**	**85**
Voltaren **(excl. other divisions)**	Additional products	Inflammation/pain	1	(75)	758	1	**759**	**(4)**	**0**
Reclast/Aclasta	Established medicines	Osteoporosis	354	(8)	236	9	**590**	**(4)**	**(2)**
Myfortic	Integrated Hospital Care	Transplantation	239	20	340	14	**579**	**12**	**16**
Ritalin/Focalin	Additional products	Attention deficit/ hyperactivity disorder	402	1	152	8	**554**	**1**	**3**
Comtan/Stalevo	Neuroscience	Parkinson's disease	147	(31)	383	0	**530**	**(14)**	**(11)**
Xolair	Critical Care	Asthma			504	15	**504**	**5**	**12**
Femara	Oncology	Breast cancer	22	(90)	416	(37)	**438**	**(52)**	**(50)**
Top 20 products total			**8,751**	**6**	**17,486**	**3**	**26,237**	**0**	**4**
Rest of portfolio			1,641	(3)	4,275	(5)	**5,916**	**(7)**	**(4)**
Total Division sales			**10,392**	**4**	**21,761**	**1**	**32,153**	**(1)**	**2**

nm = not meaningful

Pharmaceuticals Division Product Highlights Leading Products

Net sales growth data below refer to 2012 worldwide performance. Growth rates are not provided for some recently launched products since they are not meaningful.

Gleevec/Glivec ($4.7 billion, +4% cc) continued to grow as a treatment for adult patients with metastatic and/or unresectable KIT+ gastrointestinal stromal tumors (GIST), as an adjuvant treatment for certain adult patients following resection of KIT+ GIST, and as a targeted therapy for Philadelphia

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chromosome-positive chronic myeloid leukemia (Ph+ CML). Our Bcr-Abl franchise, which consists of *Gleevec/Glivec* and *Tasigna*, grew strongly in 2012, reaching net sales of $5.7 billion (+9% cc).

Diovan Group ($4.4 billion, -21% cc), consisting of mono-substance *Diovan* and combination product *Diovan HCT*, saw worldwide sales decline due to the loss of exclusivity of both products in the European Union, Canada and the United States. Performance was sustained in key Emerging Growth Markets such as China, as well as select countries in Latin America, Asia Pacific, Middle East and Africa.

Lucentis ($2.4 billion, +22% cc) grew strongly as the only anti-VEGF therapy licensed in many countries for three ocular indications: wet age-related macular degeneration (wet AMD), visual impairment due to diabetic macular edema (DME), and visual impairment due to macular edema secondary to retinal vein occlusion (RVO). In wet AMD, *Lucentis* is approved in more than 100 countries and individualized treatment consistent with its EU label is the standard of care. *Lucentis* is approved for the treatment of visual impairment due to DME and visual impairment due to macular edema secondary to RVO in more than 80 countries. In September and October of 2012, we filed regulatory submissions in the European Union and Japan for *Lucentis* as a treatment for visual impairment due to choroidal neovascularization secondary to pathological myopia. Genentech/Roche holds the rights to *Lucentis* in the United States.

Sandostatin ($1.5 billion, +8% cc), a somatostatin analogue used as a treatment for patients with functional gastroenteropancreatic tumors as well as acromegaly, continued to benefit from increasing use of *Sandostatin LAR* in key markets. A new presentation of *Sandostatin LAR*, which includes an enhanced diluent, safety needle and vial adapter, has been approved in 26 countries to date with additional filings underway. *Sandostatin* is also approved in more than 39 countries for the delay of disease progression in patients with advanced neuroendocrine tumors of the midgut or unknown primary tumor location.

Exforge Group ($1.4 billion, +16% cc), which includes *Exforge* and *Exforge HCT*, continued to grow at a solid double-digit rate, fueled by continued demand in the United States, Asia Pacific and Middle East, as well as ongoing *Exforge HCT* launches in Asia and Latin America. *Exforge* delivered double-digit growth globally and is now available for patients in more than 100 countries. *Exforge HCT*, which consists of *Exforge* with a diuretic in a single pill, is now available in over 60 countries.

Zometa ($1.3 billion, -11% cc), which is used in an oncology setting to reduce or delay skeletal-related events in patients with bone metastases from solid tumors and multiple myeloma, declined as anticipated in 2012 due to competition.

Gilenya ($1.2 billion, +147% cc) continued to show rapid growth as the first once-daily oral therapy approved for relapsing remitting and/or relapsing forms of multiple sclerosis (MS and RRMS) in adult patients, and achieved blockbuster status in 2012 with $1.2 billion in annual sales. *Gilenya* is indicated in the United States for relapsing forms of MS, and in the European Union for adult patients with highly active RRMS, defined as either high disease activity despite treatment with beta interferon, or rapidly evolving severe RRMS. As of December 2012, there are approximately 56,000 patients who have been treated with *Gilenya* in clinical trials and in a post-marketing setting, and approximately 62,000 patient years of exposure. In April 2012, following completion of their safety reviews, the FDA and EMA both confirmed the positive benefit-risk profile of *Gilenya* when used in accordance with updated product information, which for both regions includes additional requirements (such as blood pressure monitoring and electrocardiograms) for the existing six-hour observation period following the first dose and more specific guidance on patient selection parameters to aid in the identification of patients suitable for *Gilenya* treatment. In particular situations, it is recommended that the first dose monitoring period be extended. *Gilenya* is currently approved in over 65 countries around the world, and is licensed from Mitsubishi Tanabe Pharma Corporation.

Exelon/Exelon Patch ($1.1 billion, +2% cc) combined sales increased slightly in 2012 as a therapy for mild-to-moderate forms of Alzheimer's disease dementia as well as dementia linked with Parkinson's disease. *Exelon* Patch, the novel transdermal form of the medicine launched in 2007 and now available in

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more than 80 countries worldwide, generated the majority of the sales. In August 2012, the FDA approved a higher dose of *Exelon* Patch for the treatment of people with mild-to-moderate Alzheimer's disease and mild to moderate Parkinson's disease dementia. In November 2012, CHMP issued a positive opinion for the approval of the higher dose of *Exelon* Patch for the treatment of patients with mild-to-moderately severe Alzheimer's disease in Europe.

Tasigna ($1.0 billion, +44% cc) grew rapidly as a more effective, targeted therapy for certain adult patients with Ph+ CML. It is currently approved as first-line therapy for newly diagnosed patients with Ph+ CML in the chronic phase in more than 80 countries globally, including the United States, European Union, Japan and Switzerland, with additional submissions pending worldwide. *Tasigna* is also approved in more than 100 countries as a second-line treatment for patients with Ph+ CML in chronic and/or accelerated phase who are resistant or intolerant to existing treatment, such as *Gleevec/Glivec. Tasigna* market share continues to rise in both the first-line and second-line settings. This product is part of our Bcr-Abl franchise with net sales of $5.7 billion, (+9% cc), which also includes *Gleevec/Glivec*.

Galvus Group ($910 million, +43% cc), which includes *Galvus* (vildagliptin), an oral treatment for type 2 diabetes, and *Eucreas*, a single-pill combination of vildagliptin and metformin, delivered strong growth in key markets, particularly in Europe, Japan, Latin America and Asia Pacific. Performance was driven by a continued focus on patients whose diabetes remains uncontrolled on metformin, as well as an expansion of usage in new patient segments based on new indications. *Galvus* is currently approved in more than 100 countries. *Eucreas* was the first single-pill combining a DPP-4 inhibitor and metformin to be launched in Europe and is currently approved in more than 85 countries.

Exjade ($870 million, +7% cc), a once-daily oral therapy for blood transfusion iron overload approved in more than 100 countries, saw steady sales growth as a decline in the United States was more than offset by growth in Europe, Latin America, Canada and Japan. Worldwide regulatory filings are underway and the EMA has approved *Exjade* as a treatment for patients with non-transfusion-dependent thalassemia syndromes, a diverse group of genetic disorders that cause anemia, with a first approval achieved in Canada.

Neoral/Sandimmun ($821 million, -6% cc), an immunosuppressant primarily used to prevent organ rejection following a kidney, liver or heart transplant, experienced only modestly declining sales, despite ongoing generic competition, due to its pharmacokinetic profile, reliability and use in treating a life-threatening condition. *Neoral* is also approved for use in lung transplant patients in many countries outside the United States, and is also indicated for treatment of select autoimmune disorders such as psoriasis and rheumatoid arthritis. *Neoral* is marketed in approximately 100 countries.

Afinitor/Votubia ($797 million, +85% cc), an oral inhibitor of the mTOR pathway, accelerated its strong growth trajectory in 2012 following FDA and EMA approvals in HR+/HER2- advanced breast cancer. Everolimus, the active ingredient in *Afinitor/Votubia*, was also approved in the United States as *Afinitor* and in the European Union as *Votubia* for the treatment of adult patients with renal angiomyolipomas and subependymal giant cell astrocytomas (SEGAs) associated with tuberous sclerosis complex who do not require immediate surgery. The FDA also granted approval for a new formulation, *Afinitor Disperz* tablets, for patients with SEGAs. *Afinitor/Votubia* is now approved in five indications in the United States and four in the European Union. Everolimus is available under the trade names *Zortress/Certican* for use in other non-oncology indications and is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Voltaren/Cataflam ($759 million, 0% cc), a leading non-steroidal anti-inflammatory drug available in more than 140 countries, saw stable sales as competition was offset by continued growth in regions such as Latin America, the Middle East, Africa and Asia based on long-term trust in the brand. Indicated for the relief of symptoms in rheumatic diseases like rheumatoid arthritis and osteoarthritis, and for various other inflammatory and pain conditions, *Voltaren/Cataflam* is marketed by the Pharmaceuticals Division in a

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wide variety of dosage forms. In addition, in various countries, our OTC Division markets low-dose oral forms and the topical therapy of *Voltaren* as over-the-counter products.

Reclast/Aclasta ($590 million, -2% cc), a once-yearly bisphosphonate infusion for the treatment of certain forms of osteoporosis and Paget's disease of the bone, saw sales decline slightly in 2012. Sold as *Reclast* in the United States and *Aclasta* in the rest of the world, the product is approved in more than 100 countries for up to six indications. It is also the only bisphosphonate approved to reduce the incidence of fractures at all three key fracture sites (hip, spine and non-spine) in the treatment of postmenopausal osteoporosis. Zoledronic acid, the active ingredient in *Reclast/Aclasta*, is also approved in a number of countries in a different dosage under the trade name *Zometa* for certain oncology indications.

Myfortic ($579 million, +16% cc), a transplantation medicine, continued to grow as a treatment for the prevention of acute rejection of kidney allografts. It is approved for this indication, in combination with cyclosporine and corticosteroids, in more than 90 countries.

Ritalin/Focalin ($554 million, +3% cc) continued to grow as a treatment for attention deficit hyperactivity disorder (ADHD) in children. *Ritalin* and *Ritalin LA* are available in more than 70 and 30 countries, respectively, and are also indicated for narcolepsy. *Focalin* and *Focalin XR* are available in the United States, and *Focalin XR,* which is additionally indicated for adults, is also approved in Switzerland. Immediate release *Focalin* is subject to generic competition.

Comtan/Stalevo ($530 million, -11% cc), indicated for the treatment of Parkinson's disease, saw sales decline in 2012 due to generic competition in some markets. *Stalevo* (carbidopa, levodopa and entacapone) is indicated for certain Parkinson's disease patients who experience end-of-dose motor fluctuations, known as "wearing off". *Stalevo* is available in more than 50 countries. *Comtan* (entacapone) is also indicated for the treatment of Parkinson's disease patients who experience end-of-dose wearing off and is marketed in approximately 50 countries. Both products are marketed by Novartis under a licensing agreement with the Orion Corporation.

Xolair ($504 million, +12% cc), a biologic drug for severe persistent allergic asthma in Europe and moderate-to-severe persistent allergic asthma in the United States, is now approved in more than 90 countries and continued to grow strongly in Europe, Japan, Canada and Latin America. Novartis co-promotes *Xolair* with Genentech/Roche in the United States and shares a portion of operating income, but does not book United States sales. A Phase III trial is progressing to support registration in China. Omalizumab, the active ingredient in *Xolair*, is also in Phase III development for the treatment of a debilitating skin disease called chronic idiopathic urticaria, with regulatory filing planned in 2013.

Femara ($438 million, -50% cc), a treatment for early stage and advanced breast cancer in postmenopausal women, experienced a decline in sales due to multiple generic entries in the United States, Europe and other key markets.

Other Products of Significance

Tekturna/Rasilez ($383 million, -29% cc) sales declined following label updates in the European Union, United States and Japan. The label updates followed our decision in December 2011 to halt the ALTITUDE study. Patient safety is the highest priority for Novartis and we are sharing the end-of-treatment results which confirmed the preliminary findings with health authorities worldwide as required. Novartis voluntarily ceased to market *Valturna*, a single-pill combination containing aliskiren and valsartan, in the United States as of July 2012.

TOBI ($317 million, +9% cc) sales, including both *TOBI* nebulizer solution and *TOBI Podhaler* formulations of the antibiotic tobramycin, continued to grow with *TOBI Podhaler* capturing 13% of total sales in 2012. Both products are used for the management of Pseudomonas aeruginosa infection in cystic fibrosis patients aged six years and older. *TOBI Podhaler*, approved in the European Union, Canada, Switzerland and other countries can be delivered using a portable, pocket-sized inhaler that reduces

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administration time by approximately 70% relative to *TOBI*. In the United States, Novartis has responded to the FDA's October 2012 Complete Response Letter for *TOBI Podhaler* (the provisional US trade name) in October 2012 and anticipates an FDA action in the middle of 2013. An FDA Advisory Committee previously voted 13 to 1 that there was adequate evidence of efficacy and safety to support its use in the proposed indication.

Zortress/Certican ($210 million, +20% cc), a transplantation medicine available in more than 90 countries to prevent organ rejection in adult heart and kidney transplant patients, continued to generate robust growth. It is also approved to prevent organ rejection for liver transplant patients in the European Union (as of October 2012), Argentina, Chile and Philippines. Everolimus, the active ingredient in *Zortress/Certican*, is marketed for other indications under the trade names *Afinitor/Votubia*. Everolimus is exclusively licensed to Abbott and sublicensed to Boston Scientific for use in drug-eluting stents.

Extavia ($159 million, +9% cc), the Novartis-branded version of Betaferon®/Betaseron® (interferon beta-1b) for relapsing forms of MS, continued to grow in key markets. *Extavia* is available in more than 35 countries, including the United States.

Arcapta Neohaler/Onbrez Breezhaler ($134 million, +39% cc) continued to grow strongly worldwide as a once-daily long-acting beta$_2$-agonist (LABA) for the maintenance bronchodilator treatment of airflow obstruction in adult patients with chronic obstructive pulmonary disease (COPD). Indacaterol, the active ingredient in *Arcapta Neohaler/Onbrez Breezhaler,* is now approved in more than 90 countries.

Ilaris ($72 million, +56% cc) showed strong growth as a treatment for adults and children suffering from cryopyrin-associated periodic syndrome (CAPS), a group of rare disorders characterized by chronic recurrent fever, urticaria, occasional arthritis, deafness, and potentially life threatening amyloidosis. *Ilaris* is approved for the treatment of CAPS in over 60 countries.

In January 2013, the CHMP of the EMA has adopted a positive opinion of *Ilaris* (canakinumab) for the treatment of patients whose acute gouty arthritis cannot be managed with standard of care. Approval by the European Commission is expected in the first half of 2013.

Jakavi ($30 million) sales grew as an oral inhibitor of the JAK 1 and JAK 2 tyrosine kinases and was approved in the European Union and Canada in the second half of 2012 for the treatment of disease-related splenomegaly or symptoms in adult patients with primary myelofibrosis (also known as chronic idiopathic myelofibrosis), post-polycythemia vera myelofibrosis or post-essential thrombocythemia myelofibrosis. *Jakavi* is available in 31 countries with additional worldwide regulatory filings underway. Incyte holds the rights for *Jakavi* in the United States where it is sold as Jakavi®.

Alcon

Net sales rose 3% (+5% cc) to $10.2 billion, driven by sales growth in Surgical (+5%, +8% cc), Ophthalmic Pharmaceuticals (+2%, +5% cc), and Vision Care (+1%, +4% cc) compared to the prior year.

Surgical sales growth was led by robust sales of Cataract, Vitreoretinal and Refractive equipment, advanced technology IOLs and procedural growth in Emerging Growth Markets. Ophthalmic Pharmaceuticals sales benefited from growth of the *Systane* (Dry Eye), *Nevanac* (Inflammation) and *Durezol* (Inflammation) brands, as well as strong growth in combination glaucoma brands *DuoTrav* and *Azarga*. The Ophthalmic Pharmaceuticals performance was offset by sales of *Travatan* in the United States with the generic entry of latanoprost into the glaucoma category. Vision Care maintained its solid sales performance with growth of *Air Optix*, a strong launch uptake of *Dailies Total1* lenses in Europe, and modest growth in the lens care solution business.

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Alcon Division net sales by product category:

	Year ended Dec 31, 2012 $ m	Year ended Dec 31, 2011 $ m	Change in $ %	Constant currencies change %
Surgical				
Cataract products	2,932	2,858	3	6
of which cataract IOLs	*1,281*	*1,276*	*0*	*4*
Vitreoretinal products	578	529	9	12
Refractive/other	242	200	21	24
Total	**3,752**	**3,587**	**5**	**8**
Ophthalmic Pharmaceuticals				
Glaucoma	1,259	1,287	(2)	1
Allergy/otic/nasal	901	884	2	3
Infection/inflammation	1,011	967	5	8
Dry eye/other	848	810	5	8
Total	**4,019**	**3,948**	**2**	**5**
Vision Care				
Contact lenses	1,732	1,701	2	5
Contact lens care	722	722	0	2
Total	**2,454**	**2,423**	**1**	**4**
Total net sales	**10,225**	**9,958**	**3**	**5**

Alcon Division Franchise Highlights

Net sales growth data below refer to 2012 worldwide performance.

Surgical

In 2012, global Surgical net sales were $3.8 billion, up 5% (+8% cc) over the previous year. Advanced technology IOLs showed continued strong growth of 13% (+16% cc), led by *AcrySof IQ Toric.* The launch of the *AcrySof IQ ReSTOR +2.5D Multifocal IOL* and *AcrySof IQ ReSTOR +2.5D Multifocal Toric IOL* in Europe also contributed to growth.

Global sales of *LenSx* femtosecond cataract refractive lasers grew 234% (cc), continued global launches contributing to strong *LenSx* uptake. *LenSx* lasers have now been installed or shipped to more than 40 markets and more than 1,000 surgeons have been trained to use this innovative technology. In addition, the *LenSx SoftFit* Patient Interface, Alcon's latest *LenSx* laser platform, was launched in the United States for use during cataract surgery.

Surgical also experienced growth in the Vitreoretinal category, driven by sales of *Constellation* equipment, which grew 28% (cc) in markets outside the United States. The Refractive/Other segment also grew, driven by *Wavelight FS200* and *EX500* product launches, offering faster treatment times during refractive surgery.

Ophthalmic Pharmaceuticals

Global net sales of Ophthalmic Pharmaceuticals products increased by 2% (+5% cc) in 2012, driven by non-US glaucoma product sales, inflammation products *Durezol* and *Nevanac*, and the *Systane* dry eye portfolio. *Travatan/DuoTrav* solution sales in glaucoma grew by 12% (cc) in markets outside the United

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States, offset by the impact of generic competition in the United States. Infection/Inflammation product sales grew 10% (cc), led by strong growth of the *Durezol* emulsion and *Nevanac* ophthalmic suspension. *Systane Ultra* and *Systane Balance* were key growth drivers in the Dry Eye segment in Europe, Latin America, the Caribbean, Canada and Asia, with total product portfolio growth of 10% (cc).

Further strengthening growth prospects for Ophthalmic Pharmaceuticals, Alcon received FDA approval for *Durezol* to treat uveitis in 2012. Originally indicated for use as an anti-inflammatory post-surgery, this additional indication will treat inflammation in the uvea near the middle of the eye. *Nevanac* received EU approval for the indication of post-surgical macular edema to treat the inflammatory response in the retina following cataract surgery. In addition, FDA approval was received for *Nepafenac* ophthalmic suspension 0.3% for the treatment of pain and inflammation associated with cataract surgery. Alcon expanded its pharmaceutical offering by entering into a strategic licensing agreement with ThromboGenics to commercialize *Jetrea* (ocriplasmin) outside the United States. Ocriplasmin, which received a positive CHMP opinion in January 2013, may become the first pharmaceutical treatment for vitreomacular traction and macular hole in Europe. In October 2012, *Jetrea* was approved by the FDA.

Vision Care

The Vision Care business continued to grow, with global net sales up 1% (+4% cc, with 5% cc growth in contact lenses and 2% cc growth in lens care products) versus prior year. This growth was driven by the United States and Japan, as well as the continued strong performance of the *Air Optix* portfolio, which leads the marketplace in the multifocal segment and achieved 19% (cc) growth in 2012. Alcon also saw strong *Dailies* growth in the United States, up 14% (cc) over the previous year. *Dailies Total1*, the industry's first and only water gradient contact lens, was launched in Germany, Austria, Italy and France, gaining new users and market share in the silicone hydrogel daily disposable category, and was also approved in the United States and Japan. In lens care, Alcon achieved 10% (cc) growth of the *Clear Care* disinfecting solution.

Sandoz

Sandoz net sales decreased by 8% (-4% cc) in 2012 to $8.7 billion as a result of declines in the United States retail generics and biosimilars (-17% cc) and Germany (-7% cc), partly offset by double-digit sales growth in biosimilars (+36%), the rest of Western Europe (+10% cc) and Asia (+17% cc). Total sales volume decreased 1 percentage point and price erosion was 5 percentage points primarily due to increased competition on United States sales of enoxaparin ($451 million in 2012 compared to $1.0 billion in 2011). Fougera contributed 2 additional percentage points of growth from the inclusion of approximately five months of sales in 2012.

Vaccines and Diagnostics

Net sales were $1.9 billion (-7%, -4% cc) in 2012 compared to $2.0 billion in 2011. 2011 was impacted by the release of bulk pediatric shipments that had been delayed from the fourth quarter of 2010 and a one-time pre-pandemic sale.

The growth of our Meningococcal franchise was underpinned by *Menveo*, which continues to gain market share both in the United States and in the rest of the world, with sales of over $164 million (+18% cc) in 2012.

Consumer Health

Consumer Health net sales declined 19% (-16% cc) mainly due to the impact of the suspension of production at the United States manufacturing site in Lincoln, Nebraska, where operations were suspended at the end of 2011 for quality upgrades and improvements.

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OTC's net sales declined sharply versus the previous year primarily due to Lincoln. Also contributing to the sales decline was a weak cough-and-cold season in early 2012, as well as continued economic deterioration and government austerity measures in several European markets. Despite weak economic conditions, OTC gained market share in most European countries and is growing significantly ahead of the market in key Emerging Growth Markets, notably Russia and China. Increased advertising and promotion investments in growth brands like *Voltaren* and *Otrivin*, the launch of line extensions, and the improvement of commercial execution are the key drivers for these market share gains.

Animal Health reported a net sales decline as a result of limited sales of companion animal products manufactured at Lincoln. Excluding the Lincoln brands, Animal Health maintained strong single-digit growth. The United States continued to show strong momentum, delivering double-digit sales growth excluding the Lincoln brands, mainly driven by *Denagard*, *Atopica* and *Capstar*. Emerging Growth Markets posted high single-digit sales growth with particularly strong performances in China, India, Russia and Brazil.

Operating Income by Segments

	Restated Year ended Dec 31, 2012	% of net sales	Restated Year ended Dec 31, 2011	% of net sales	Change in $	Change in constant currencies
	$ m		$ m		%	%
Pharmaceuticals	**9,598**	**29.9**	**8,296**	**25.5**	**16**	**19**
Alcon	**1,465**	**14.3**	**1,472**	**14.8**	**0**	**6**
Sandoz	**1,091**	**12.5**	**1,422**	**15.0**	**(23)**	**(24)**
Vaccines and Diagnostics	**(250)**	**(13.5)**	**(249)**	**(12.5)**	**0**	**(13)**
Consumer Health	**48**	**1.3**	**727**	**15.7**	**(93)**	**(89)**
Corporate income & expenses, net	(759)[1]		(888)[1]		15	12
Operating income	**11,193**	**19.8**	**10,780**	**18.4**	**4**	**7**

(1) In 2012, Corporate income and expenses, net have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

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Core Operating Income by Segments

	Restated Year ended Dec 31, 2012 $ m	% of net sales	Restated Year ended Dec 31, 2011 $ m	% of net sales	Change in $ %	Change in constant currencies %
Pharmaceuticals	**10,213**	**31.8**	**10,040**	**30.9**	**2**	**5**
Alcon	**3,698**	**36.2**	**3,492**	**35.1**	**6**	**9**
Sandoz	**1,503**	**17.3**	**1,921**	**20.3**	**(22)**	**(21)**
Vaccines and Diagnostics	**(75)**	**(4.0)**	**135**	**6.8**	**nm**	**nm**
Consumer Health	**159**	**4.3**	**873**	**18.9**	**(82)**	**(78)**
Corporate income & expenses, net	(656)[1]		(770)[1]		15	12
Core operating income	**14,842**	**26.2**	**15,691**	**26.8**	**(5)**	**(3)**

nm= not meaningful

(1) In 2012, Corporate income and expenses, net have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

Pharmaceuticals

Pharmaceuticals reported an operating income of $9.6 billion (+16%, +19% cc). The operating income margin increased by 4.3 percentage points (cc) with a positive currency impact of 0.1 percentage points resulting in an operating income margin of 29.9% of net sales.

Adjustments to arrive at core operating income amounted to $615 million, consisting of $322 million for the amortization of intangible assets, $238 million of impairments and $55 million of other exceptional charges. The prior year adjustments amounted to $1.7 billion, principally related to impairments and other charges of $903 million for *Tekturna*/*Rasilez* and restructuring charges of $420 million offset by a $334 million gain due to the divestment of Elidel®.

Core operating income was $10.2 billion (+2%, +5% cc). Constant currency core operating income margin improved by 0.7 percentage points due to continuing productivity efforts. Currency movements had a positive impact of 0.2 percentage points resulting in a core operating income margin of 31.8% of net sales. The underlying gross margin decreased by 1.1 percentage points (cc), mainly driven by royalties and product mix, while R&D expenses improved margin by 0.3 percentage points (cc). As a percentage of net sales, Marketing & Sales and General & Administration expenses improved operating income margin by 0.8 percentage points (cc). Other Income and Expense, net also improved margin by 0.7 percentage points (cc).

As shown below, Pharmaceuticals expensed $6.9 billion (on a core basis $6.7 billion) in research and development in 2012. This represented 21.5% (on a core basis 20.8%) of Pharmaceuticals' total net sales. Pharmaceuticals currently has 138 projects in clinical development.

Research and Exploratory Development expenditure was $2.6 billion in 2012, practically unchanged from the 2011 amount of $2.7 billion. Confirmatory Development expenditures in 2012 decreased by 5% to $4.3 billion as compared against 2011. This included $0.1 billion (2011: $0.3 billion) in impairments of intangible assets. On a core basis, Confirmatory Development expenditure remained unchanged at $4.2 billion in

2012 and represented 13.0% of net sales as in the prior year.

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Pharmaceuticals Research and Development Expenditure

	2012	Core R&D 2012[1]	2011	Core R&D 2011[1]
	$ m	$ m	$ m	$ m
Research and Exploratory Development	2,584	2,530	2,676	2,625
Confirmatory Development	4,334	4,167	4,556	4,235
Total	**6,918**	**6,697**	**7,232**	**6,860**
% of Pharmaceuticals net sales	21.5%	20.8%	22.2%	21.1%

(1) Core excludes impairments, amortization and certain exceptional items.

Alcon

Operating income of $1.5 billion (0%, +6% cc) included amortization of intangible assets of $1.9 billion and integration costs of $264 million, whereas 2011 included an exceptional income of $268 million.

Adjustments to arrive at core operating income amounted to $2.2 billion (2011: $2.0 billion), mainly driven by the amortization of intangible assets of $1.9 billion (2011: $1.9 billion).

Alcon increased core operating income to $3.7 billion (+6%, +9% cc), delivering strong operating leverage through productivity gains and the realization of merger-related cost synergies (2012: $297 million), while continuing to invest in Emerging Growth Markets and R&D. Core operating margin in constant currencies increased by 1.1 percentage points to 36.2% of net sales. Gross margin in constant currencies improved 0.4 percentage points to 74.6% of net sales driven by procurement savings and productivity initiatives. Marketing & Sales expenses, which represented 24.1% of net sales, improved by 1.4 percentage points (cc) due to synergies. General & Administration expenses improved 0.1 percentage points (cc) to 4.9% of net sales. Investments in R&D represented 9.1% of net sales, decreasing 0.4 percentage points (cc) from the prior year.

Sandoz

Operating income at Sandoz was $1.1 billion (-23%, -24% cc). The operating income margin fell by 3.1 percentage points in constant currencies, with a positive currency impact of 0.6 percentage points resulting in an operating income margin of 12.5% of net sales, as a result of enoxaparin-driven price erosion and continued investments into quality assurance and manufacturing as well as into the development of future biosimilar and respiratory products.

Adjustments to arrive at core operating income amounted to $412 million (2011: $499 million). These consist principally of amortization of intangible assets of $364 million (2011: $383 million) and costs related to the Fougera acquisition of $62 million. These were partly offset by a reduction of contingent consideration of $59 million related to a business combination (2011: $106 million) and lower legal settlement costs compared to prior year of $204 million.

Core operating income decreased by 22% (-21% cc) to $1.5 billion. The addition of the Fougera business contributed 1.0 percentage points (cc) to core operating income. Core operating income margin in constant currencies decreased by 3.7 percentage points, partly offset by a positive currency impact of 0.7 percentage points, resulting in a core operating income margin of 17.3% of net sales. Gross margin decreased by 0.9 percentage points (cc), driven primarily by continued investments in quality assurance and manufacturing. R&D expenses (-1.1 percentage points cc) increased as a result of development investments in biosimilars and respiratory products. As a percentage of net sales, Marketing & Sales expenses increased by 1.5 percentage points (cc) as a consequence of investments into growing businesses in biosimilars, Western Europe outside of Germany and Emerging Growth Markets. R&D expenses

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increased by 1.1 percentage points (cc) as a result of our investments into our biosimilars and respiratory pipeline and General & Administration expenses increased by 0.2 percentage points (cc). Other Income and Expense, net was unchanged compared to 2011.

Vaccines and Diagnostics

Reported operating loss was $250 million (2011: $249 million loss) as a result of lower sales and the manufacturing ramp-up for upcoming launches of *Bexsero* and *Flucelvax*. 2012 included a licensing settlement benefit of $56 million, while 2011 included an impairment of $135 million related to a financial asset.

Core operating loss in 2012 was $75 million compared to a core operating income of $135 million in 2011.

Consumer Health

Consumer Health reported an operating income of $48 million versus a prior-year income of $727 million largely due to the impact of the suspension of production and quality upgrade investments at Lincoln, as well as higher income in 2011 from the divestment of OTC non-core brands.

The operating income margin declined 14.4 percentage points to 1.3% of net sales, including a negative currency impact of 0.6 percentage points. Core operating income declined 82% (-78% cc) to $159 million and core operating income margin declined 14.6 percentage points to 4.3% of net sales.

Gross margin decreased 9.4 percentage points (cc) mainly due to disruptions in supply, idle capacity charges at Lincoln as well as one-time quality upgrade investments at the manufacturing facility. As a percentage of net sales, Marketing & Sales expenses increased 2.4 percentage points (cc), R&D expenses increased 1.4 percentage points (cc) and General & Administration expenses increased 0.9 percentage points (cc) largely as a result of lower sales that more than offset the positive impact from cost savings programs. During 2012, both Consumer Health businesses continued to increase overall R&D spending to support their future pipelines and also increased Marketing & Sales spend into products and markets that were not affected by the supply shortage. Other Income and Expense, net increased by 0.1 percentage points (cc).

Corporate Income and Expense, Net

Corporate income and expense, which includes the cost of Group management and central services, amounted to a $759 million net expense, compared to $888 million in 2011, principally due to reductions in environmental, restructuring and other provisions and an exceptional gain of $51 million from the sale of financial assets. Taking into account 2012 core adjustments of $103 million, core corporate income and expense decreased to a net expense of $656 million (2011: $770 million).

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Non-Operating Income and Expense

	Restated Year ended Dec 31, 2012	Restated Year ended Dec 31, 2011	Change in $	Change in constant currencies
	$ m	$ m	%	%
Operating income	**11,193**[1]	**10,780**[1]	**4**	**7**
Income from associated companies	552	528	5	5
Interest expense	(724)	(751)	4	1
Other financial income and expense	(96)	(2)	nm	nm
Income before taxes	**10,925**	**10,555**	**4**	**7**
Taxes	(1,542)	(1,483)	(4)	(6)
Net income	**9,383**	**9,072**	**3**	**7**
Attributable to:				
Shareholders of Novartis AG	*9,270*	*8,940*	*4*	*7*
Non-controlling interests	*113*	*132*	*(14)*	*(14)*
Basic EPS ($)	**3.83**	**3.75**	**2**	**4**

(1) In 2012, Other income and Other expense included in operating income have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

nm= not meaningful

Core Non-Operating Income and Expense

	Restated Year ended Dec 31, 2012	Restated Year ended Dec 31, 2011	Change in $	Change in constant currencies %
	$ m	$ m	%	%
Core operating income	**14,842**[1]	**15,691**[1]	**(5)**	**(3)**
Income from associated companies	755	779	(3)	(3)
Interest expense	(724)	(751)	4	1
Other financial income and expense	(96)	(2)	nm	nm
Core income before taxes	**14,777**	**15,717**	**(6)**	**(4)**
Taxes	(2,201)	(2,400)	8	7
Core net income	**12,576**	**13,317**	**(6)**	**(3)**

Attributable to:				
Shareholders of Novartis AG	*12,463*	*13,100*	*(5)*	*(3)*
Non-controlling interests	*113*	*217*	*(48)*	*(48)*
Core basic EPS ($)	**5.15**	**5.50**	**(6)**	**(4)**

(1) In 2012, Other income and Other expense included in core operating income have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

nm = not meaningful

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Income From Associated Companies

The income from associated companies increased from $528 million in 2011 to $552 million in 2012.

The following is a summary of the individual components included in the income from associated companies:

	2012	2011
	$ m	$ m
Novartis share of Roche's estimated current-year consolidated net income	691	661
Amortization of additional intangible assets recognized by Novartis on initial accounting for the equity interest	(153)	(162)
Net income effect from Roche	**538**	**499**
Net income from other associated companies	**14**	**29**
Income from associated companies	**552**	**528**

The Group's 33.3% interest in Roche's voting shares, which represents a 6.4% interest in Roche's total equity, generated income of $538 million in 2012, up from $499 million in 2011. The 2012 contribution reflects an estimated $741 million share of Roche's net income in 2012. This contribution, however, was reduced by an exceptional charge of $50 million taken in 2012 as part of Roche's restructuring charges and $153 million for the amortization of intangible assets arising from the allocation of the purchase price paid by Novartis for this investment to Roche's intangible assets. A survey of analyst estimates is used to estimate the Group's share of net income in Roche. Any differences between these estimates and actual results will be adjusted in the 2013 consolidated financial statements.

Adjusting for the exceptional items in both years, core income from associated companies decreased 3% from $779 million to $755 million.

Interest Expense and other Financial Income/Expense

The interest expense decreased to $724 million in 2012 from $751 million in 2011 as a result of lower average gross financial debt compared to the prior year. Other financial income and expense amounted to a net expense of $96 million compared to a net expense of $2 million in 2011, mainly as a result of currency losses.

Taxes

Tax expenses in 2012 were $1.5 billion, an increase of 4% (6% cc) from 2011. The tax rate (taxes as a percentage of income before taxes) remained stable at 14.1%. The core tax rate (taxes as percentage of core income before taxes) decreased to 14.9% in 2012 from 15.3% in 2011.

For further information on the main elements contributing to the difference, see " Core Results" and "Item 18. Financial Statements Note 6".

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our principal accounting policies are set out in Note 1 to the Group's consolidated financial statements, which are prepared in accordance with IFRS as issued by the IASB.

Given the uncertainties inherent in our business activities, we must make certain estimates and assumptions that require difficult, subjective and complex judgments. Because of uncertainties inherent in such judgments, actual outcomes and results may differ from our assumptions and estimates, which could materially affect the Group's consolidated financial statements. Application of the following accounting

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policies requires certain assumptions and estimates that have the potential for the most significant impact on our consolidated financial statements.

Deductions from Revenues

As is typical in the pharmaceuticals industry, our gross sales are subject to various deductions which are composed primarily of rebates and discounts to retail customers, government agencies, wholesalers, health insurance companies and managed healthcare organizations. These deductions represent estimates of the related obligations, requiring the use of judgment when estimating the effect of these sales deductions on gross sales for a reporting period. These adjustments are deducted from gross sales to arrive at net sales.

The following summarizes the nature of some of these deductions and how the deduction is estimated. After recording these, net sales represent our best estimate of the cash that we expect to ultimately collect. The US market has the most complex arrangements related to revenue deductions.

United States specific healthcare plans and program rebates

The United States Medicaid Drug Rebate Program is administered by State governments using State and Federal funds to provide assistance to certain vulnerable and needy individuals and families. Calculating the rebates to be paid related to this Program involves interpreting relevant regulations, which are subject to challenge or change in interpretative guidance by government authorities. Provisions for estimating Medicaid rebates are calculated using a combination of historical experience, product and population growth, product price increases and the mix of contracts and specific terms in the individual State agreements. These provisions are adjusted based on established processes and experiences from filing data with individual States.

The United States Federal Medicare program, which funds healthcare benefits to individuals age 65 or older, provides prescription drug benefits under Part D of the program. This benefit is provided through private prescription drug plans. Provisions for estimating Medicare Part D rebates are calculated based on the terms of individual plan agreements, product sales and population growth, product price increases and the mix of contracts, and are adjusted periodically.

We offer rebates to key managed healthcare plans in an effort to increase sales of our products. These rebate programs provide payors a rebate after they have demonstrated they have met all terms and conditions set forth in their contractual agreement. These rebates are estimated based on the terms of individual agreements, historical experience and projected product growth rates. We adjust provisions related to these rebates periodically to reflect actual experience.

There is often a time lag of several months between us recording the revenue deductions and our final accounting for them.

Non-United States specific healthcare plans and program rebates

In certain countries other than the US, we provide rebates to governments and other entities. These rebates are often mandated by laws or government regulations.

In several countries we enter into innovative pay-for-performance arrangements with certain healthcare providers, especially in Europe and Australia. Under these agreements, we may be required to make refunds to the healthcare providers or to provide additional medicines free of charge if anticipated treatment outcomes do not meet predefined targets. Potential refunds and the delivery of additional medicines at no cost are estimated and recorded as a deduction of revenue at the time the related revenues are recorded. Estimates are based on historical experience and clinical data. In cases where historical experience and clinical data are not sufficient for a reliable estimation of the outcome, revenue recognition would be deferred until such history would be available.

There is often a time lag of several months between us recording the revenue deductions and our final accounting for them.

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Non-healthcare plans and program rebates, returns and other deductions

Charge-backs occur where our subsidiaries have arrangements with indirect customers to sell products at prices that are lower than the price charged to wholesalers. A charge-back represents the difference between the invoice price to the wholesaler and the indirect customer's contract price. We account for vendor charge-backs by reducing revenue by an amount equal to our estimate of charge-backs attributable to a sale and they are generally settled within one to three months of incurring the liability. Provisions for estimated charge-backs are calculated using a combination of factors such as historical experience, product growth rates, payments, level of inventory in the distribution channel, the terms of individual agreements and our estimate of the claims processing time lag.

We offer rebates to purchasing organizations and other direct and indirect customers to sustain and increase market share for our products. Since rebates are contractually agreed upon, rebates are estimated based on the terms of individual agreements, historical experience, and projected product growth rates.

When we sell a product providing a customer the right to return it, we record a provision for estimated sales returns based on our sales returns policy and historical rates. Other factors considered include actual product recalls, expected marketplace changes, the remaining shelf life of the product, and the expected entry of generic products. In 2013, sales returns amounted to approximately 1% of gross product sales. If sufficient experience is not available, sales are only recorded based on evidence of product consumption or when the right of return has expired.

We enter into distribution service agreements with major wholesalers, which provide a financial disincentive for the wholesalers to purchase product quantities exceeding current customer demand. Where possible, we adjust shipping patterns for our products to maintain wholesalers' inventories level consistent with underlying patient demand.

We offer cash discounts to customers to encourage prompt payment. Cash discounts are accrued at the time of invoicing and deducted from revenue.

Following a decrease in the price of a product, we generally grant customers a "shelf stock adjustment" for a customer's existing inventory for the involved product. Provisions for shelf stock adjustments, which are primarily relevant within the Sandoz Division, are determined at the time of the price decline or at the point of sale if a price decline can be reasonably estimated based on inventory levels of the relevant product.

Other sales discounts, such as consumer coupons and co-pay discount cards, are offered in some markets. These discounts are recorded at the time of sale, or when the coupon is issued, and are estimated utilizing historical experience and the specific terms for each program. If a discount for a probable future transaction is offered as part of a sales transaction then an appropriate portion of revenue is deferred to cover this estimated obligation.

We adjust provisions for revenue deductions periodically to reflect actual experience. To evaluate the adequacy of provision balances, we use internal and external estimates of the level of inventory in the distribution channel, actual claims data received and the time lag for processing rebate claims. Management also estimates the level of inventory of the relevant product held by retailers and in transit. External data sources include reports of wholesalers and third-party market data purchased by Novartis.

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The following table shows the worldwide extent of our revenue deductions provisions and related payment experiences:

PROVISIONS FOR REVENUE DEDUCTIONS

	Revenue deductions provisions at January 1	Effect of currency translation and business combinations	Payments/ utilizations	Income statement charge		Change in provisions offset against gross trade receivables	Revenue deductions provisions at December 31
				Adjustments of prior years	Current year		
	$ m	$ m	$ m	$ m	$ m	$ m	$ m
2013							
US specific healthcare plans and program rebates	1,442		(3,000)	(74)	3,014		1,382
Non-US specific healthcare plans and program rebates	966	11	(1,674)	(45)	1,961	(63)	1,156
Non-healthcare plans and program related rebates, returns and other deductions	1,664	(10)	(8,088)	(80)	8,319	(161)	1,644
Total 2013	**4,072**	**1**	**(12,762)**	**(199)**	**13,294**	**(224)**	**4,182**
2012							
US specific healthcare plans and program rebates	1,440	17	(3,191)	(46)	3,222		1,442
Non-US specific healthcare plans and program rebates	766	15	(1,423)	94	1,514		966
Non-healthcare plans and program related rebates, returns and other deductions	1,536	176	(7,324)	(143)	7,509	(90)	1,664
Total 2012	**3,742**	**208**	**(11,938)**	**(95)**	**12,245**	**(90)**	**4,072**
2011							
US specific healthcare plans and program rebates	1,162		(2,860)	(19)	3,157		1,440
Non-US specific healthcare plans and program rebates	575	(24)	(1,043)	(23)	1,281		766
Non-healthcare plans and program related rebates, returns and other deductions	1,360	(68)	(6,846)	(7)	7,324	(227)	1,536
Total 2011	**3,097**	**(92)**	**(10,749)**	**(49)**	**11,762**	**(227)**	**3,742**

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The table below shows the gross to net sales reconciliation for our Pharmaceuticals Division:

GROSS TO NET SALES RECONCILIATION

	Income statement charge			
	Charged through revenue deduction provisions	Charged directly without being recorded in revenue deduction provisions	Total	In % of gross sales
	$ m	$ m	$ m	
2013				
Pharmaceuticals gross sales subject to deductions			**40,188**	**100.0**
US specific healthcare plans and program rebates	(2,125)		(2,125)	(5.3)
Non-US specific healthcare plans and program rebates	(1,368)	(802)	(2,170)	(5.4)
Non-healthcare plans and program related rebates, returns and other deductions	(1,731)	(1,948)	(3,679)	(9.2)
Total Pharmaceuticals gross to net sales adjustments	**(5,224)**	**(2,750)**	**(7,974)**	**(19.8)**
Pharmaceuticals net sales 2013			**32,214**	**80.2**
2012				
Pharmaceuticals gross sales subject to deductions			**39,912**	**100.0**
US specific healthcare plans and program rebates	(2,358)		(2,358)	(5.9)
Non-US specific healthcare plans and program rebates	(1,096)	(842)	(1,938)	(4.8)
Non-healthcare plans and program related rebates, returns and other deductions	(1,579)	(1,884)	(3,463)	(8.7)
Total Pharmaceuticals gross to net sales adjustments	**(5,033)**	**(2,726)**	**(7,759)**	**(19.4)**
Pharmaceuticals net sales 2012			**32,153**	**80.6**
2011				
Pharmaceuticals gross sales subject to deductions			**40,004**	**100.0**
US specific healthcare plans and program rebates	(2,424)		(2,424)	(6.0)
Non-US specific healthcare plans and program rebates	(801)	(408)	(1,209)	(3.0)

Non-healthcare plans and program related rebates, returns and other deductions	(1,631)	(2,232)	(3,863)	(9.7)
Total Pharmaceuticals gross to net sales adjustments	**(4,856)**	**(2,640)**	**(7,496)**	**(18.7)**
Pharmaceuticals net sales 2011			**32,508**	**81.3**

Impairment of Goodwill, Intangible Assets and Property, Plant and Equipment

We review long-lived intangible assets and property, plant and equipment for impairment whenever events or changes in circumstance indicate that the asset's balance sheet carrying amount may not be recoverable. Goodwill, the Alcon brand-name and other currently not amortized intangible assets are reviewed for impairment at least annually.

An asset is generally considered impaired when its balance sheet carrying amount exceeds its estimated recoverable amount, which is defined as the higher of its fair value less costs of disposal and its value in use. Usually, Novartis adopts the fair value less costs of disposal method for its impairment evaluation. In most cases no directly observable market inputs are available to measure the fair value less

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costs of disposal. Therefore an estimate of fair value less costs of disposal is derived indirectly and is based on net present value techniques utilizing post-tax cash flows and discount rates. In the limited cases where the value in use method is applied, net present value techniques are utilized using pre-tax cash flows and discount rates.

Fair value reflects estimates of assumptions that market participants would be expected to use when pricing the asset and for this purpose management considers the range of economic conditions that are expected to exist over the remaining useful life of the asset. The estimates used in calculating net present values are highly sensitive, and depend on assumptions specific to the nature of the Group's activities with regard to:

- amount and timing of projected future cash flows;
- future tax rates;
- behavior of competitors (launch of competing products, marketing initiatives, etc.); and
- appropriate discount rate.

Due to the above factors, actual cash flows and values could vary significantly from forecasted future cash flows and related values derived using discounting techniques.

The recoverable amount of a cash-generating unit and related goodwill is usually based on the fair value less costs of sale derived from applying discounted future cash flows based on the key assumptions in the following table:

	Pharmaceuticals	Alcon	Sandoz	Vaccines and Diagnostics	Consumer Health
	%	%	%	%	%
Sales growth rate assumptions after forecast period	1.5	3	0 to 2	0.5	0
Discount rate (post-tax)	6	6	6	6	6

In 2013, intangible asset impairment charges of $116 million were recognized. These relate to impairment charges of $57 million in the Alcon Division and $59 million in all other divisions.

In 2012, intangible asset impairment charges of $286 million were recognized. These relate to impairment charges of $211 million in the Pharmaceuticals Division. Novartis also recorded various impairment charges of $75 million in all other divisions.

Reversal of prior year impairment charges amounted to $2 million (2012: $3 million).

The amount of goodwill and other intangible assets on our consolidated balance sheet has increased significantly in recent years, primarily due to acquisitions. Although no significant additional impairments are currently anticipated, impairment evaluation could lead to material impairment charges in the future. For more information, see "Item 18. Financial Statements Note 11".

Additionally, net impairment charges for property, plant and equipment during 2013 amounted to $80 million (2012: $39 million).

Trade Receivables

Trade receivables are initially recognized at their invoiced amounts including any related sales taxes less adjustments for estimated revenue deductions such as rebates, charge backs and cash discounts.

Provisions for doubtful trade receivables are established once there is an indication that it is likely that a loss will be incurred and represent the difference between the receivable value in the balance sheet

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and the estimated net collectible amount. Significant financial difficulties of a customer, such as probability of bankruptcy, financial reorganization, default or delinquency in payments are considered indicators that recovery of the trade receivable is doubtful. Trade receivable balances include sales to drug wholesalers, retailers, private health systems, government agencies, managed care providers, pharmacy benefit managers and government-supported healthcare systems. Novartis continues to monitor sovereign debt issues and economic conditions in Greece, Italy, Portugal, Spain and other countries, and evaluates trade receivables in these countries for potential collection risks. Substantially all of the trade receivables overdue from such countries are due directly from local governments or from government-funded entities. Deteriorating credit and economic conditions and other factors in these countries have resulted in, and may continue to result in an increase in the average length of time that it takes to collect these trade receivables and may require Novartis to re-evaluate the collectability of these trade receivables in future periods.

Retirement and other post-employment benefit plans

We sponsor pension and other post-employment benefit plans in various forms that cover a significant portion of our current and former associates. For post-employment plans with defined benefit obligations, we are required to make significant assumptions and estimates about future events in calculating the expense and the present value of the liability related to these plans. These include assumptions about the interest rates we apply to estimate future defined benefit obligations and net periodic pension expense as well as rates of future pension increases. In addition, our actuarial consultants provide our management with historical statistical information such as withdrawal and mortality rates in connection with these estimates.

Assumptions and estimates used by the Group may differ materially from the actual results we experience due to changing market and economic conditions, higher or lower withdrawal rates, and longer or shorter life spans of participants among other factors. For example, in 2013, a decrease in the interest rate we apply in determining the present value of the defined benefit obligations of one quarter of one percent would have increased our year-end defined benefit pension obligation for plans in Switzerland, US, UK, Germany and Japan, which represent 95% of the Group total defined benefit pension obligation, by approximately $0.8 billion. Similarly, if the 2013 interest rate had been one quarter of one percentage point lower than actually assumed, net periodic pension cost for pension plans in these countries, which represent about 92% of the Group's total net periodic pension cost for pension plans, would have increased by approximately $34 million. Depending on events, such differences could have a material effect on our total equity. For more information on obligations under retirement and other post-employment benefit plans and underlying actuarial assumptions, see "Item 18. Financial Statements Note 25".

Contingencies

A number of our subsidiaries are involved in various government investigations and legal proceedings (intellectual property, sales and marketing practices, product liability, commercial, employment and wrongful discharge, environmental claims, etc.) arising out of the normal conduct of their businesses. For more information, see "Item 18. Financial Statements Note 20".

We record accruals for contingencies when it is probable that a liability has been incurred and the amount can be reliably estimated. These accruals are adjusted periodically as assessments change or additional information becomes available. For product liability claims, a significant portion of the overall accrual is actuarially determined based on factors such as past experience, amount and number of claims reported, and estimates of claims incurred but not yet reported. We provide for individually significant cases when probable and the amount can be reliably estimated. Expected legal defense costs are accrued when the amount can be reliably estimated.

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In some instances, the inherent uncertainty of litigation, the resources required to defend against governmental actions, the potential impact on our reputation, and the potential for exclusion from government reimbursement programs in the US and other countries have contributed to decisions by Novartis and other companies in our industry to enter into settlement agreements with governmental authorities. These settlements have had in the past, and may continue in the future, to involve large cash payments, including potential repayment of amounts that were allegedly improperly obtained and other penalties including treble damages. In addition, settlements of governmental healthcare fraud cases often require companies to enter into corporate integrity agreements, which are intended to regulate company behavior for a period of years. Our affiliate Novartis Pharmaceuticals Corporation is a party to such an agreement, which will expire in 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation.

Provisions are recorded for environmental remediation costs when expenditure on remedial work is probable and the cost can be reliably estimated. Remediation costs are provided for under "Non-current liabilities" in the Group's consolidated balance sheet. They are estimated by calculating the present value of expected costs.

Provisions relating to estimated future expenditure for liabilities do not usually reflect any insurance or other claims or recoveries, since these are only recognized as assets when the amount is reasonably estimable and collection is virtually certain.

Research & Development

Internal Research & Development costs are fully charged to the consolidated income statement in the period in which they are incurred. We consider that regulatory and other uncertainties inherent in the development of new products preclude the capitalization of internal development expenses as an intangible asset usually until marketing approval from the regulatory authority is obtained in a relevant major market, such as for the US, the EU, Switzerland or Japan.

Healthcare Contributions

In many countries our subsidiaries are required to make contributions to the countries' healthcare costs as part of programs other than the ones mentioned under deductions from revenue above. The amounts to be paid depend on various criteria such as the sales volume compared to certain targets, compared to the competition or to the Group's market share. There is considerable judgment required in estimating these contributions. The most important healthcare contributions relate to the United States Healthcare Reform fee which was introduced in 2011. This fee is an annual fee to be paid by pharmaceutical companies based on the prior year's government program sales. Effective 2013, the US government has also implemented a medical device sales tax which is levied on Alcon's US sales of products that are considered surgical devices under the respective act. The Pharmaceutical fee and the Medical Device Tax are recorded in "Other expenses" since they are considered to be an indirect tax or in inventory and cost of goods sold when the tax is levied on intercompany sales. The annual expense for these US taxes is approximately $200 million.

Taxes

We prepare and file our tax returns based on an interpretation of tax laws and regulations, and record estimates based on these judgments and interpretations. Our tax returns are subject to examination by the competent taxing authorities, which may result in an assessment being made requiring payments of additional tax, interest or penalties. Inherent uncertainties exist in our estimates of our tax positions. We believe that our estimated amounts for current and deferred tax assets or liabilities, including any amounts related to any uncertain tax positions, are appropriate based on currently known facts and circumstances.

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New Accounting Pronouncements

See "Item 18, Financial Statements Note 1".

EFFECTS OF CURRENCY FLUCTUATIONS

We transact our business in many currencies other than the US dollar, our reporting currency.

The following provides an overview of net sales and expenses for 2013 and 2012 for currencies most important to the Group:

Currency		2013	2012	2011
		%	%	%
US dollar ($)	Net sales	36	36	36
	Operating expenses	40	39	38
Euro (EUR)	Net sales	26	25	27
	Operating expenses	25	25	25
Swiss franc (CHF)	Net sales	2	2	2
	Operating expenses	12	13	14
Japanese yen (JPY)	Net sales	8	9	9
	Operating expenses	4	5	4
Other currencies	Net sales	28	28	26
	Operating expenses	19	18	19

We prepare our consolidated financial statements in US dollars. As a result, fluctuations in the exchange rates between the US dollar and other currencies can have a significant effect on both the Group's results of operations as well as on the reported value of our assets, liabilities and cash flows. This in turn may significantly affect reported earnings (both positively and negatively) and the comparability of period-to-period results of operations.

For purposes of our consolidated balance sheets, we translate assets and liabilities denominated in other currencies into US dollars at the prevailing market exchange rates as of the relevant balance sheet date. For purposes of the Group's consolidated income and cash flow statements, revenue, expense and cash flow items in local currencies are translated into US dollars at average exchange rates prevailing during the relevant period. As a result, even if the amounts or values of these items remain unchanged in the respective local currency, changes in exchange rates have an impact on the amounts or values of these items in our consolidated financial statements.

We seek to manage currency exposure by engaging in hedging transactions where management deems appropriate, after taking into account the natural hedging afforded by our global business activity. For 2013, we entered into various contracts that change in value with movements in foreign exchange rates in order to preserve the value of assets, commitments and expected transactions. We also use forward contracts and foreign currency options to hedge expected net revenues in foreign currencies. For more information on how these transactions affect our consolidated financial statements and on how foreign exchange rate exposure is managed, see "Item 18. Financial Statements Notes 1, 5, 16 and 29".

There is also a risk that certain countries could devalue their currency. If this occurs, then it could impact the effective prices we would be able to charge for our products and also have an adverse impact on both our consolidated income statement and balance sheet. The Group is exposed to a potential adverse devaluation risk on its intercompany funding and total investment in certain subsidiaries operating in countries with exchange controls. The most significant country in this respect is Venezuela, where the Group has approximately $220 million of cash in the country, which is only slowly being approved for remittance outside the country. As a result the Group is exposed to a potential income

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statement financial result devaluation loss on its total intercompany balances with subsidiaries in Venezuela and related net investments, which at December 31, 2013 amounted to approximately $340 million and $35 million, respectively. The Group used the official exchange rate as published by CADIVI (Venezuelan Commission for the Administration of Foreign Currency) of VEF 4.3/$ until the devaluation on February 8, 2013 and VEF 6.3/$ since then for the consolidation of the financial statements of the Venezuelan subsidiaries.

The average value of the EUR and CHF in 2013 increased against the US dollar whereas the GBP, JPY and certain emerging market currencies were weaker. The following table sets forth the foreign exchange rates of the US dollar against key currencies used for foreign currency translation when preparing the Group's consolidated financial statements:

	Average for year		Change	Year-end		Change
$ per unit	**2013**	**2012**	**in %**	**2013**	**2012**	**in %**
EUR	1.328	1.286	3	1.378	1.319	4
CHF	1.079	1.067	1	1.124	1.093	3
GBP	1.564	1.585	(1)	1.653	1.616	2
JPY (100)	1.026	1.254	(18)	0.952	1.161	(18)

	Average for year		Change	Year-end		Change
$ per unit	**2012**	**2011**	**in %**	**2012**	**2011**	**in %**
EUR	1.286	1.392	(8)	1.319	1.294	2
CHF	1.067	1.130	(6)	1.093	1.064	3
GBP	1.585	1.603	(1)	1.616	1.543	5
JPY (100)	1.254	1.255	0	1.161	1.289	(10)

The following table provides a summary of the currency impact on key Group figures due to their conversion into US dollar, the Group's reporting currency, of the financial data from entities reporting in non-US dollars. Constant currency (cc) calculations apply the exchange rates of the prior year to the current year financial data for entities reporting in non-US dollars.

CURRENCY IMPACT ON KEY FIGURES

	Change in constant currencies % 2013	Change in $ % 2013	Percentage point currency impact 2013	Change in constant currencies % 2012[1]	Change in $ % 2012[1]	Percentage point currency impact 2012
Net sales	4	2	(2)	0	(3)	(3)
Operating income	5	(3)	(8)	7	4	(3)
Net income	7	(1)	(8)	7	3	(4)
Core operating income	3	(2)	(5)	(3)	(5)	(2)
Core net income	5	0	(5)	(4)	(6)	(2)

(1) Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30".).

For additional information on the effects of currency fluctuations, see "Item 18. Financial statements Note 29".

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FACTORS AFFECTING RESULTS OF OPERATIONS

A number of key factors impact the Group's results of operations and the development of our businesses.

We believe that these factors, which include demographic and socioeconomic shifts, scientific and technological advances and changing patient behaviors, will continue to drive growth in the demand for and access to healthcare. At the same time, the current business and regulatory environment presents significant risks and potential impediments to our growth and to the broader global healthcare industry.

Transformational Changes Fueling Demand

Long-term trends in the composition and behavior of the global population, as well as advances in science and technology, are opening new frontiers in patient treatment and driving demand for healthcare around the world. These trends are expected to sustain steady growth in the healthcare market overall in the coming years and to drive accelerating growth in key segments.

Aging Population and Shifting Behaviors

Scientific advances in treating diseases and increased access to healthcare worldwide have contributed to a rise in life expectancy and fall in birth rates, increasing the proportion of elderly people around the world. According to the United Nations Population Fund, the number of people aged 60 or over has quadrupled in just 60 years and is projected to reach 2 billion by 2050.

With the aging of the global population, we have seen an increase in diseases and conditions that disproportionately affect the elderly, such as lung cancer and Alzheimer's disease. Novartis has many products in its portfolio to help patients with diseases and conditions such as these, including innovative offerings for the treatment of cancer, neurodegenerative diseases, ophthalmological diseases and cardiovascular conditions.

Another major trend in global health is an increase in obesity rates. In the last 20 years, obesity rates have doubled among adults and tripled among children. Together with inactive lifestyles and habits, this has boosted the prevalence of chronic diseases, including cardiovascular disease, diabetes and chronic respiratory diseases, which now account for over 60% of deaths worldwide, according to the World Health Organization (WHO). Novartis businesses, particularly Pharmaceuticals, Alcon and Sandoz, offer products that help patients suffering from chronic diseases. We plan to continue to invest in new treatments to address this growing health threat.

Global Rise in Healthcare Spending Led by Emerging Markets

Despite a difficult economic environment, global healthcare spending continues to rise around the world. In OECD countries, for example, average public healthcare expenditures are expected to comprise 8% of total GDP in 2060, a 2.5 percentage point increase from 2010.

While developed countries still dedicate a higher percentage of their GDP to healthcare than the rest of the world, emerging markets are contributing an increasing proportion of total global healthcare expenditures, due in part to a growing middle class. According to the Brookings Institute, the global middle class, defined as households with daily expenditures between $10 and $100 per person, is on track to more than double in size in 20 years, from roughly 2 billion in 2013 to 4.9 billion in 2030. Most of that growth is expected to come from emerging markets, led by China and India. At present growth rates, Asia will have more than 2 billion people in middle class households within the next decade.

According to IMS Health, emerging markets are expected to make up 30% of global medicine expenditures by 2016, spending $35-40 billion on pharmaceuticals alone. At a time of slowing growth in industrialized countries, many emerging markets have experienced proportionately higher sales growth

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and an increasing contribution to the industry's global performance. In 2013, we generated $14.7 billion, or approximately 25% (2012: 24%) of net sales from Emerging Growth Markets which comprise all markets other than the Established Markets of the US, Canada, Western Europe, Japan, Australia and New Zealand as compared with $43.2 billion, or approximately 75% (2012: 76%) of our net sales, in the Established Markets.

We expect this trend to continue in the long term, and with our diversified portfolio spanning patented pharmaceuticals, generics and OTC medicines, we are well-positioned to meet the needs of patients in emerging markets.

Scientific Advances Opening new Opportunities

As research in the fields of genomics and biotechnology becomes more sophisticated, we are developing a better understanding of the molecular and genetic basis of diseases. We have successfully utilized our understanding of basic molecular pathways to expand the applicability of medicines towards novel targets. For example, we unraveled the biology of cytokine IL-17A by studying the effect of AIN457 in clearing skin lesions in psoriasis patients. We are also studying the applicability of AIN457 in multiple other diseases based on its ability to inhibit IL-17A, including psoriatic arthritis, ankylosing spondylitis, rheumatoid arthritis, uveitis, multiple sclerosis and asthma. Further, we are gaining a greater capability to identify specific biological factors, called "biomarkers," that could indicate whether or not a given drug will be effective for a particular patient. For example, in the case of Fragile X syndrome, we developed a diagnostic test that determines the methylation level of the DNA in these patients, which appears to be a predictor of response to our drug, AFQ056. Over the period of 2012 to 2016, the global market for targeted therapies is expected to grow at a double-digit rate of approximately 12%.

The science of biomarkers is just one element of a larger industry trend toward personalized medicine, which has the potential to shape not only the way diseases are managed, but also how new drugs are developed. It could, for example, accelerate the drug development process if regulators were to accept smaller trials geared toward patients with specific disease subtypes or mutations, as opposed to traditional large-scale clinical trials for which it can be more difficult to demonstrate that a drug is effective in certain subsections of the patient population. This would further enhance our ability to streamline the innovation process and deliver customized medicines for improved patient outcomes.

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New Technologies Changing the Delivery of Healthcare

New technologies, such as connected medical devices and health information technology systems, are streamlining the delivery of healthcare and improving patient outcomes. Connected medical devices, for example, offer the potential to record and share information about a patient's daily medicine intake, making it easier for doctors to monitor patient compliance and response to treatment. In our Pharmaceuticals Division, we are developing an "*eBreezhaler*" device for chronic obstructive pulmonary disease (COPD) patients so that their doctors could have the ability to track key health indicators remotely and in real time. We expect this device to reduce the occurrence of hospitalization and contribute to greater treatment adherence, improving outcomes at lower costs.

We are also using new technologies in the Alcon Division to improve outcomes for cataract patients. The latest example is our Cataract Refractive Suite, which comprises multiple innovations and advanced technologies from Alcon's extensive surgical device portfolio working seamlessly together to optimize consistency in how cataract surgery is approached and executed. One component of the Suite, the *Verion* image guided system, captures a reference image and helps to generate a surgical plan, which is then integrated in the operating room via a tracking overlay, allowing surgeons to see all incisions and alignment in real time. As the leader in the global refractive cataract surgery category, Alcon constantly strives to introduce the latest advancements in surgical innovations and technologies to optimize and improve the refractive cataract procedure and improve patient outcomes.

In the R&D setting, new technologies can also help improve the accuracy of clinical trials and accelerate the drug development process. For example, the need to travel to and from clinical trial sites poses an inconvenience for many patients and contributes to low retention rates. By using mobile apps to check and record relevant data from clinical trial participants in their homes, we expect to improve retention and streamline the reporting process, which in turn has the potential to contribute to increased accuracy. In clinical trials, Novartis also uses tablets to reduce the potential for human error in transcribing patient data on paper forms, and facilitate monitoring from a central database. With this approach, we both enhance accuracy and lower costs, which could help us to bring drugs to market more quickly and efficiently.

Patient Engagement

Greater access to health information and tools to communicate with providers is making patients more active participants in their own healthcare. According to the Pew Research Center's Internet & American Life Project, 59% of all adults in the US have searched online for information about a disease or treatment, and 11% have posted comments or queries online pertaining to health or medical matters.

With patients actively seeking health information online, we have an opportunity to deliver more holistic healthcare solutions. For example, we are developing the *myGIST Companion* app for patients with gastrointestinal stromal tumors (GIST). The app is designed to be interactive, and provide a checklist for patients to chart their symptoms and measure their progress, which we expect will allow them to play an active role in managing their disease.

In addition, we are engaging patients by providing them with tools and platforms to share their experiences and learn about their conditions and treatment options. For example, in multiple sclerosis (MS) where we offer *Gilenya*, the first oral therapy approved to treat relapsing forms of the disease we launched a set of interactive, patient-friendly web-based tools, including an animated video series and a Pinterest page. Through these online interactions, we gain a better understanding of patient concerns, which we can then address in our product development and marketing efforts.

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Shift to Generics and OTC Products

Rising healthcare costs have precipitated greater consumer demand for affordable products, such as generic equivalents and alternatives to the originating pharmaceutical products. According to IMS Health, 84% of prescriptions dispensed in the US in 2012 were for generic medications, up from 63% five years earlier. By 2017, it is projected that generics will account for 87% of all prescriptions filled. Similarly, a study by Booz & Company found that OTC products are used by 79% of US consumers, or 240 million people, and save the US healthcare system more than $100 billion per year.

With leadership positions in both generics and over-the-counter medicines, we believe that we are well-positioned to take advantage of these trends and meet the needs of consumers worldwide.

Increasingly Challenging Business Environment

While these transformational changes present opportunities for growth, our businesses also face significant risks and uncertainties. Our business, as well as our financial condition or results of operations, could be materially adversely affected by a number of risks, including those set out here.

Patent Expirations and Product Competition

It is estimated that, in the five years between 2007 and 2012, generic erosion of patented pharmaceuticals accounted for an estimated loss of $67 billion in annual sales among the top drug companies. Current estimates suggest that this impact could be even greater in the future, potentially amounting to $250 billion in lost sales from 2012 to 2015.

The ability to secure and defend our intellectual property is particularly crucial for our Pharmaceuticals and Alcon Divisions. The products of these divisions, as well as key products from our other divisions, are generally protected by patent rights, which are intended to provide us with exclusive rights to market the patented products. However, those patent rights are of varying strengths and durations. Loss of market exclusivity for one or more important products has had, and can be expected to continue to have, a material adverse effect on our results of operations.

Some of our best-selling products have begun to face considerable competition due to the expiration of patent protection. For example:

- The patent on valsartan, the active ingredient of *Diovan*/*Co-Diovan*/*Diovan HCT* (high blood pressure), which was long our best-selling product, expired in the major countries of the EU in November 2011, and generic competitors have launched there. In addition, patent protection expired in the US in September 2012, and generic versions of *Diovan HCT* have launched in the US. Generic versions of *Diovan* monotherapy have not yet launched in the US but could potentially launch at any time. In addition, patent protection for *Diovan* expired in Japan in 2013, and will expire there in 2016 for *Co-Diovan* (including patent term extensions).

- The patent on the active ingredient in *Gleevec*/*Glivec* (cancer) will expire in 2015 in the US, in 2016 in the major EU countries and in September 2014 for the main indications in Japan. However, the product is protected by additional patents claiming innovative features of *Gleevec*/*Glivec*. Generic versions of *Gleevec*/*Glivec* have already launched in Turkey, Brazil, Canada, China, India, Russia and for a minor indication in Japan.

In 2014, the impact of generic competition on our net sales is expected to be as much as $3.0 billion. Because we typically have reduced marketing and R&D expenses related to a product in its final year of exclusivity, it is anticipated that the loss of patent protection will have an impact on our operating income, which can be expected to correspond to a significant portion of the product's lost sales.

Aside from generic competition, all of our businesses face other competing healthcare products. Doctors, patients or those responsible for the reimbursement of the cost of healthcare products may

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choose competitor products over ours if they perceive the products to be safer, more effective, easier to administer, less expensive or more cost effective. In 2013, for example, we saw launches of products significantly competitive to *Lucentis* and *Gilenya*, two growth products in our Pharmaceuticals Division. Such competitive products could affect the revenues from our products, and could affect our results of operations.

Though the wave of patent expiries presents a significant challenge to our Pharmaceuticals and Alcon Divisions, it is also an opportunity for our Sandoz Division, which develops, manufactures, distributes and sells prescription medicines that are not protected by valid and enforceable third-party patents. According to IMS Health, Sandoz is the number two company in worldwide generics sales and is the global leader in biosimilars. With our global footprint and advanced technical expertise, as well as our strong track record of being first to market with new generic medicines, we expect Sandoz to help offset the impact of generic competition on our branded portfolio.

Heightened Regulatory and Safety Hurdles

Following a series of widely publicized issues in recent years, health regulators are increasingly focusing on product safety. In addition, government authorities around the world have paid increased attention to the risk/benefit profile of pharmaceutical products with an emphasis on product safety and on incremental improvement over older products in the same therapeutic class. These developments have led to requests for more clinical trial data, for the inclusion of a significantly higher number of patients in clinical trials and for more detailed analyses of the trials. As a result, the already lengthy and expensive process of obtaining regulatory approvals for pharmaceutical products has become even more challenging.

The post-approval regulatory burden on healthcare companies has also been growing. Approved drugs have increasingly been subject to requirements such as Risk Evaluation and Mitigation Strategies (REMS), risk management plans, comparative effectiveness studies, health technology assessments and requirements to conduct post-approval Phase IV clinical trials to gather far more detailed safety and other data on products. These requirements make the maintenance of regulatory approvals and achievement of reimbursement for our products increasingly expensive and further heighten the risk of recalls, product withdrawals, or loss of market share. Like our industry peers, we have been required by health authorities to conduct additional clinical trials, and to submit additional analyses of our data in order to obtain product approvals or reimbursement by government or private payors. We have had REMS and other such requirements imposed as a condition for approval of our new drugs. By increasing the costs of and causing delays in obtaining approvals, and by creating an increased risk that products either will not be approved, or will be removed from the market after previously having been approved, these regulatory developments have had, and can be expected to continue to have, a material adverse effect on our business, financial condition and results of operations.

Despite this risk, however, we expect that our focus on improving patient outcomes and understanding disease pathways will allow Novartis to continue to bring innovative, effective and safe medicines to market.

Risk of Liability and Supply Disruption from Manufacturing Issues

The manufacture of our products is both highly regulated and complex, and may result in a variety of issues that could lead to extended supply disruptions and significant liability. Governmental health authorities around the world, including the US FDA, closely regulate the manufacture of our products, and continue to intensify their scrutiny of manufacturers' compliance with their requirements. If we or our third party suppliers fail to comply fully with these requirements and the health authorities' expectations, then we could be required to shut down our production facilities or production lines. In this event, we could experience product shortages, or be unable to supply products to patients for an extended period of time, and such shortages or supply failures have led to, and could continue to lead to, significant losses of

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sales revenue and to potential third party litigation. Health authorities could also impose significant penalties on us.

We have faced, and in some cases continue to face, significant manufacturing issues. For example, in 2013, Sandoz continued to upgrade its systems and processes to ensure one quality standard across the organization following a warning letter from the US FDA in 2011 pertaining to three of the division's North American manufacturing facilities, and another received in 2013 with respect to the Sandoz site in Unterach, Austria. Sandoz has now achieved upgraded compliance status at two of those sites (Broomfield, Colorado, US in 2012 and Boucherville, Canada in 2013). We also continued to make progress on quality remediation at Consumer Health's manufacturing facility in Lincoln, Nebraska, US, where we suspended operations and shipments at the end of 2011. In 2013, the FDA re-inspected the Lincoln site and made zero Form 483 observations relating to its manufacturing operations. Consequently, we resumed shipments of newly validated *Sentinel* and *Excedrin*, two of the products produced at that site, to our customers in North America.

As a result of such manufacturing issues, we have been unable to supply certain products to the market for significant periods of time, and so have suffered and may continue to suffer significant losses in sales and market share. In addition, supply issues have required us to outsource the production of certain key products that were previously manufactured in our own production facilities, as well as expend considerable resources on the remediation of the issues at our sites, which may limit the potential profitability of such products. To meet increasing health authority expectations, we are devoting substantial time and resources to improve quality and assure consistency of product supply at our other manufacturing sites around the world.

In addition to regulatory requirements, many of our products involve technically complex manufacturing processes or require a supply of highly specialized raw materials. For example, a significant portion of the Group's portfolio of products, including products from Pharmaceuticals, Alcon, Sandoz, and Vaccines and Diagnostics, are "biologic" products, which cannot be manufactured synthetically, but instead must be produced from living plant or animal microorganisms. As a result, the production of biologic-based products which meet all regulatory requirements is especially complex. Furthermore, because the production process is based on living plant or animal micro-organisms, the process could be affected by contaminants which could impact those micro-organisms. As a result, the inherent fragility of certain of our raw material supplies and production processes may cause the production of one or more of our products to be disrupted, potentially for extended periods of time.

In addition, the Group's portfolio includes a number of sterile products such as oncology treatments, which are considered to be technically complex to manufacture and require strict environmental controls. Because the production process for these products is complex and sensitive, there is a greater chance of production failures and lengthy supply interruptions.

Finally, because our products are intended to promote the health of patients, any manufacturing issues that result in supply disruptions or other production problems could potentially subject us, not only to government penalties, but also to lawsuits or allegations that the public health, or the health of individuals, has been endangered.

Weak Economic Environment and Increasing Pressure on Pricing

Though the global economy showed signs of recovery in 2013, overall growth was weak. In a cost-constrained environment, governments have continued to impose measures, such as rebates and price reductions, to make medicines more affordable.

These ongoing pricing pressures affect all of our businesses that rely on reimbursement, including Pharmaceuticals, Alcon, Sandoz, and Vaccines and Diagnostics. For example, in 2013, the UK's National Institute for Health and Clinical Excellence (NICE) recommended against the UK NHS funding the use of our products *Jakavi* (myelofibrosis) and *Afinitor* (advanced breast cancer indication). NICE did

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recommend the funding of the use of our products *Xolair* (allergic asthma), *Lucentis* (diabetic macular edema indication) and *Jetrea* (vitreomacular traction), but only after we offered significant price discounts. In the US, under the Affordable Care Act (ACA), there is a newly created entity, the Independent Payment Advisory Board, which has been granted unprecedented authority to implement broad actions, such as required prescription drug discounts or rebates, to reduce future costs of the Medicare program. This could include required prescription drug discounts or rebates. In addition, as a result of the ongoing implementation of the ACA, some patients may be required to switch from existing commercial health insurance policies to policies offered on the new healthcare exchanges. Should a significant number of patients switch to policies offered on the exchanges that offer lesser benefits than their prior policies, there could be an impact on the sales or pricing of our products.

In addition to pricing pressures, concerns continue that some countries, including Greece, Italy, Portugal and Spain, may not be able to fully pay us for our products. Certain other countries, such as Venezuela, have taken steps to introduce exchange controls and limit companies from distributing retained earnings or paying intercompany payables due from those countries.

Current economic conditions may also adversely affect the ability of our distributors, customers, suppliers and service providers to obtain the liquidity required to pay for our products, or otherwise to buy necessary inventory or raw materials, and to perform their obligations under agreements with us, which could disrupt our operations, and could negatively impact our business and cash flow. In addition, the varying effects of difficult economic times on the economies, currencies and financial markets of different countries has impacted, and may continue to impact, the conversion of our operating results into our reporting currency, the US dollar, as well as the value of our investments in our pension plans. The financial situation may also result in a lower return on our financial investments, and a lower value on some of our assets. Alternately, inflation could accelerate, which could lead to higher interest rates and increase our costs of raising capital.

Consumer behavior has also been impacted by the weak economic environment, with patients around the world looking for ways to keep healthcare spending to a minimum. According to a study by the Commonwealth Fund, 80 million people in the US skipped recommended medical care or services because of high costs in 2012, up from 75 million people in 2011. Some of our businesses, including the elective surgical business of our Alcon Division and our OTC and Animal Health Divisions, may be particularly sensitive to declines in consumer spending. Our Pharmaceuticals, Vaccines and Diagnostics, and Sandoz Divisions, and the other remaining businesses of our Alcon Division, may also be sensitive to consumer cutbacks, particularly given the increasing requirements in certain countries that patients pay a larger contribution toward their own healthcare costs. As a result, there is a risk that consumers may cut back on prescription drugs and vaccines, as well as consumer health products, to help cope with rising costs and difficult economic times. To offset this trend and help ensure that patients get the care they need, Novartis offers coupon programs and incentives for patented products to facilitate access to the most effective treatments at an affordable price.

Potential Liability Arising from Legal Proceedings

In recent years, there has been a trend of increasing government investigations and litigations against companies operating in the industries of which we are a part, both in the US and in an increasing number of countries around the world. We are obligated to comply with the laws of all of the countries around the world in which we operate and sell products, both with respect to an extremely wide and growing range of activities, and with new requirements imposed on us from time to time as government and public expectations regarding acceptable corporate behavior change. To that end, we have a significant global compliance program in place, and devote substantial time and resources to efforts to ensure that our business is conducted in a legal and publicly acceptable manner. Nonetheless, despite our efforts, any failure to comply with the law or with heightened public expectations could lead to substantial liabilities that may not be covered by insurance and could affect our business and reputation.

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A number of our subsidiaries are, and will likely continue to be, subject to various legal proceedings that arise from time to time, including proceedings regarding product liability, sales and marketing practices, commercial disputes, employment and wrongful discharge, antitrust, securities, health and safety, environmental remediation, taxation, privacy and intellectual property matters. Such proceedings are inherently unpredictable, and large judgments sometimes occur. As a consequence, we may in the future incur judgments or enter into settlements of claims that could have a material adverse effect on our results of operations or cash flows.

Governments and regulatory authorities around the world have been stepping up their compliance and law enforcement activities in recent years, and are increasingly challenging practices previously considered to be legal. Responding to such challenges and new regulations is costly, and requires an increasing amount of our management's time and attention. In addition, such investigations may affect our reputation, create a risk of potential exclusion from government reimbursement programs in the US and other countries, and may lead to litigation.

These factors have contributed to recent decisions by us and other companies in our industry, when deemed in their interest, to enter into settlement agreements with governmental authorities around the world prior to any formal decision by the authorities. These settlements have involved and may continue to involve large cash payments, including the potential repayment of amounts allegedly obtained improperly and penalties of up to treble damages. In addition, settlements of healthcare fraud cases often require companies to enter into corporate integrity agreements, which are intended to regulate company behavior for a period of years. Our affiliate Novartis Pharmaceuticals Corporation is a party to such an agreement, which will expire in 2015. Also, matters underlying governmental investigations and settlements may be the subject of separate private litigation. Adverse judgments or settlements in any significant investigations or cases against us could have a material adverse effect on our business, financial condition and results of operations.

FACTORS AFFECTING COMPARABILITY OF YEAR-ON-YEAR RESULTS OF OPERATIONS

Recent Significant Transactions

The comparability of the year-on-year results of our operations for the total Group can be significantly affected by acquisitions and divestments. The only transactions of significance during 2013, 2012 and 2011 are mentioned below.

Acquisitions in 2012

Sandoz Acquisition of Fougera Pharmaceuticals, Inc.

On July 20, 2012, Sandoz completed the acquisition of 100% of Fougera Pharmaceuticals, Inc. a specialty dermatology generics company based in Melville, New York, for $1.5 billion in cash. Sandoz acquired Fougera for its strong dermatology development and manufacturing expertise. Fougera employed approximately 700 people.

The final purchase price allocation resulted in net identified assets of $0.6 billion (excluding acquired cash) and goodwill of $0.9 billion being recognized.

Acquisitions in 2011

Alcon full ownership and merger in 2011

On April 8, 2011 a Novartis Extraordinary General Meeting approved the merger of Alcon, Inc. with Novartis AG leading to the creation of the Alcon Division which became the fifth reported segment in Novartis' strategically diversified healthcare portfolio. The Extraordinary General Meeting also authorized the issuance of 108 million new shares. Alcon shareholders received 2.9228 Novartis shares

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(which included a dividend adjustment) and $8.20 in cash for each share of Alcon, resulting in a total consideration of $168.00 per share.

During 2011, prior to the merger on April 8, 2011, 4.8% of the non-controlling interests in Alcon, Inc. were acquired for $2.4 billion. Completion of the acquisition of the outstanding 18.6% of Alcon Inc. on April 8, 2011 and subsequent merger, resulted in the issuance of Novartis shares with a fair value of $9.2 billion and a payment in cash of $0.5 billion to the Alcon, Inc. shareholders.

The final purchase price allocation was completed in 2011 and resulted in a fair value of net identifiable assets of $27.0 billion and goodwill of $18.0 billion. The excess of the value exchanged for the non-controlling interests in Alcon Inc, in 2011 over its recorded value together with merger related transaction costs resulted in a reduction in the Novartis consolidated equity of $5.7 billion.

For more detail on accounting for these transactions, see "Item 18, Financial Statements Notes 1, 2 and 24".

Other Acquisitions in 2011

Pharmaceuticals Acquisition of Genoptix, Inc.

On March 7, 2011 Novartis completed the acquisition of 100% of Genoptix, Inc., a specialized laboratory providing personalized diagnostic services to United States community-based hematologists and oncologists for $458 million in cash. Genoptix employed approximately 500 people.

The final purchase price allocation resulted in net identified assets of $237 million and goodwill of $221 million.

Divestment of Vaccines and Diagnostics' Blood Transfusion Diagnostics Unit in January 2014

On January 9, 2014 Novartis completed the divestment of its blood transfusion diagnostics unit to the Spanish company, Grifols S.A., for $1.7 billion in cash. This unit was part of Novartis Vaccines and Diagnostics and was dedicated to increasing transfusion safety worldwide. The estimated pre-tax gain on this transaction, subject to finalization of the accounting, will be approximately $0.9 billion.

NON-IFRS MEASURES AS DEFINED BY NOVARTIS

The following non-IFRS metrics are used by Novartis when measuring performance, especially when measuring current year results against prior periods: constant currencies, free cash flow, net debt and core results.

Despite the use of these measures by management in setting goals and measuring the Group's performance, these are non-IFRS measures that have no standardized meaning prescribed by IFRS. As a result, such measures have limits in their usefulness to investors.

Because of their non-standardized definitions, the non-IFRS measures (unlike IFRS measures) may not be comparable to the calculation of similar measures of other companies. These measures are presented solely to permit investors to more fully understand how the Group's management assesses underlying performance. These measures are not, and should not be viewed as, a substitute for IFRS measures.

As an internal measure of Group performance, these measures have limitations, and the performance management process is not solely restricted to these metrics.

Constant Currencies

Changes in the relative values of non-US currencies to the US dollar can affect the Group's financial results and financial position. To provide additional information that may be useful to investors, including

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changes in sales volume, we present information about our net sales and various values relating to operating and net income that are adjusted for such foreign currency effects.

Constant currency calculations have the goal of eliminating two exchange rate effects so that an estimate can be made of underlying changes in the consolidated income statement excluding the impact of fluctuations in exchange rates:

- the impact of translating the income statements of consolidated entities from their non-$ functional currencies to $; and
- the impact of exchange rate movements on the major transactions of consolidated entities performed in currencies other than their functional currency.

We calculate constant currency measures by translating the current year's foreign currency values for sales and other income statement items into $ using the average exchange rates from the prior year and comparing them to the prior year values in $.

We use these constant currency measures in evaluating the Group's performance, since they may assist us in evaluating our ongoing performance from year to year. However, in performing our evaluation, we also consider equivalent measures of performance which are not affected by changes in the relative value of currencies.

Growth Rate Calculation

For ease of understanding, Novartis uses a sign convention for its growth rates such that a reduction in operating expenses or losses compared to the prior year is shown as a positive growth.

Free Cash Flow

Novartis defines free cash flow as cash flow from operating activities adjusted for cash flow associated with the purchase or sale of property, plant and equipment, intangible, other non-current and financial assets. Cash flows in connection with the acquisition or divestment of subsidiaries, associated companies and non-controlling interests in subsidiaries are also not taken into account to determine free cash flow.

Free cash flow is presented as additional information because Novartis considers it to be a useful indicator of the Group's ability to operate without relying on additional borrowing or the use of existing cash. Free cash flow is a measure of the net cash generated that is available for debt repayment, investment in strategic opportunities and for returning to shareholders. Novartis uses free cash flow in internal comparisons of results from the Group's divisions. Free cash flow of the divisions uses the same definition as for the Group. No tax or financial receipts or payments are included in the division calculations. The definition of free cash flow used by Novartis does not include amounts related to changes in investments in associated companies nor related to acquisitions or divestments of subsidiaries. Free cash flow is not intended to be a substitute measure for cash flow from operating activities (as determined under IFRS).

Net Debt

Novartis defines net debt as our cash and cash equivalents, current investments and derivative financial instruments less interest-bearing loans and borrowings.

Core Results

The Group's core results including core operating income, core net income and core earnings per share exclude the amortization of intangible assets, impairment charges, expenses relating to the integration of acquisitions as well as certain other income and expense items that are, or are expected to accumulate within the year to be, over a $25 million threshold that management deems exceptional.

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Novartis believes that investor understanding of the Group's performance is enhanced by disclosing core measures of performance because, since they exclude items which can vary significantly from year to year, the core measures enable better comparison across years. For this same reason, Novartis uses these core measures in addition to IFRS and other measures as important factors in assessing the Group's performance.

The following are examples of how these core measures are utilized:

In addition to monthly reports containing financial information prepared under IFRS, senior management receives a monthly analysis incorporating these core measures.

Annual budgets are prepared for both IFRS and core measures.

The following tables reconcile IFRS results to core results:

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS GROUP

2013	**IFRS results**	**Amortization of intangible assets[1]**	**Impairments[2]**	**Acquisition or divestment related items, restructuring and integration charges[3]**	**Other exceptional items[4]**	**Core results**
	$ m	**$ m**	**$ m**	**$ m**	**$ m**	**$ m**
Gross profit	**39,223**	**2,866**	**28**		**41**	**42,158**
Operating income	**10,910**	**2,955**	**259**	**331**	**30**	**14,485**
Income before taxes	**10,735**	**3,214**	**259**	**349**	**74**	**14,631**
Taxes	(1,443)					(2,098)[5]
Net income	**9,292**					**12,533**
Basic earnings per share ($)[6]	3.76					5.09
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(19,608)	2,866	28		41	(16,673)

The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(14,549)				27	(14,522)
Research & Development	(9,852)	85	86		39	(9,642)
General & Administration	(3,060)				25	(3,035)
Other income	1,367		(53)		(506)	808
Other expense	(2,219)	4	198	331	404	(1,282)

The following are adjustments to arrive at Core Income before taxes						
Income from associated companies	600	259		18		877
Other financial income and expense	(92)				44	(48)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; Other expense includes amortization of intangible assets; Income from associated companies includes the Novartis share of the estimated Roche core items.

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(2) Impairments: Cost of goods sold, Research & Development, Other income and Other expense include principally net impairment charges or reversals related to intangible assets and property, plant and equipment, mainly related to the Group-wide rationalization of manufacturing sites.

(3) Acquisition or divestment related items, restructuring and integration charges: Other expense includes Alcon integration costs. Income from associated companies includes restructuring charges related to Roche.

(4) Other exceptional items: Cost of goods sold, Other income and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Marketing & Sales includes charges related to termination of a co-promotional contract; Research & Development also includes a net increase of contingent consideration liabilities related to acquisitions; General & Administration includes exceptional IT-related costs; Other income includes divestment gains, a reversal of a Corporate provision, income from post-retirement medical plan amendments and reduction in restructuring charge provisions; Other expense includes a restructuring provision charge, provisions for legal matters, and charges for transforming IT and finance processes; Other financial income and expense includes devaluation losses of $44 million related to Venezuela.

(5) Taxes on the adjustments between IFRS and core results take into account, for each individual item included in the adjustment, the tax rate that will finally be applicable to the item based on the jurisdiction where the adjustment will finally have a tax impact. Generally, this results in amortization and impairment of intangible assets and acquisition-related restructuring and integration items having a full tax impact. There is usually a tax impact on exceptional items although this is not the case for items arising from criminal settlements in certain jurisdictions. Adjustments related to income from associated companies are recorded net of any related tax effect. Due to these factors and the differing effective tax rates in the various jurisdictions, the tax on the total adjustments of $3.9 billion to arrive at the core results before tax amounts to $655 million. This results in the average tax rate on the adjustments being 16.8%.

(6) Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

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2012	Restated IFRS results[1]	Amortization of intangible assets[2]	Impairments[3]	Acquisition or divestment related items, restructuring and integration charges[4]	Other exceptional items[5]	Restated Core results[1]
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**38,805**	**2,786**	**174**	**39**	**43**	**41,847**
Operating income	**11,193**	**2,876**	**356**	**330**	**87**	**14,842**
Income before taxes	**10,925**	**3,045**	**356**	**364**	**87**	**14,777**
Taxes	(1,542)					(2,201)[6]
Net income	**9,383**					**12,576**
Basic earnings per share ($)[7]	3.83					5.15
The following are adjustments to arrive at Core Gross Profit						
Other revenues	888				(56)	832
Cost of goods sold	(18,756)	2,786	174	39	99	(15,658)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(14,353)			1		(14,352)
Research & Development	(9,332)	87	109		20	(9,116)
General & Administration	(2,937)				14	(2,923)
Other income	1,049		(1)		(373)	675
Other expense	(2,039)	3	74	290	383	(1,289)
The following are adjustments to arrive at Core Income before taxes						
Income from associated companies	552	169		34		755

(1) Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

(2)

Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; Other expense includes amortization of intangible assets; Income from associated companies includes the recurring amortization of the purchase price allocation related to intangible assets included in the Novartis equity-method accounting for Roche of $153 million and $16 million for the Novartis share of the estimated Roche core items.

(3)

Impairments: Cost of goods sold, Research & Development, Other income, and Other expense include principally impairments of intangible assets and property, plant & equipment; Other expense also includes impairments of financial assets.

(4)

Acquisition or divestment related items, restructuring and integration charges: Cost of goods sold includes acquisition related inventory step-up adjustments; Marketing & Sales and Other expense relate to Alcon and Fougera integration costs; Income from associated companies includes a $16 million revaluation gain on the initial interest in an acquired company and the Novartis share of $50 million restructuring charge related to Roche.

(5)

Other exceptional items: Other revenues include an income of $56 million related to an intellectual property settlement and license agreement; Cost of goods sold, Research & Development, Other income, and Other expense include

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restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold also includes an additional charge of $22 million for product recalls related to a US production plant; Research & Development also includes a net $18 million increase of contingent consideration liabilities related to business combinations; General & Administration includes exceptional IT-related costs; Other income includes a provision reduction of $137 million mainly related to *Tekturna/Rasilez* inventories, a product divestment gain of $93 million, a reversal of prior year restructuring charges of $76 million, and a gain on divestment from the sale of financial assets of $51 million; Other expense includes principally a restructuring charge of $149 million related to the US business, and charges for transforming IT and finance processes of $117 million.

(6)

Taxes on the adjustments between IFRS and core results take into account, for each individual item included in the adjustment, the tax rate that will finally be applicable to the item based on the jurisdiction where the adjustment will finally have a tax impact. Generally, this results in amortization and impairment of intangible assets and acquisition-related restructuring and integration items having a full tax impact. There is usually a tax impact on exceptional items although this is not the case for items arising from criminal settlements in certain jurisdictions. Adjustments related to income from associated companies are recorded net of any related tax effect. Due to these factors and the differing effective tax rates in the various jurisdictions, the tax on the total adjustments of $3.9 billion to arrive at the core results before tax amounts to $659 million. This results in the average tax rate on the adjustments being 17.1%.

(7)

Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

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2011	Restated IFRS results[1]	Amortization of intangible assets[2]	Impairments[3]	Acquisition or divestment related items, restructuring and integration charges[4]	Other exceptional items[5]	Restated Core results[1]
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**40,392**	**2,918**	**278**	**5**	**246**	**43,839**
Operating income	**10,780**	**3,028**	**1,224**	**148**	**511**	**15,691**
Income before taxes	**10,555**	**3,238**	**1,224**	**148**	**552**	**15,717**
Taxes	(1,483)					(2,400)[6]
Net income	**9,072**					**13,317**
Basic earnings per share ($)[7]	3.75					5.50
The following are adjustments to arrive at Core Gross Profit						
Net sales	58,566				117	58,683
Cost of goods sold	(18,983)	2,918	278	5	129	(15,653)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(15,079)				2	(15,077)
Research & Development	(9,583)	93	341		(90)	(9,239)
General & Administration	(2,970)	13				(2,957)
Other income	1,192		(3)	(102)	(806)	281
Other expense	(3,172)	4	608	245	1,159	(1,156)
The following are adjustments to arrive at Core Income before taxes						
Income from associated companies	528	210			41	779

(1) Other income and Other expense have been restated by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

(2)

Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; General & Administration includes the recurring amortization of intangible assets; Other expense includes amortization of intangible assets; Income from associated companies includes the recurring amortization of the purchase price allocation related to intangible assets included in the Novartis equity-method accounting for Roche of $162 million and $48 million for the Novartis share of the estimated Roche core items.

(3)

Impairments: Cost of goods sold includes impairment charges related to *Tekturna/Rasilez*, Consumer Health in the US, and other intangible assets; Research & Development includes impairment charges principally for PTK796, AGO178 (agomelatine), PRT128, SMC021 and In Process Research & Development; Other income includes an impairment reversal; Other expense includes impairments of $314 million related to *Tekturna/Rasilez*, $47 million related to SMC021, $17 million related to the Group-wide rationalization of manufacturing sites, and amounts for financial assets.

(4)

Acquisition-related divestment gains, restructuring and integration charges: Cost of goods sold includes an acquisition related inventory step-up adjustment; Other income includes a gain from product sales required by regulators to approve the Alcon merger; Other expense relates primarily to Alcon integration costs.

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(5)

Other exceptional items: Net sales to third parties includes a returns provision related to *Tekturna/Rasilez* and a recall provision related to over-the-counter products; Cost of goods sold and Marketing & Sales include charges related to Consumer Health in the US; Cost of goods sold, Research & Development, Other income, and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold and Other expense include Swiss restructuring charges of $254 million; Research & Development includes a reduction to a contingent consideration liability related to a business combination of $106 million in Sandoz; Other income and expense include a net $183 million gain from the Jump litigation settlement and a $100 million settlement gain, a $85 million insurance settlement gain, product divestment gains of $378 million, charges of $284 million related to legal settlements, $161 million for IT and finance restructuring projects, an amount of $295 million related to *Tekturna/Rasilez*, an amount of $13 million related to SMC021, and other restructuring charges; Income from associated companies reflects a charge of $41 million for the Novartis share of Roche's restructuring.

(6)

Taxes on the adjustments between IFRS and core results take into account, for each individual item included in the adjustment, the tax rate that is applicable to the item in the jurisdiction where the adjustment arises. Generally, this results in amortization and impairment of intangible assets and acquisition-related restructuring and integration items having a full tax impact. There is usually a tax impact on exceptional items although this is not the case for items arising from criminal settlements in certain jurisdictions. Adjustments related to income from associated companies are recorded net of any related tax effect. Due to these factors and the differing effective tax rates in the various jurisdictions, the tax on the total adjustments of $5.2 billion to arrive at the core results before tax amounts to $917 million. This results in the average tax rate on the adjustments being 17.8%.

(7)

Earnings per share (EPS) is calculated on the amount of net income attributable to shareholders of Novartis AG.

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS PHARMACEUTICALS

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**26,258**	**228**		**6**	**26,492**
Operating income	**9,376**	**278**	**74**	**(205)**	**9,523**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(6,655)	228		6	(6,421)
The following are adjustments to arrive at Core Operating Income					
Marketing & Sales	(8,514)			27	(8,487)
Research & Development	(7,242)	50	29	2	(7,161)
Other income	699		(46)	(390)	263
Other expense	(774)		91	150	(533)

(1)

Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2)

Impairments: Research & Development includes impairment charges for in process projects; Other income includes charges related to the reversal of impairment charges related to aliskiren production equipment for which an alternative use has been found; Other expense includes impairment charges related to property, plant and equipment.

(3)

Other exceptional items: Cost of goods sold includes principally restructuring charges related to the Group-wide rationalization of manufacturing sites offset by a provision reduction related to aliskiren; Marketing & Sales includes charges related to termination of a co-promotional contract; Research & Development includes restructuring charges; Other income includes principally divestment gains and a reduction in restructuring charge provisions; Other expense includes restructuring charges and provisions for legal matters.

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2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**26,323**	**270**	**120**	**54**	**26,767**
Operating income	**9,598**	**322**	**238**	**55**	**10,213**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(6,578)	270	120	54	(6,134)
The following are adjustments to arrive at Core Operating Income					
Research & Development	(6,918)	52	91	78	(6,697)
Other income	577		(1)	(303)	273
Other expense	(755)		28	226	(501)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments related to marketed products; Research & Development includes principally impairment charges related to In Process Research & Development; Other income includes reversal of impairment of property, plant & equipment; Other expense includes impairments of property, plant & equipment and financial assets.

(3) Other exceptional items: Cost of goods sold, Research & Development, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Research & Development includes principally an increase of a contingent consideration liability related to a business combination; Other income includes a provision reduction of $137 million mainly related to *Tekturna/Rasilez* inventories, a product divestment gain of $93 million, and reversal of prior year restructuring charges of $70 million; Other expense includes a restructuring charge of $149 million related to the US business, an additional legal settlement provision of $19 million and an additional provision of $19 million related to *Tekturna/Rasilez* clinical studies, and a restructuring charge of $42 million related to the European and Asian business.

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2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**26,632**	**369**	**249**		**115**	**27,365**
Operating income	**8,296**	**423**	**985**	**(81)**	**417**	**10,040**
The following are adjustments to arrive at Core Gross Profit						
Net sales to third parties	32,508				44	32,552
Cost of goods sold	(6,573)	369	249		71	(5,884)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(7,232)	54	303		15	(6,860)
Other income	697		(3)	(81)	(436)	177
Other expense	(1,825)		436		723	(666)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments primarily related to *Tekturna/Rasilez*; Research & Development includes impairment charges principally for PTK796, AGO178 (agomelatine), PRT128 and SMC021; Other income includes an impairment reversal; Other expense includes impairments of $314 million related to *Tekturna/Rasilez* and $47 million related to SMC021, for financial assets, and related to the Group-wide rationalization of manufacturing sites.

(3) Acquisition-related divestment gains, restructuring and integration charges: Other income includes a gain from a product sale required by regulators to approve the Alcon merger.

(4) Other exceptional items: Net sales to third parties includes a returns provision related to *Tekturna/Rasilez*; Cost of goods sold, Research & Development and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold and Other expense include Swiss restructuring charges totalling $249 million; Other income includes a net product divestment gains of $334 million and a settlment income of $100 million and items related to the Group-wide rationalization of manufacturing sites; Other expense also includes an amount for a legal settlement of $80 million, an amount of $295 million related to *Tekturna/Rasilez*, an amount of $13 million related to SMC021, and other restructuring charges.

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2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS ALCON

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**5,673**	**1,980**			**12**	**7,665**
Operating income	**1,232**	**1,989**	**61**	**330**	**82**	**3,694**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(4,900)	1,980			12	(2,908)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(1,042)	9	57		37	(939)
General & Administration	(589)				25	(564)
Other income	79				(40)	39
Other expense	(437)		4	330	48	(55)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes impairment charges related to in process projects; Other expense includes impairment charges related to property, plant and equipment.

(3) Acquisition or divestment related items, restructuring and integration charges: Other expense reflects acquisition-related Alcon integration and restructuring charges.

(4) Other exceptional items: Cost of goods sold includes net restructuring charges related to the Group-wide rationalization of manufacturing sites offset by the release of a contingent consideration liability related to recent acquisitions; Research & Development includes a net increase of contingent consideration liabilities related to acquisitions; General & Administration includes exceptional IT costs; Other income includes the impact of an income from a post-retirement medical plan amendment; Other expense includes net restructuring charges related to European commercial operations and the Group-wide rationalization of manufacturing sites.

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2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**5,716**	**1,906**	**1**		**16**	**7,639**
Operating income	**1,465**	**1,915**	**17**	**264**	**37**	**3,698**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(4,618)	1,906	1		16	(2,695)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(975)	9	16			(950)
General & Administration	(510)				14	(496)
Other income	49				(1)	48
Other expense	(353)			264	8	(81)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments of intangible assets; Research & Development includes impairment charges related to In Process Research & Development.

(3) Acquisition or divestment related items, restructuring and integration charges: Other expense relates to Alcon integration costs.

(4) Other exceptional items: Cost of goods sold, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; General & Administration includes exceptional IT costs.

2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**5,457**	**1,912**			**20**	**7,389**

Operating income	**1,472**	**1,928**	**29**	**212**	**(149)**	**3,492**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(4,566)	1,912			20	(2,634)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(892)	3	20			(869)
General & Administration	(509)	13				(496)
Other income	262			(21)	(229)	12
Other expense	(309)		9	233	60	(7)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms; General & Administration includes the recurring amortization of intangible assets.

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(2) Impairments: Research & Development includes an In Process Research & Development impairment charge; Other expense includes impairment charges primarily related to the Group-wide rationalization of manufacturing sites.

(3) Acquisition-related divestment gains, restructuring and integration charges: Other income includes a gain from a product sale required by regulators to approve the Alcon merger; Other expense includes a loss from an Alcon merger-related divestment and Alcon integration costs.

(4) Other exceptional items: Cost of goods sold and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold includes a reduction to a contingent consideration provision related to a business combination; Other income and expense includes a net $183 million gain from the Jump litigation settlement.

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS SANDOZ

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**3,995**	**407**	**20**	**2**	**4,424**
Operating income	**1,028**	**409**	**17**	**87**	**1,541**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(5,476)	407	20	2	(5,047)
The following are adjustments to arrive at Core Operating Income					
Research & Development	(787)	2			(785)
Other income	106		(6)		100
Other expense	(240)		3	85	(152)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairment charges related to intangible assets; Other income includes a reversal of impairment charges related to property, plant and equipment; Other expense includes impairment charges related to property, plant and equipment.

(3) Other exceptional items: Cost of goods sold includes net restructuring charges related to the Group-wide rationalization of manufacturing sites; Other expense includes provisions for legal matters.

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2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**3,867**	**356**	**46**	**36**	**4**	**4,309**
Operating income	**1,091**	**364**	**46**	**62**	**(60)**	**1,503**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(5,126)	356	46	36	4	(4,684)
The following are adjustments to arrive at Core Operating Income						
Marketing & Sales	(1,561)			1		(1,560)
Research & Development	(695)	8	(3)		(59)	(749)
Other income	74				(10)	64
Other expense	(244)		3	25	5	(211)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes impairments of intangible assets; Research & Development includes principally a reversal of impairment charges related to In Process Research & Development; Other expense includes impairments of property, plant & equipment.

(3) Acquisition or divestment related items, restructuring and integration charges: Cost of goods sold includes Fougera related inventory step-up adjustment; Marketing & Sales and Other expense relate to Fougera integration costs.

(4) Other exceptional items: Cost of goods sold and Other income include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Research & Development includes principally a decrease of a contingent consideration liability related to a business combination; Other income also includes a restructuring provision release; Other expense includes exceptional remediation charges.

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2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**4,356**	**368**	**18**	**4**	**4,746**
Operating income	**1,422**	**383**	**26**	**90**	**1,921**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(5,445)	368	18	4	(5,055)
The following are adjustments to arrive at Core Operating Income					
Research & Development	(640)	15	7	(106)	(724)
Other income	88			(12)	76
Other expense	(422)		1	204	(217)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold and Research & Development include an impairment charge of intangible assets; Other expense includes an impairment charge.

(3) Other exceptional items: Cost of goods sold and Other income include restructuring charges, respectively release, related to the Group-wide rationalization of manufacturing sites; Research & Development includes a reduction to a contingent consideration liability related to a business combination; Other income includes the release of a restructuring provision in Germany; Other expense includes a charge related to US litigations.

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS VACCINES AND DIAGNOSTICS

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Core results
	$ m	$ m	$ m	$ m
Gross profit	**803**	**198**		**1,001**
Operating loss	**(165)**	**222**	**8**	**65**
The following are adjustments to arrive at Core Gross Profit				
Cost of goods sold	(1,578)	198		(1,380)
The following are adjustments to arrive at Core Operating loss				

Research & Development	(476)	24		(452)
Other expense	(88)		8	(80)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Other expense includes impairment charges for financial assets and property, plant and equipment.

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2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**755**	**197**		**3**	**(56)**	**899**
Operating income	**(250)**	**215**	**12**	**3**	**(55)**	**(75)**
The following are adjustments to arrive at Core Gross Profit						
Other revenues	331				(56)	275
Cost of goods sold	(1,478)	197		3		(1,278)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(453)	18	5		1	(429)
Other expense	(115)		7			(108)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes impairments of intangible assets; Other expense includes a facility impairment charge and impairments of financial assets.

(3) Acquisition or divestment related items, restructuring and integration charges: Cost of goods sold includes an acquisition related inventory step-up adjustment.

(4) Other exceptional items: Other revenues include an income related to an intellectual property settlement and license agreement; Research & Development includes restructuring charges related to the Group-wide rationalization of manufacturing sites.

2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Acquisition or divestment related items, restructuring and integration charges[3]	Other exceptional items[4]	Core results
	$ m	$ m	$ m	$ m	$ m	$ m
Gross profit	**954**	**211**		**5**	**2**	**1,172**

Operating income	**(249)**	**231**	**145**	**5**	**3**	**135**
The following are adjustments to arrive at Core Gross Profit						
Cost of goods sold	(1,410)	211		5	2	(1,192)
The following are adjustments to arrive at Core Operating Income						
Research & Development	(523)	20	8		1	(494)
Other expense	(185)		137			(48)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Research & Development includes an In Process Research & Development impairment charge; Other expense includes an impairment charge of a financial asset.

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(3) Acquisition-related divestment gains, restructuring and integration charges: Cost of goods sold includes an acquisition related inventory step-up adjustment.

(4) Other exceptional items: Cost of goods sold and Research & Development adjustments represent restructuring charges related to the Group-wide rationalization of manufacturing sites.

2013, 2012 AND 2011 RECONCILIATION OF IFRS RESULTS TO CORE RESULTS CONSUMER HEALTH

2013	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,360**	**53**	**8**	**21**	**2,442**
Operating income	**178**	**53**	**40**	**27**	**298**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(1,751)	53	8	21	(1,669)
The following are adjustments to arrive at Core Operating Income					
Other income	79		(1)	(1)	77
Other expense	(63)		33	7	(23)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets.

(2) Impairments: Cost of goods sold includes impairment charges related to intangible assets; Other income includes a reduction of an impairment charge; Other expense includes impairments of property, plant and equipment related to the Group-wide rationalization of manufacturing sites.

(3) Other exceptional items: Cost of goods sold and Other expense include restructuring charges related to the Group-wide rationalization of manufacturing sites; Other income includes reversal of charges related to the Group-wide rationalization of manufacturing sites.

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2012	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,050**	**57**	**7**	**25**	**2,139**
Operating income	**48**	**57**	**10**	**44**	**159**
The following are adjustments to arrive at Core Gross Profit					
Cost of goods sold	(1,729)	57	7	25	(1,640)
The following are adjustments to arrive at Core Operating Income					
Other income	75			(8)	67
Other expense	(73)		3	27	(43)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets.

(2) Impairments: Cost of goods sold includes impairments of intangible assets; Other expense includes impairments of property, plant & equipment.

(3) Other exceptional items: Cost of goods sold, Other income, and Other expense include net restructuring charges related to the Group-wide rationalization of manufacturing sites; Cost of goods sold also includes an additional charge for product recalls related to a US production plant and an impairment of a long-term asset; Other income includes a restructuring provision release; Other expense includes a legal settlement related to a US production plant.

2011	IFRS results	Amortization of intangible assets[1]	Impairments[2]	Other exceptional items[3]	Core results
	$ m	$ m	$ m	$ m	$ m
Gross profit	**2,935**	**58**	**11**	**105**	**3,109**
Operating income	**727**	**59**	**16**	**71**	**873**
The following are adjustments to arrive at Core Gross Profit					
Net sales to third parties	4,631			73	4,704
Cost of goods sold	(1,735)	58	11	32	(1,634)
The following are adjustments to arrive at Core Operating Income					
Marketing & Sales	(1,674)			2	(1,672)
Research & Development	(296)	1	3		(292)
Other income	91			(44)	47

Other expense	(38)	2	8	(28)

(1) Amortization of intangible assets: Cost of goods sold includes recurring amortization of acquired rights to in-market products and other production-related intangible assets; Research & Development includes the recurring amortization of acquired rights for technology platforms.

(2) Impairments: Cost of goods sold includes an impairment charge related to Consumer Health in the US; Research & Development and Other expense include impairment charges.

(3) Other exceptional items: Net sales to third parties includes an over-the-counter products recall provision; Cost of goods sold and Marketing & Sales include charges related to Consumer Health in the US; Other income includes a product divestment gain; Other expense includes charges related to the Group-wide rationalization of manufacturing sites and other restructuring charges.

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2013 and 2012 Reconciliation of segment operating income to Core operating income

	Pharmaceuticals		Alcon		Sandoz		Vaccines and Diagnostics		Consumer Health		Corporate	Restated	Total	Restated
	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012	2013	2012[1]	2013	2012[1]
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Operating income	**9,376**	**9,598**	**1,232**	**1,465**	**1,028**	**1,091**	**(165)**	**(250)**	**178**	**48**	**(739)**	**(759)**	**10,910**	**11,193**
Amortization of intangible assets	**278**	**322**	**1,989**	**1,915**	**409**	**364**	**222**	**215**	**53**	**57**	**4**	**3**	**2,955**	**2,876**
Impairments														
Intangible assets	29	211	57	17	20	43		5	8	7			114	283
Property, plant & equipment related to the Group-wide rationalization of manufacturing sites	1								33				34	
Other property, plant & equipment	28	25	4		(3)	3	1	6	(1)	3	17	2	46	39
Financial assets	16	2					7	1			42	31	65	34
Total impairment charges	**74**	**238**	**61**	**17**	**17**	**46**	**8**	**12**	**40**	**10**	**59**	**33**	**259**	**356**
Acquisition-related items														
Expenses			330	264		62		3			1	1	331	330
Total acquisition-related items, net			**330**	**264**		**62**		**3**			**1**	**1**	**331**	**330**
Other exceptional items														
Exceptional divestment gains	(313)	(93)										(51)	(313)	(144)
Restructuring items														
Income	(40)	(70)		(1)		(10)				(8)			(40)	(89)
Expense	122	240	77	24	2	4		1	25	3			226	272
Legal-related items														
Expense	33	19			85					25			118	44
Additional exceptional income	(70)	(137)	(56)		(4)	(59)		(56)			(75)		(205)	(252)
Additional exceptional expense	63	96	61	14	4	5			2	24	114	117	244	256
Total other exceptional items	**(205)**	**55**	**82**	**37**	**87**	**(60)**		**(55)**	**27**	**44**	**39**	**66**	**30**	**87**
Total adjustments	**147**	**615**	**2,462**	**2,233**	**513**	**412**	**230**	**175**	**120**	**111**	**103**	**103**	**3,575**	**3,649**
Core operating income	**9,523**	**10,213**	**3,694**	**3,698**	**1,541**	**1,503**	**65**	**(75)**	**298**	**159**	**(636)**	**(656)**	**14,485**	**14,842**

Core return on net sales	**29.6%**	**31.8%**	**35.2%**	**36.2%**	**16.8%**	**17.3%**	**3.3%**	**(4.0)%**	**7.3%**	**4.3%**	**25.0%**	**26.2%**

(1) Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

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2012 and 2011 Reconciliation of segment operating income to Core operating income

	Pharmaceuticals		Alcon		Sandoz		Vaccines and Diagnostics		Consumer Health		Corporate		Total	
	2012	2011	2012	2011	2012	2011	2012	2011	2012	2011	Restated 2012[1]	Restated 2011[1]	Restated 2012[1]	Restated 2011[1]
	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m	$ m
Operating income	**9,598**	**8,296**	**1,465**	**1,472**	**1,091**	**1,422**	**(250)**	**(249)**	**48**	**727**	**(759)**	**(888)**	**11,193**	**10,780**
Amortization of intangible assets	**322**	**423**	**1,915**	**1,928**	**364**	**383**	**215**	**231**	**57**	**59**	**3**	**4**	**2,876**	**3,028**
Impairments														
Intangible assets	211	552	17	20	43	25	5	8	7	14			283	619
Property, plant & equipment related to the Group-wide rationalization of manufacturing sites		12		5										17
Other property, plant & equipment	25	391			3	1	6	2	3	2	2		39	396
Financial assets	2	30		4			1	135			31	23	34	192
Total impairment charges	**238**	**985**	**17**	**29**	**46**	**26**	**12**	**145**	**10**	**16**	**33**	**23**	**356**	**1,224**
Acquisition-related items														
Gains		(81)		(21)										(102)
Expenses			264	233	62		3	5			1	12	330	250
Total acquisition-related items, net		**(81)**	**264**	**212**	**62**		**3**	**5**			**1**	**12**	**330**	**148**
Other exceptional items														
Exceptional divestment gains	(93)	(334)								(44)	(51)		(144)	(378)
Restructuring items														
Income	(70)		(1)		(10)	(12)			(8)				(89)	(12)
Expense	240	420	24	52	4	4	1	3	3	8			272	487
Legal-related items														
Income		(100)		(229)										(329)
Expense	19	80		45		204			25				44	329
Additional exceptional income	(137)			(17)	(59)	(106)	(56)					(85)	(252)	(208)
Additional exceptional expense	96	351	14		5				24	107	117	164	256	622
Total other exceptional items	**55**	**417**	**37**	**(149)**	**(60)**	**90**	**(55)**	**3**	**44**	**71**	**66**	**79**	**87**	**511**
Total adjustments	**615**	**1,744**	**2,233**	**2,020**	**412**	**499**	**175**	**384**	**111**	**146**	**103**	**118**	**3,649**	**4,911**
Core operating income	**10,213**	**10,040**	**3,698**	**3,492**	**1,503**	**1,921**	**(75)**	**135**	**159**	**873**	**(656)**	**(770)**	**14,842**	**15,691**

Core return on net sales	**31.8%**	**30.9%**	**36.2%**	**35.1%**	**17.3%**	**20.3%**	**(4.0)%**	**6.8%**	**4.3%**	**18.9%**	**26.2%**	**26.8%**

(1) In 2012 Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) and in 2011 by an additional $218 million expense ($173 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

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NOVARTIS ECONOMIC VALUE ADDED

Novartis utilizes its own definition for measuring Novartis Economic Value Added (NVA), which is utilized for determining payouts under the Long-Term Performance Plan (LTPP). NVA is a non-IFRS metric and may not be comparable to the calculation of similar measures of other companies. This measure is presented solely to permit investors to more fully understand how the Group's management is compensated. The following table shows NVA for 2013 and 2012 utilizing the Novartis definition.

	Year ended December 31, 2013	Year ended December 31, 2012[1]	Change in $
	$ m	$ m	%
Operating income	**10,910**	**11,511**	**(5)**
Income from associated companies	600	552	9
Operating interest	(335)	(348)	4
Operating tax	(2,151)	(2,334)	8
Capital charge	(6,330)	(7,060)	10
Novartis Economic Value Added	**2,694**	**2,321**	**16**

(1) Since in 2012 these values were used for the payouts under the LTPP there has been no restatement to reflect the adoption of revised IAS 19 on *Employee Benefits*, see "Item 18. Financial Statements Note 30".

Operating interest is the internal charge on average working capital based on the short-term borrowing rates of the entity owning them.

Operating tax is the internal tax charge for each entity applying the applicable tax rate to the profit before tax of each entity unadjusted for tax-disallowed items or tax loss carryforwards.

The capital charge is the notional interest charge on the Group's average non-current assets based on an internally calculated weighted average cost of capital for the Group.

5.B Liquidity and Capital Resources

Cash Flow

The following table sets forth certain information about the Group's cash flow and net debt.

	2013	2012	2011
	$ m	$ m	$ m
Cash flows from operating activities	13,174	14,194	14,309
Cash flows used in investing activities	(3,352)	(5,675)	(792)
Cash flows used in financing activities	(8,769)	(6,675)	(15,024)
Currency translation effect on cash and cash equivalents	82	(1)	(103)
Net change in cash and cash equivalents	**1,135**	**1,843**	**(1,610)**
Change in marketable securities, commodities, time deposits and derivative financial instruments	(32)	1,201	(1,449)

Change in current and non-current financial debts and derivative financial instruments	1,708	503	2,758
Change in net debt	**2,811**	**3,547**	**(301)**
Net debt at January 1	(11,607)	(15,154)	(14,853)
Net debt at December 31	**(8,796)**	**(11,607)**	**(15,154)**

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Financial year 2013

In 2013, cash flow from operating activities amounted to $13.2 billion compared to $14.2 billion in the prior year, mainly due to lower operating income and higher working capital requirements.

In 2013, cash flow used in investing activities was $3.4 billion compared to $5.7 billion in the prior year. It includes investments in property, plant and equipment, which amounted to $3.1 billion compared to $2.7 billion in the prior year. These expenditures represent 5.3% and 4.8% of net sales in 2013 and 2012, respectively. The prior year cash flow used in investing activities included higher net investments in marketable securities of $1.1 billion and $1.7 billion for the acquisition of businesses mainly for the acquisition of Fougera Pharmaceuticals, Inc.

In 2013, cash flow used in financing activities amounted to $8.8 billion compared to $6.7 billion in 2012. The 2013 amount included a dividend payment of $6.1 billion, compared to $6.0 billion in 2012. There was a further $2.7 billion cash outflow in 2013, mainly related to net repayments of financial debts of $1.3 billion as well as a net outflow of $1.2 billion for treasury share purchases. This net outflow results from $2.9 billion spent on the acquisition of treasury shares and $1.7 billion of proceeds mainly from exercised options. In 2012, besides the dividend payment the cash flow used in financing activities mainly includes a net repayment of financial debts of $0.5 billion and a net cash outflow of $0.1 billion for treasury share transactions.

Financial year 2012

In 2012, cash flow from operating activities amounted to $14.2 billion, only marginally lower than the strong prior year amount of $14.3 billion as the impact of lower tax payments was offset by the payments from provisions created in earlier periods.

The cash flow used in investing activities amounted to $5.7 billion, $4.9 billion higher than 2011, which primarily reflected the amount spent for the acquisition of Fougera Pharmaceuticals, Inc. ($1.5 billion) and net investments in property, plant and equipment and other non-current assets, which amounted to $2.8 billion, while the net investment in marketable securities amounted to $1.1 billion. In 2011, the impact of the net investments in property, plant and equipment and in other non-current assets ($1.8 billion), as well as the cash used for acquisitions ($0.6 billion), were partially offset by the net proceeds from the sale of marketable securities ($1.6 billion).

In 2012, the cash used in financing activities amounted to $6.7 billion mainly on account of the dividend payment ($6.0 billion) and $0.5 billion net repayment of financial debt and represented a decrease of $8.3 billion compared to the prior year period. In 2011, the cash flow used in financing activities amounted to $15.0 billion mainly on account of the dividend payment ($5.4 billion), treasury share transactions ($3.5 billion), the acquisition of the non-controlling interest in Alcon ($3.2 billion) and $2.8 billion for the net repayment of financial debt.

Financial year 2011

In 2011, the cash flow from operating activities was $14.3 billion, a 2% increase from $14.1 billion in 2010 which included $1.8 billion of cash collections for A (H1N1) pandemic flu vaccines.

The strong increase in operating income after adjustments for non-cash items was partially mitigated by working capital requirements to fund business expansion.

Cash outflows for investing activities were $0.8 billion compared to $15.8 billion in the prior year period. Outflows for investments in property, plant and equipment ($2.2 billion) and intangible and financial assets ($0.4 billion) as well as acquisition of businesses ($0.6 billion), mainly Genoptix Inc., were partly compensated by net inflows from the sale of marketable securities ($1.6 billion) and proceeds from the sales of various assets ($0.8 billion, mainly Elidel® marketing rights).

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In the prior year period, outflows for investments in property, plant and equipment ($1.7 billion) and in intangible and financial assets ($0.7 billion) as well as acquisition of businesses ($26.7 billion), mainly Alcon, were partially funded by the sale of marketable securities (net, $12.6 billion) and proceeds from the sales of various assets ($0.7 billion).

Net cash used for financing activities was $15.0 billion in 2011. It was comprised of outflows of $5.4 billion for the dividend payment, of a net $3.5 billion for treasury share repurchases, $3.2 billion for the acquisition of the Alcon non-controlling interests and net $2.8 billion for the repayment of financial debt and $0.1 billion other financing items. In 2010 the financing activities resulted in a net cash inflow of $4.1 billion on account of additional debt raised for the increased Alcon investment.

Condensed Consolidated Balance Sheets

	Dec 31, 2013	Restated Dec 31, 2012[1]	Change
	$ m	$ m	$ m
Assets			
Property, plant & equipment	18,197	16,939	1,258
Goodwill	31,026	31,090	(64)
Intangible assets other than goodwill	27,841	30,331	(2,490)
Financial and other non-current assets	18,648	17,827	821
Total non-current assets	**95,712**	**96,187**	**(475)**
Inventories	7,267	6,744	523
Trade receivables	9,902	10,051	(149)
Other current assets	3,392	3,090	302
Cash, marketable securities, commodities, time deposits and derivative financial instruments	9,222	8,119	1,103
Assets of disposal group held for sale	759		759
Total current assets	**30,542**	**28,004**	**2,538**
Total assets	**126,254**	**124,191**	**2,063**
Equity and liabilities			
Total equity	**74,472**	**69,263**	**5,209**
Financial debts	11,242	13,781	(2,539)
Other non-current liabilities	14,172	17,096	(2,924)
Total non-current liabilities	**25,414**	**30,877**	**(5,463)**
Trade payables	6,148	5,593	555
Financial debts and derivatives	6,776	5,945	831
Other current liabilities	13,394	12,513	881

Liabilities of disposal group held for sale	50		50
Total current liabilities	**26,368**	**24,051**	**2,317**
Total liabilities	**51,782**	**54,928**	**(3,146)**
Total equity and liabilities	**126,254**	**124,191**	**2,063**

(1) Other income and Other expense have been restated by an additional $318 million expense ($235 million after taxes) to reflect the adoption of revised IAS 19 on *Employee Benefits* (see "Item 18. Financial Statements-Note 30").

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Total non-current assets amounted to $95.7 billion at December 31, 2013, compared to $96.2 billion at December 31, 2012. Property, plant and equipment increased by $1.3 billion, as net additions of $2.9 billion and favorable currency translation differences of $0.2 billion exceeded depreciation and impairments of $1.8 billion. Goodwill decreased slightly to $31.0 billion as positive currency translation differences of $0.2 billion were more than offset by the decrease in goodwill of $0.3 billion attributable to the Diagnostics business, which has been reclassified into the disposal group held for sale. Financial and other non-current assets increased by $0.8 billion while intangible assets decreased by $2.5 billion since the beginning of the year to $27.8 billion as the amortization and impairments of $3.1 billion exceeded net additions of $0.6 billion.

Total current assets of $30.5 billion at December 31, 2013 increased by $2.5 billion compared to the prior year-end, driven by an increase in cash and cash equivalents of $1.1 billion and the separate disclosure of the current and non-current assets of the Diagnostics business divested in January 2014, amounting to $0.8 billion.

Trade receivable balances include sales to drug wholesalers, retailers, private health systems, government agencies, managed care providers, pharmacy benefit managers and government-supported healthcare systems. Novartis continues to monitor sovereign debt issues and economic conditions in Greece, Italy, Portugal, Spain (GIPS) and other countries and evaluates trade receivables in these countries for potential collection risks. Substantially all of the trade receivables from such countries are due directly from local governments or from government-funded entities. Deteriorating credit and economic conditions and other factors in these countries have resulted in, and may continue to result in an increase in the average length of time that it takes to collect these trade receivables and may require Novartis to re-evaluate the collectability of these receivables in future periods.

Based on our current incurred loss provisioning approach, we consider that our doubtful debt provisions are adequate. However, we intend to continue to monitor the level of trade receivables in the GIPS countries. Should there be a substantial deterioration in our economic exposure, we may increase our level of provisions by moving to an expected loss provisioning approach or may change the terms of trade on which we operate.

The following table provides an overview of our aging analysis of our trade receivables as of December 31, 2013 and 2012:

	2013	**2012**
	$ m	**$ m**
Not overdue	8,650	8,584
Past due for not more than one month	509	552
Past due for more than one month but less than three months	303	321
Past due for more than three months but less than six months	259	301
Past due for more than six months but less than one year	263	205
Past due for more than one year	268	305
Provisions for doubtful trade receivables	(196)	(217)
Total trade receivables, net	**10,056**	**10,051**
Less assets of disposal group held for sale	(154)	
Total trade receivables excluding disposal group, net	**9,902**	**10,051**

With regard to the GIPS countries, the countries with the largest outstanding trade receivables exposure are Italy and Spain. Substantially all of the outstanding trade receivables from these countries are due directly from local governments or from government-funded entities. The movement in the

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outstanding trade receivables from Italy and Spain during the year and the related outstanding trade receivables and provision at December 31, 2013 and 2012 is as follows:

Italy

	2013	2012
	$ m	$ m
Gross trade receivables at December 31	636	712
Past due for more than one year at December 31	55	68
Provision at December 31	43	41

Spain

	2013	2012
	$ m	$ m
Gross trade receivables at December 31	563	435
Past due for more than one year at December 31	111	6
Provision at December 31	22	5

The Government of Spain has established a plan, known as ICO 2, to help repay debts owed by local Spanish governmental authorities. A significant portion of the amounts due to Novartis from Spain that are past due for more than one year have been accepted into this plan. It is intended that payments will be made from this plan in 2014.

Other non-current liabilities amounted to $14.2 billion compared to $17.1 billion in the prior year. A major portion of this decrease of $2.9 billion arose from the decrease in the accrued liability for employee benefits related to our funded and unfunded defined benefit pension plans around the world, but principally in Switzerland and the US, as well as unfunded and funded US post-retirement medical benefit schemes. The net unfunded deficit of $4.2 billion related to the defined benefit schemes comprises actuarially determined liabilities of $25.9 billion partially offset by funded plan assets of $21.7 billion.

This deficit adjusted for the overfunding of certain plans, is recognized in our provisions and fluctuates considerably from time to time. This is due to the fact that the assets consist of both marketable securities and other investments which are valued at their current market value. The actuarially calculated post-employment defined benefit obligations of $25.9 billion have an average duration of 13.8 years and are extremely sensitive to movements in interest rates which are currently still rather low.

Trade payables of $6.1 billion and other current liabilities of $13.4 billion increased by $0.6 billion and $0.9 billion, respectively.

Included in other current liabilities are $2.5 billion relating to outstanding taxes. While there is some uncertainty about the final taxes to be assessed in our major countries, we consider this uncertainty to be limited since our tax assessments are generally relatively current. In our key countries, Switzerland and the US, assessments have been agreed by the tax authorities up to 2009, with the exception of one open US position in 2007.

The Group is exposed to a potential adverse devaluation risk on its intercompany funding and total investment in certain subsidiaries operating in countries with exchange control. The most significant country in this respect is Venezuela, where the Group has approximately $220 million of cash in the country, which is only slowly being approved for remittance outside the country. As a result, the Group is exposed to a potential income statement financial result devaluation loss on its total intercompany balances with subsidiaries in Venezuela and related net investments, which at December 31, 2013 amounted to approximately $340 million and $35 million, respectively. The Group used the official exchange rate as published by CADIVI (Venezuelan Commission for the Administration of Foreign

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Currency) of VEF 4.3/$ until the devaluation on February 8, 2013 and VEF 6.3/$ since then for the consolidation of the financial statements of the Venezuelan subsidiaries.

The Group's total equity increased by $5.2 billion over the year to $74.5 billion at December 31, 2013, compared to $69.3 billion at the end of 2012. This increase was driven by net income of $9.3 billion and actuarial gains of $1.5 billion. Movements related to share-based compensation and favorable currency translation differences contributed an additional $1.1 billion and $0.7 billion, respectively. This more than offset the $6.1 billion dividend payment for 2012 and the net purchases of treasury shares of $1.3 billion.

Liquidity

Financial year 2013

As a result of the strong cash flow generation, our liquidity increased over the year to $9.2 billion at December 31, 2013 from $8.1 billion at the prior year-end even after repayment of the $2.0 billion bond that matured in April 2013 and consists of $6.7 billion cash and cash equivalents and of $2.5 billion marketable securities, commodities and derivative financial instruments. In 2012, liquidity included cash and cash equivalent of $5.5 billion and marketable securities and financial instruments of $2.6 billion.

Financial year 2012

As a result of the strong cash flow generation, the Group liquidity increased over the year to $8.1 billion at December 31, 2012 from $5.1 billion at the prior year end even after repayment of the CHF 700 million bond that matured in 2012. The Group liquidity consists of $5.5 billion cash and cash equivalents and of $2.6 billion marketable securities and derivative financial instruments.

Net Debt

Financial year 2013

As of December 31, 2013, our net debt decreased to $8.8 billion compared to $11.6 billion at the end of 2012.

The total gross financial debt decreased by $1.7 billion and amounted to $18.0 billion compared to $19.7 billion in 2012.

Long-term financial debt amounted to $11.2 billion which is a reduction of $2.6 billion compared to 2012, mainly due to a bond and loan reclassification to short-term financial debt which are due within the next twelve months. Long-term financial debt consists of bonds of $10.9 billion and other long-term financial debt of $0.3 billion. For further details see "Item 18. Financial Statements Note 19".

Short-term debt increased by $0.9 billion from $5.9 billion at December 31, 2012 to $6.8 billion at December 31, 2013, mainly due to the $2.6 billion reclassification of long-term financial debt and a repayment of a $2.0 billion bond in the second quarter of 2013 totaling a net increase of $0.6 billion. In addition, commercial paper and other short-term debts, including derivatives, increased by $0.3 billion. Overall short-term debt consists of commercial paper of $1.0 billion, the current portion of long-term debt of $2.6 billion and other short-term borrowings (including derivatives) of $3.2 billion. For further details see "Item 18. Financial Statements Note 21".

The Group's debt/equity ratio improved slightly to 0.24:1 at December 31, 2013 compared to 0.28:1 at the beginning of the year.

In 2013, the long-term credit rating for the Company continues to be double-A (Moody's Aa3; Standard & Poor's AA-; Fitch AA). Moody's downgraded Novartis from Aa2 to Aa3 in February 2013.

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Financial year 2012

As of December 31, 2012, our net debt decreased to $11.6 billion at the end of 2012 from a net debt of $15.2 billion at the end of 2011.

Total gross financial debt was $19.7 billion, as compared with $20.2 billion as of December 31, 2011. Total gross financial debt in 2012 decreased compared to 2011 by $0.5 billion.

We have $14.8 billion of bonds and Medium Term Notes and other long-term financial loans of $1.0 billion outstanding at December 31, 2012. We had $13.5 billion of bonds and Medium Term Notes and other long-term financial loans of $1.1 billion outstanding at December 31, 2011. For details on the maturity profile of debt, currency and interest rate structure, see "Item 18. Financial Statements Note 19".

We had current debt (excluding the current portion of non-current debt) of $3.9 billion as compared with $5.6 billion as of December 31, 2011. This current debt consists mainly of $2.8 billion (2011: $3.4 billion) in other bank and financial debt, including interest bearing employee accounts; $963 million (2011: $2.2 billion) of commercial paper, and $162 million (2011: $30 million) of other current debt. For further details see "Item 18. Financial Statements Note 21".

Credit agencies in 2012 maintained their ratings for Novartis. Moody's rated the Group as Aa2 for long-term maturities and P-1 for short-term maturities and Standard & Poor's had a rating of AA- for long-term and A-1+ for short-term maturities. Fitch had a long-term rating of AA and a short-term rating of F1+.

The 2012 year-end debt/equity ratio decreased to 0.28:1 from 0.31:1 in 2011 principally due to less current financial debt being outstanding under the commercial paper programs.

We are in compliance with all covenants or other requirements set forth in our financing agreements. We do not have any rating downgrade triggers that would accelerate maturity of our debt. For details of the maturity profile of debt, currency and interest rate structure, see "Item 18. Financial Statements Note 19".

Net debt/liquidity constitutes a non-IFRS financial measure, which means that it should not be interpreted as a measure determined under IFRS. Net debt/liquidity is presented as additional information as it is a useful indicator of the Group's ability to meet financial commitments and to invest in new strategic opportunities, including strengthening its balance sheet.

We use derivative financial instruments for the purpose of hedging to reduce the volatility in the Group's performance due to the exposure to various types of business risks. These derivatives are expected to offset the change in value or cash flow of the hedged item. Our objective is to reduce fluctuations in earnings and cash flows.

We use US dollar as our reporting currency and we are therefore exposed to foreign exchange movements, primarily in European, Japanese and other Asian and Latin American currencies. Consequently, we enter into various contracts which change in value as foreign exchange rates change, to preserve the value of assets, commitments and anticipated transactions. We also use forward contracts and foreign currency option contracts to hedge certain anticipated net revenues in foreign currencies.

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The following table provides a breakdown of liquid funds and financial debt by currency:

	Liquidity in % 2013	Liquidity in % 2012	Liquidity in % 2011	Financial debt in % 2013	Financial debt in % 2012	Financial debt in % 2011
$	80	72	60	58	63	56
EUR	1	5	2	12	11	13
CHF	11	15	33	15	13	15
JPY				11	10	14
Other	8	8	5	4	3	2
	100	100	100	100	100	100

Free Cash Flow

Novartis defines free cash flow as cash flow from operating activities adjusted for cash flow associated with the purchase or sale of property, plant and equipment, intangible, other non-current and financial assets. Cash flows in connection with the acquisition or divestment of subsidiaries, associated companies and non-controlling interests in subsidiaries are also not taken into account to determine free cash flow.

Free cash flow is presented as additional information because Novartis considers it is a useful indicator of the Group's ability to operate without relying on additional borrowing or the use of existing cash. Free cash flow is a measure of the net cash generated that is available for debt repayment, investment in strategic opportunities and for returning to shareholders. The Group uses free cash flow as a performance measure when making internal comparisons of the results of divisions. Free cash flow constitutes a non-IFRS financial measure, which means that it should not be interpreted as a measure determined under IFRS. Free cash flow is not intended to be a substitute measure for cash flow from operating activities (as determined under IFRS).

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The following is a summary of the Group's free cash flow:

	2013	Restated 2012[1]	Restated 2011[1]
	$ m	$ m	$ m
Operating income	**10,910**	**11,193**	**10,780**
Reversal of non-cash items			
Depreciation, amortization and impairments	4,990	4,954	5,980
Change in provisions and other non-current liabilities	807	857	1,513
Other	335	452	272
Operating income adjusted for non-cash items	**17,042**	**17,456**	**18,545**
Interest and other financial receipts	541	689	470
Interest and other financial payments	(631)	(616)	(687)
Taxes paid	(2,024)	(2,022)	(2,435)
Payments out of provisions and other net cash movements in non-current liabilities	(1,015)	(1,173)	(1,471)
Change in inventory and trade receivables less trade payables	(562)	183	(492)
Change in other net current assets and other operating cash flow items	(177)	(323)	379
Cash flows from operating activities	**13,174**	**14,194**	**14,309**
Purchase of property, plant & equipment	(3,064)	(2,698)	(2,167)
Purchase of intangible assets	(507)	(370)	(220)
Purchase of financial assets	(165)	(180)	(139)
Purchase of other non-current assets	(39)	(57)	(48)
Proceeds from sales of property, plant & equipment	60	92	61
Proceeds from sales of intangible assets	154	163	643
Proceeds from sales of financial assets	315	221	59
Proceeds from sales of other non-current assets	17	18	5
Group free cash flow	**9,945**	**11,383**	**12,503**

(1) Restated to reflect the adoption of revised IAS19 on *Employee Benefits* (see "Item 18. Financial Statements Note 30").

Financial year 2013

In 2013, the free cash flow of $9.9 billion was 13% below the prior year. Aside from the significant currency impact, major reasons for the decline were increased trade receivables and higher capital investments in manufacturing and research facilities.

The free cash flow was primarily used for the dividend payments to shareholders of $6.1 billion as well as a $1.3 billion net repayment of financial debt and for treasury share purchases of net $1.2 billion. This allocation reflects management's intention to optimize shareholder returns whilst at the same time reinvesting surplus funds in the business to promote future growth.

Financial year 2012

In 2012, the free cash flow of $11.4 billion was $1.1 billion lower than the prior year mainly on account of higher investments in property, plant and equipment of $2.7 billion compared to $2.2 billion (4.8% of net sales compared to 3.7% in 2011) and lower divestment proceeds which amounted to $0.5 billion in 2012 compared to $0.8 billion in 2011.

This free cash flow was primarily used for dividend payments to shareholders of $6.0 billion (compared to $5.4 billion in 2011), for the recent acquisitions which on a net cash basis amounted to $1.7 billion (mainly Fougera Pharmaceuticals Inc.), and for the reduction of net debt of $3.5 billion. This

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allocation reflects Management's intention to optimize shareholders returns whilst at the same time reinvesting surplus funds in the business to promote future growth.

Financial year 2011

Free cash flow for 2011 was $12.5 billion, which represents an increase of 1% or $0.2 billion compared to 2010. Main contributors were Pharmaceuticals with $10.8 billion followed by Alcon with $3.5 billion while other divisions contributed in total $2.1 billion. Corporate had a free cash outflow of $3.9 billion mainly on account of interest and tax payments. Free cash flow of $12.5 billion was deployed for dividend payments of $5.4 billion and share repurchases of $5.9 billion (including $2.4 billion repurchased indirectly via Alcon, Inc. to reduce the dilutive impact of the subsequent merger of Alcon, Inc. into Novartis AG). In total, dividends and share repurchases utilized 90% of the Group's 2011 free cash flow.

Capital Resources

Funding of the Alcon transaction 2011

During 2011, prior to the merger of Alcon, Inc. into Novartis AG on April 8, 4.8% of the non-controlling interests in Alcon, Inc. were acquired for $2.4 billion.

Completion of the acquisition of the outstanding 18.6% interest in Alcon on April 8, 2011 and subsequent merger, resulted in the issuance of Novartis shares with a fair value of $9.2 billion and a contingent value payment of $0.5 billion.

The final purchase price allocation was completed in 2011 and resulted in a fair value of net identifiable assets of $27.0 billion and goodwill of $18.0 billion. Also, the excess of the value exchanged for these 2011 transactions over the recorded value of the non-controlling interest together with merger related transaction costs resulted in a reduction in equity of $5.7 billion.

For additional information, see "Item 18, Financial Statements Notes 2 and 24".

Share Repurchase Plans

During 2013, approximately 34.3 million treasury shares were delivered as a result of options exercised related to employee participation programs and related transactions. Novartis is mitigating the dilutive impact of these programs on an ongoing basis and repurchased 33.3 million of its shares for $2.5 billion in 2013 on the first trading line on the SIX. These shares will be kept as treasury shares principally for future employee participation program purposes. An additional 4.8 million shares have been purchased from employees for $0.4 billion. On November 22, 2013, Novartis announced to buy back shares on the second trading line up to an amount of $5.0 billion spread over two years. This repurchase is done on the basis of a decision made by the Annual General meeting 2008 for a share buy-back program of up to CHF 10.0 billion, of which CHF 7.5 billion is still available. 2.2 million shares have already been purchased in 2013 as part of this buy-back.

During 2012, Novartis repurchased 4.6 million of its shares for $240 million on the first trading line on the SIX. These shares will be kept as treasury shares principally for future employee participation program purposes. Following the approval of our shareholders at the Annual General Meeting on February 23, 2012, all shares repurchased on the second trading line of the SIX during 2011 were cancelled (total of 39.4 million shares, which corresponded to 1.4% of the registered Novartis share capital), and the share capital was reduced accordingly.

In 2011, Novartis has carried out the share repurchases committed to at the time of the Alcon merger announcement. These share repurchases amounted to $5.3 billion including the purchases of $2.4 billion of Alcon shares, a contingent value payment of $0.5 billion and repurchases of $2.4 billion of Novartis

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shares (39.4 million shares). All of these Novartis shares were repurchased on the second trading line during the first six months of 2011. In addition, in the second half of 2011, Novartis repurchased $1.1 billion (20.4 million shares) of own shares on the first trading line. These shares will be kept as treasury shares to mostly cover future employee participation programs.

No shares were cancelled in 2011 as none had been repurchased in the 12 months to December 2010.

Treasury shares

At December 31, 2013, our holding of treasury shares amounted to 280.1 million shares or 10% of the total number of issued shares. Approximately 149 million treasury shares are held in entities that limit their availability for use.

At December 31, 2012, our holding of treasury shares amounted to 285.6 million shares or 11% of the total number of issued shares. Approximately 175 million treasury shares are held in entities that limit their availability for use.

At December 31, 2011, our holding of treasury shares amounted to 338.9 million shares or 12% of the total number of issued shares. Approximately 181 million treasury shares are held in entities that limit their availability for use.

Bonds

In April 2013, a 1.9% US Dollar bond of $2.0 billion was repaid.

In September 2012, a $2.0 billion bond offering was completed in the United States. Two tranches were issued, one 10-year bond of $1.5 billion with a coupon of 2.4% and the other at $0.5 billion 30-year bond with a coupon of 3.7%. Further, a 3.5% Swiss franc bond of CHF 700 million was repaid in 2012.

In 2011 no bonds were issued or repaid.

Direct Share Purchase Plans

Since 2004, Novartis has offered a Direct Share Purchase Plan to investors residing in Switzerland, Liechtenstein, France and the United Kingdom. This plan was the first of its kind in Europe. It offers an easy and inexpensive way for investors to directly purchase Novartis registered shares and for them to be held at no cost in a deposit account with SIX SAG AG. At the beginning of 2013, Novartis closed the plan for non-Swiss residents. At the end of 2013, a total of 7946 shareholders were enrolled in this plan.

Liquidity/Short-term Funding 2013 and 2012

We continuously track our liquidity position and asset/liability profile. This involves modeling cash flow maturity profiles based on both historical experiences and contractual expectations to project our liquidity requirements. We seek to preserve prudent liquidity and funding capabilities.

We are not aware of significant demands to change our level of liquidity needed to support our normal business activities. We make use of various borrowing facilities provided by several financial institutions. We also successfully issued various bonds in 2010 and 2012. In addition, we raised funds through our commercial paper programs. We have no commitments from repurchase or securities lending transactions at the end of 2013.

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An overview of the movements in our current financial debt and related interest rates is set forth below:

	December 31 $ m	Average interest rate at year end %	Average balance during the year $ m	Average interest rate during the year %	Maximum balance during the year $ m
2013					
Interest-bearing accounts of associates	1,718	0.96	1,658	1.00	1,718
Other bank and financial debt	1,323	4.27	1,485	3.77	1,940
Commercial paper	1,042	0.24	1,935	0.13	3,867
Current portion of non-current financial debt	2,590	na	3,319	na	4,007
Fair value of derivative financial instruments	103	na	118	na	259
Total current financial debt	**6,776**		**8,515**		**11,791**
2012					
Interest-bearing accounts of associates	1,541	1.03	1,490	1.06	1,554
Other bank and financial debt	1,270	3.99	1,662	3.05	2,049
Commercial paper	963	0.66	3,738	0.17	6,287
Current portion of non-current financial debt	2,009	na	1,597	na	2,009
Fair value of derivative financial instruments	162	na	102	na	219
Total current financial debt	**5,945**		**8,589**		**12,118**

na = not applicable or available

Interest bearing accounts of associates relate to employee deposits in CHF from the compensation of associates employed by Swiss entities (actual interest rate: 1%). Other bank and financial debt refer to usual lending and overdraft facilities.

5.C Research & Development, Patents and Licenses

Our R&D spending totaled $9.9 billion, $9.3 billion and $9.6 billion ($9.7 billion, $9.1 billion and $9.2 billion excluding impairments and amortization charges) for the years 2013, 2012 and 2011, respectively. Each of our divisions has its own R&D and patents policies. Our divisions have numerous products in various stages of development. For further information on these policies and these products in development, see "Item 4. Information on the Company 4.B Business Overview."

As described in the "Risk Factors" section and elsewhere in this Form 20-F, our drug development efforts are subject to the risks and uncertainties inherent in any new drug development program. Due to the risks and uncertainties involved in progressing through pre-clinical development and clinical trials, and the time and cost involved in obtaining regulatory approvals, among other factors, we cannot reasonably

estimate the timing, completion dates, and costs, or range of costs, of our drug development program, or of the development of any particular development compound, see "Item 3. Key Information 3.D Risk Factors." In addition, for a description of the research and development process for the development of new drugs and our other products, and the regulatory process for their approval, see "Item 4. Information on the Company 4.B Business Overview."

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5.D Trend Information

Please see " 5.A Operating Results Factors Affecting Results of Operations" and "Item 4, Information on the Company 4.B Business Overview" for trend information.

5.E Off-Balance Sheet Arrangements

We have no unconsolidated special purpose financing or partnership entities or other off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources, that is material to investors, see also "Item 18. Financial Statements Note 28" and matters described in "Item 5.F Aggregate Contractual Obligations".

5.F Tabular Disclosure of Contractual Obligations

The following table summarizes our contractual obligations and other commercial commitments at December 31, 2013 as well as the effect these obligations and commitments are expected to have on our liquidity and cash flow in future periods:

		Payments due by period			
	Total	Less than 1 year	2-3 years	4-5 years	After 5 years
	$ m	$ m	$ m	$ m	$ m
Non-current financial debt[(1)]	**13,832**	2,590	5,183	18	6,041
Operating leases	**2,882**	336	384	193	1,969
Unfunded pensions and other post-employment benefit plans	**2,067**	113	235	257	1,462
Research & Development					
Unconditional commitments	**350**	131	123	64	32
Potential milestone commitments	**1,881**	326	497	523	535
Purchase commitments					
Property, plant & equipment	**1,021**	751	261	9	
Total contractual cash obligations	**22,033**	**4,247**	**6,683**	**1,064**	**10,039**

(1) including current portion of non-current financial debt of $2,590 million.

We expect to fund the R&D and purchase commitments with internally generated resources.

For other contingencies, see "Item 4. Information on the Company 4.D Property, Plants and Equipment Environmental Matters", "Item 8. Financial Information 8.A Consolidated Statements and Other Financial Information" and "Item 18. Financial Statements Note 20".

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Item 6. Directors, Senior Management and Employees

Item 6.A Directors and Senior Management

Board of Directors

Joerg Reinhardt, Ph.D.
German, age 57

Function at Novartis AG Joerg Reinhardt, Ph.D., has been Chairman of the Board of Directors of Novartis AG since August 2013. He is Chairman of the Chairman's Committee.

Other activities Mr. Reinhardt previously served as chairman of the board of management and the executive committee of Bayer HealthCare. Prior to that, he served as Chief Operating Officer of Novartis from 2008 to 2010, and as Head of the Vaccines and Diagnostics Division of Novartis from 2006 to 2008. He also served as Chairman of the Board of the Genomics Institute of the Novartis Research Foundation in the United States from 2000 to 2010, as a member of the supervisory board of MorphoSys AG in Germany from 2001 to 2004, and as a member of the board of directors of Lonza Group AG in Switzerland from 2012 to 2013. He is currently a member of the Council of the International Federation of Pharmaceutical Manufacturers and Associations (IFPMA).

Professional background Mr. Reinhardt graduated with a Ph.D. in pharmaceutical sciences from Saarland University in Germany. He joined Sandoz Pharma Ltd. in 1982 and held various positions including Head of Development. Following the merger that created Novartis in 1996, Mr. Reinhardt became Head of Preclinical Development and Project Management at Novartis, and assumed the position of Head of Pharmaceutical Development in 1999.

Key knowledge/experience *Leadership, Global and Industry experience* former chairman of global healthcare company; former COO of Novartis and former Chairman of Novartis research institution; former board member of leading biotechnology company; former board member of global supplier for pharmaceutical, healthcare, and life sciences industries; member of global non-profit representing pharmaceutical industry.

Ulrich Lehner, Ph.D.
German, age 67

Function at Novartis AG Ulrich Lehner, Ph.D., has been a member of the Board of Directors since 2002. He qualifies as an independent Non-Executive Director. He serves as Vice Chairman, and is a member of the Chairman's Committee, the Audit and Compliance Committee, the Risk Committee, the Compensation Committee, and the Corporate Governance and Nomination Committee. The Board of Directors has appointed him as Audit Committee Financial Expert.

Other activities Mr. Lehner is a member of the shareholders' committee of Henkel AG & Co. KGaA, chairman of the supervisory board of Deutsche Telekom AG as well as ThyssenKrupp AG and serves as a member of the supervisory boards of E.ON AG and Porsche Automobil Holding SE, all in Germany. He is also a member of the advisory board of Dr. August Oetker KG and Krombacher Brauerei, both in Germany.

Professional background Mr. Lehner graduated in business administration and mechanical engineering from the Darmstadt University of Technology, Germany, in 1975. From 1975 to 1981, he was an auditor with KPMG Deutsche Treuhand-Gesellschaft AG in Duesseldorf. In 1981, he joined Henkel KGaA. After heading the controlling department of Fried. Krupp GmbH in Germany from 1983 to 1986, Mr. Lehner returned to Henkel as finance director. From 1991 to 1994, he headed Henkel Asia-Pacific Ltd. in Hong Kong, and from 1995 to 2000, he served as executive vice president, finance/

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logistics, of Henkel KGaA. From 2000 to 2008, Mr. Lehner served as chairman of the management board of Henkel KGaA.

Key knowledge/experience *Leadership and Global experience* chairman of supervisory board of global telecommunications and technology company; former chairman of management board of global consumer goods company. *Industry experience* member of committees of global companies in the energy, automotive, consumer goods, telecommunications and manufacturing technology areas.

Enrico Vanni, Ph.D.
Swiss, age 62

Function at Novartis AG Enrico Vanni, Ph.D., has been a member of the Board of Directors since 2011. He qualifies as an independent Non-Executive Director. He serves as Vice Chairman, and Chairman of the Compensation Committee. He is also a member of the Chairman's Committee and the Audit and Compliance Committee.

Other activities Since his retirement as director of McKinsey & Company in 2007, Mr. Vanni has been an independent consultant. He is currently a member of several boards of directors, in industries from healthcare to private banking, for nonlisted companies including Eclosion2, Denzler & Partners SA and Banque Privée BCP (Suisse) SA, all based in Switzerland. He is also a board member of Advanced Oncotherapy plc in England and of Lombard Odier SA in Switzerland.

Professional background Mr. Vanni holds an engineering degree in chemistry from the Federal Polytechnic School of Lausanne, Switzerland; a Ph.D. in chemistry from the University of Lausanne; as well as a Master of Business Administration from INSEAD in Fontainebleau, France. He began his career as a research engineer at International Business Machines Corp. in California, United States, and joined McKinsey & Company in Zurich in 1980. He managed the Geneva office for McKinsey from 1988 to 2004, and consulted for companies in the pharmaceutical, consumer and finance sectors. He led McKinsey's European pharmaceutical practice and served as a member of the firm's partner review committee prior to his retirement in 2007. As an independent consultant, Mr. Vanni has continued to support leaders of pharmaceutical and biotechnology companies on core strategic challenges facing the healthcare industry.

Key knowledge/experience *Global Industry experience* senior consultant of global pharmaceutical/biotech and consumer goods companies, and financial institutions. *Science experience* research engineer at technology company and manager of projects in global pharmaceutical R&D. *Leadership experience* office management of global consultant company and leadership of its European pharmaceutical practice.

Dimitri Azar, M.D., MBA
American, age 54

Function at Novartis AG Dimitri Azar, M.D., has been a member of the Board of Directors since February 2012. He qualifies as an independent Non-Executive Director and is a member of the Audit and Compliance Committee.

Other activities Dr. Azar is dean of the College of Medicine and professor of ophthalmology, bioengineering and pharmacology at the University of Illinois at Chicago in the United States, where he formerly was head of the Department of Ophthalmology and Visual Sciences. He sits on the board of trustees of the Chicago Ophthalmological Society and the Association of Research in Vision and Ophthalmology. Dr. Azar is a member of the American Ophthalmological Society and holds committee positions with the American Academy of Ophthalmology.

Professional background Dr. Azar began his career at the American University Medical Center, Beirut, Lebanon, and completed his fellowship and residency training at the Massachusetts Eye and Ear Infirmary at Harvard Medical School in the United States. His research on matrix-metalloproteinases in corneal wound healing and angiogenesis has been funded by the National Institutes of Health since 1993.

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Dr. Azar practiced at the Wilmer Ophthalmologic Institute at The Johns Hopkins Hospital School of Medicine, then returned to the Massachusetts Eye and Ear Infirmary as director of the cornea and external disease. He became professor of ophthalmology with tenure at Harvard Medical School in 2003. Dr. Azar holds an Executive Master of Business Administration from the University of Chicago, Booth School of Business.

Key knowledge/experience *Leadership, Healthcare and Education experience* dean and professor of leading US university medical school. *Biomedical Science experience* federally funded clinician-scientist and research fellowship recipient.

Verena A. Briner, M.D.
Swiss, age 62

Function at Novartis AG Verena A. Briner, M.D., has been a member of the Board of Directors since 2013. She qualifies as an independent Non-Executive Director.

Other activities Dr. Briner is professor of internal medicine at the University of Basel, Switzerland, and chief medical officer and head of the department of medicine at the Lucerne Cantonal Hospital in Switzerland. She is a member of several medical and ethical institutions and commissions, including the board of the Foundation for the Development of Internal Medicine in Europe, the senate of the Swiss Academy of Medical Sciences, and the supervisory group for personalized medicine of the Centre for Technology Assessment TA-SWISS. She also is a member and former president of the Swiss Society of Internal Medicine and a member of the board of trustees of Patientensicherheit Schweiz.

Professional background Dr. Briner graduated with an M.D. from the University of Basel in 1978, and has a specialized degree in internal medicine and nephrology from the Swiss Medical Association. She has received several prestigious scholarships and scientific grants, including the President's Grant of the Society of General Internal Medicine in 2011, and is an honorary fellow of the American College of Physicians, the European Federation of Internal Medicine, the Polish Association of Internal Medicine, and the Swiss Society of General Internal Medicine.

Key knowledge/experience *Leadership and Healthcare experience* chief medical officer and department head at leading Swiss hospital; former president of Swiss medical society; member of various medical and ethical institutions and commissions. *Education experience* professor at leading Swiss university.

William Brody, M.D., Ph.D.
American, age 69

Function at Novartis AG William Brody, M.D., Ph.D., has been a member of the Board of Directors since 2009. He qualifies as an independent Non-Executive Director and is a member of the Compensation Committee.

Other activities Dr. Brody is president of the Salk Institute for Biological Studies, La Jolla, California, United States. He is also a member of the boards of directors of the U.S.-based International Business Machines Corp. and Kool Smiles Inc., and the mutual funds boards of T. Rowe Price. He is a member of numerous professional associations, and also serves on the advisory boards of various government and nonprofit organizations.

Professional background Dr. Brody earned his bachelor's and master's degrees in electrical engineering from the Massachusetts Institute of Technology before completing his M.D. and Ph.D. at Stanford University, all in the United States. Following training in cardiovascular surgery and radiology he held various academic positions, including professor for radiology and electrical engineering at Stanford University, and director of the department of radiology at The Johns Hopkins University. From 1996 to 2009, he was president of The Johns Hopkins University, and since 2009, president of the Salk Institute for

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Biological Studies in the United States. He is a member of the US National Academy of Engineering and the Institute of Medicine.

Key knowledge/experience *Leadership, Biomedical Science, Healthcare and Education experience* president of leading US scientific research institution; former president of leading US university. *Global, Engineering and Technology experience* former board member of global technology company.

Srikant Datar, Ph.D.
American, age 60

Function at Novartis AG Srikant Datar, Ph.D., has been a member of the Board of Directors since 2003. He qualifies as an independent Non-Executive Director. He is Chairman of the Audit and Compliance Committee, and a member of the Chairman's Committee, the Risk Committee and the Compensation Committee. The Board of Directors has appointed him as Audit Committee Financial Expert.

Other activities Mr. Datar is Arthur Lowes Dickinson Professor at the Graduate School of Business Administration at Harvard University. He is also a member of the boards of directors of ICF International Inc., Stryker Corp. and T-Mobile US, all in the United States, and of HCL Technologies in India.

Professional background Mr. Datar graduated with distinction in mathematics and economics from the University of Bombay, India, in 1973. He is a Chartered Accountant, and holds two master's degrees and a doctorate from Stanford University. Mr. Datar has worked as an accountant and planner in industry, and as a professor at Carnegie Mellon University, Stanford University and Harvard University, all in the United States. His research interests are in the areas of cost management, measurement of productivity, new product development, time-based competition, incentives, and performance evaluation. He is the author of many scientific publications and has received several academic awards and honors. Mr. Datar has advised and worked with numerous companies in research, development and training.

Key knowledge/experience *Leadership and Education experience* former senior associate dean and current professor of leading US university. *Global and Industry experience* board member of global professional services firm, leading global medical technology company, major US telecommunications company and global information technology company.

Ann Fudge
American, age 62

Function at Novartis AG Ann Fudge has been a member of the Board of Directors since 2008. She qualifies as an independent Non-Executive Director. She is a member of the Risk Committee, the Compensation Committee, and the Corporate Governance and Nomination Committee.

Other activities Ms. Fudge serves on the boards of directors of General Electric Co. in the United States; Unilever NV, London and Rotterdam, Netherlands; and Infosys Ltd., India. She is a trustee of the New York-based Rockefeller Foundation, and is chairman of the US Programs Advisory Panel of the Bill & Melinda Gates Foundation. Ms. Fudge is further a member of the Harvard University Corporation Committee on Finance. She is also on the board of the Council on Foreign Relations.

Professional background Ms. Fudge received her bachelor's degree from Simmons College and her Masters of Business Administration from Harvard University Graduate School of Business in the United States. She is former chairman and CEO of Young & Rubicam Brands, New York. Before that, she served as president of the Beverages, Desserts and Post Division of Kraft Foods Inc., Northfield, Illinois.

Key knowledge/experience *Leadership and Marketing experience* former chairman and CEO of global marketing communications company; former president of leading consumer products business unit.

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Global and Industry experience board member of global technology company and global consumer goods company.

Pierre Landolt, Ph.D.
Swiss, age 66

Function at Novartis AG Pierre Landolt, Ph.D., has been a member of the Board of Directors since 1996. He qualifies as an independent Non-Executive Director. He is Chairman of the Corporate Governance and Nomination Committee.

Other activities Mr. Landolt is currently chairman of the Sandoz Family Foundation and oversees the development of the foundation in several investment fields. He is also chairman of the Swiss private bank Landolt & Cie SA. In Switzerland, he is chairman of Emasan AG and Vaucher Manufacture Fleurier SA, and vice chairman of Parmigiani Fleurier SA. He is a member of the board of EcoCarbone SAS, France, and Amazentis SA, Switzerland. He is also vice chairman of the Montreux Jazz Festival Foundation. In Brazil, Mr. Landolt serves as president of AxialPar Ltda. and Moco Agropecuaria Ltda., the Instituto Fazenda Tamanduá and the Instituto Estrela de Fomento ao Microcrédito.

Professional background Mr. Landolt graduated with a bachelor's degree in law from the University of Paris Assas. From 1974 to 1976 he worked for Sandoz Brazil. In 1977 he acquired an agricultural estate in the semi-arid Northeast Region of Brazil, and over several years converted it into a model farm in organic and biodynamic production. Since 1997 Mr. Landolt has been associate and chairman of AxialPar Ltda., Brazil, an investment company focused on sustainable development. In 2000 he co-founded EcoCarbone SAS, a company active in the design and development of carbon-sequestration processes. In 2007 he cofounded Amazentis SA, a startup company active in the convergence space of medication and nutrition. In 2011 Mr. Landolt received the title of Docteur ès Sciences Économiques Honoris Causa from the University of Lausanne in Switzerland.

Key knowledge/experience *Banking and Industry experience; International and Emerging Market experience* chairman of private bank; chairman and vice chairman of luxury goods companies. *Leadership and Global experience* chairman of large family investment holding.

Andreas von Planta, Ph.D.
Swiss, age 58

Function at Novartis AG Andreas von Planta, Ph.D., has been a member of the Board of Directors since 2006. He qualifies as an independent Non-Executive Director. He is Chairman of the Risk Committee, and is a member of the Audit and Compliance Committee as well as the Corporate Governance and Nomination Committee.

Other activities Mr. von Planta is chairman of the Schweizerische National-Versicherungs-Gesellschaft AG and a board member of Holcim Ltd., both in Switzerland. He is also a board member of various Swiss subsidiaries of foreign companies and other nonlisted Swiss companies. He is a member of the Board of Editors of the "Swiss Review of Business Law" and is a former chairman of the Geneva Association of Business Law. Mr. von Planta is chairman of the regulatory board of the SIX Swiss Exchange AG.

Professional background Mr. von Planta holds lic. iur. and Ph.D. degrees from the University of Basel, Switzerland, and an LL.M. from Columbia University School of Law, New York, United States. He passed his bar examinations in Basel in 1982. Since 1983 he has lived in Geneva and worked for the law firm Lenz & Staehelin, where he became a partner in 1988. His areas of specialization include corporate law, corporate governance, corporate finance, company reorganizations, and mergers and acquisitions.

Key knowledge/experience *Leadership and Global experience* chairman of insurance company; board member of global construction materials manufacturer. *Industry experience* partner of leading Swiss law firm.

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Charles L. Sawyers, M.D.
American, age 54

Function at Novartis AG Charles L. Sawyers, M.D., has been a member of the Board of Directors since 2013. He qualifies as an independent Non-Executive Director.

Other activities In the United States, Dr. Sawyers is chair of the Human Oncology and Pathogenesis Program at Memorial Sloan-Kettering Cancer Center, professor of medicine and of cell and developmental biology at the Weill Cornell Graduate School of Medical Sciences, and an investigator at the Howard Hughes Medical Institute. He serves on US President Barack Obama's National Cancer Advisory Board and is president of the American Association of Cancer Research and former president of the American Society for Clinical Investigation. He also is a member of the US National Academy of Sciences and Institute of Medicine.

Professional background Dr. Sawyers received his M.D. from the Johns Hopkins School of Medicine in the United States, and worked at the Jonsson Comprehensive Cancer Center at the University of California, Los Angeles for nearly 18 years before joining Memorial Sloan-Kettering in 2006. An internationally acclaimed cancer researcher, he co-developed the Novartis cancer drug *Gleevec/Glivec*, and has received numerous honors and awards, including the Lasker-DeBakey Clinical Medical Research Award in 2009. Dr. Sawyers is a member of the Scientific Advisory Board of Agios Pharmaceuticals, Inc., Cambridge, MA/USA.

Key knowledge/experience *Leadership, Healthcare and Science experience* program chair at leading cancer treatment and research institution; member of US cancer advisory board; president of scientific organization; former president of medical honor society. *Education experience* professor at leading US university.

Dr. Ing. Wendelin Wiedeking
German, age 61

Function at Novartis AG Dr. Ing. Wendelin Wiedeking has been a member of the Board of Directors since 2003. He qualifies as an independent Non-Executive Director. He is a member of the Risk Committee and the Corporate Governance and Nomination Committee.

Other activities Mr. Wiedeking was chairman of the executive board of Porsche Automobil Holding SE and of Dr. Ing. h.c. F. Porsche AG, both in Germany, until July 2009. Since then he has been an entrepreneur.

Professional background Mr. Wiedeking graduated in 1978 with a degree in mechanical engineering from the Rhine-Westphalian College of Advanced Technology in Germany, where he also worked as a scientific assistant in the machine tool laboratory. His professional career began in 1983 in Germany as director's assistant in the production and materials management area of Dr. Ing. h.c. F. Porsche AG in Stuttgart-Zuffenhausen. In 1988, he moved to Glyco Metall-Werke KG in Wiesbaden as division manager, where he advanced by 1990 to the position of CEO and chairman of the board of management of Glyco AG. In 1991, he returned to Dr. Ing. h.c. F. Porsche AG as member of the executive board for production. A year later, the supervisory board appointed him spokesman of the executive board (CEO), then chairman in 1993.

Key knowledge/experience *Leadership, Global and Industry experience* former chairman and CEO of global automotive company. *Engineering and Technology experience* former chairman and CEO of manufacturing supply company.

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William T. Winters
British/American, age 52

Function at Novartis AG William T. Winters has been a member of the Board of Directors since 2013. He qualifies as an independent Non-Executive Director.

Other activities Mr. Winters is chairman and CEO of Renshaw Bay, an alternative asset management and advisory company based in London. He is a former member of the UK Independent Commission on Banking, and served as co-CEO of JPMorgan's investment banking business from 2003 to 2010.

Professional background Mr. Winters received his bachelor's degree from Colgate University and his Masters of Business Administration from the Wharton School at the University of Pennsylvania. He joined JPMorgan in 1983 and held management roles across several market areas and in corporate finance. Mr. Winters serves on the boards of Colgate University and the International Rescue Committee, both in the United States, and of Pension Insurance Corporation, the Young Vic Theatre and The Print Room, all in London. He was awarded the title of Commander of the Order of the British Empire (CBE) in 2013.

Key knowledge/experience *Leadership and Global experience* chairman and CEO of alternative asset management and advisory company; former co-CEO of investment banking at global financial services firm. *Education experience* board member of leading US university.

Rolf M. Zinkernagel, M.D.
Swiss, age 69

Function at Novartis AG Rolf M. Zinkernagel, M.D., has been a member of the Board of Directors since 1999. He qualifies as an independent Non-Executive Director. He is a member of the Corporate Governance and Nomination Committee.

Other activities Dr. Zinkernagel was vice president of the International Union of Immunological Societies until 2010. He is a member of the scientific advisory boards of Bio-Alliance AG, Germany; Aravis General Partner Ltd., Cayman Islands and Switzerland; Telormedix, Switzerland; X-Biotech, Canada; Novimmune, Switzerland; Cancevir, Switzerland; MannKind, United States; and the Biomedical Sciences International Advisory Council, Singapore. Dr. Zinkernagel is also a science consultant to Chilka Ltd., Cayman Islands and Ganymed, Germany.

Professional background Dr. Zinkernagel graduated from the University of Basel, Switzerland, with an M.D. in 1970. From 1992 to 2008, he was a professor and director of the Institute of Experimental Immunology at the University of Zurich, and after retirement in 2008 continues to be active at the University of Zurich. Dr. Zinkernagel has received many awards and prizes for his work and contribution to science, notably the Nobel Prize in medicine, which he was awarded in 1996.

Key knowledge/experience *Biomedical Science and Education* experience former professor and director at leading Swiss university. *Leadership and Global experience* member of scientific advisory boards of numerous global biotech companies; member of major international research councils.

Executive Committee

Joseph Jimenez
American, age 54

Joseph Jimenez has been Chief Executive Officer (CEO) of Novartis since 2010. Mr. Jimenez is responsible for leading the company's diversified healthcare portfolio of leading businesses in innovative pharmaceuticals, eye care, generics, vaccines and diagnostics, OTC and animal health. Previously Mr. Jimenez served as Division Head, Novartis Pharmaceuticals. He led the transformation of the pharmaceutical portfolio to balance mass market and specialty products, and significantly increased the

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percentage of sales from newly launched products. Mr. Jimenez also worked to realign the division's commercial approach to focus on the individual needs of customers, and incorporated more technological tools to better connect with patients and customers. Mr. Jimenez joined Novartis in April 2007 as Division Head, Novartis Consumer Health. Previously, he served as president and CEO of the North America business for the H.J. Heinz Co. and as president and CEO of Heinz in Europe from 2002 to 2006. Prior to joining Novartis, he was a nonexecutive director of AstraZeneca PLC, United Kingdom, from 2002 to 2007. He was also an adviser for the private equity organization Blackstone Group in the United States. Mr. Jimenez is a member of the board of directors of Colgate-Palmolive Co., New York. He graduated in 1982 with a bachelor's degree from Stanford University and in 1984 with a Master of Business Administration from the University of California, Berkeley, both in the United States.

Juergen Brokatzky-Geiger, Ph.D.
German, age 61

Juergen Brokatzky-Geiger, Ph.D., has been Head of Human Resources of Novartis since 2003. He is a member of the Executive Committee of Novartis. Mr. Brokatzky-Geiger joined Ciba-Geigy Ltd. in 1983 as a Ph.D. chemist in the Pharmaceuticals Division in Switzerland. After a job rotation in the United States, he held positions of increasing responsibility in Research and Development (R&D), including Group Leader of Process R&D, Head of Process R&D, and Head of Process Development and Pilot Plant Operations. During the merger of Ciba-Geigy and Sandoz in 1996, Mr. Brokatzky-Geiger was appointed Integration Officer of Technical Operations. He later became the Head of Chemical and Analytical Development, and served as the Global Head of Technical R&D from 1999 to 2003. Mr. Brokatzky-Geiger is a member of the board of Bachem AG in Switzerland. He graduated with a Ph.D. in chemistry from the University of Freiburg, Germany, in 1982.

Kevin Buehler
American, age 56

Kevin Buehler has been Division Head, Alcon, since April 2011. He is a member of the Executive Committee of Novartis. Mr. Buehler was president and chief executive officer of Alcon Inc. from 2009 to 2011. He began his career with Alcon in 1984 as a regional sales manager in the Consumer Products Division, and held positions of increasing responsibility before being named director of sales and marketing. In 1996, he became director of Alcon's US Managed Care and Falcon Generic Pharmaceutical groups, and became vice president in 1998. The following year he returned to the US Consumer Products Division as vice president and general manager. Mr. Buehler moved to the International Division in 2002 as vice president and regional manager, Latin America and Caribbean. He was later named area vice president, Latin America, Canada, Australia and Far East. Mr. Buehler also served as senior vice president, global markets and as chief marketing officer. Prior to joining Alcon, he worked for The Gillette Co. and Snyder Drug Stores, both in the United States. Mr. Buehler holds a bachelor's degree from Carroll University in Waukesha, Wisconsin, in the United States, with concentrations in business administration and political science. He completed the Harvard Program for Management Development in 1993.

Felix R. Ehrat, Ph.D.
Swiss, age 56

Felix R. Ehrat, Ph.D., has been Group General Counsel since October 2011. He is a member of the Executive Committee of Novartis. Mr. Ehrat is a leading practitioner of corporate, banking, and mergers and acquisitions law, as well as an expert in corporate governance and arbitration. He started his career as an associate with Baer & Karrer Ltd. in Zurich in 1987, became partner in 1992, and advanced to senior partner (2003 to 2011) and executive chairman of the board (2007 to 2011) of the firm. Mr. Ehrat is chairman of Globalance Bank AG in Switzerland and a board member of Geberit AG, economiesuisse (Swiss Business Federation) and organizations in the cultural field. Previously, he was, among other

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things, chairman of Banca del Gottardo and a board member of Julius Baer Holding AG, Austriamicrosystems AG, Charles Voegele Holding AG and Carlo Gavazzi Holding AG. Mr. Ehrat was admitted to the Zurich bar in 1985 and received his doctorate of law from the University of Zurich in 1990. In 1986, he completed an LL.M. at McGeorge School of Law in the United States. Some of his past memberships include the International Bar Association, where he was co-chair of the Committee on Corporate and M&A Law from 2007 to 2008, and Association Internationale des Jeunes Avocats, where he was president from 1998 to 1999. Current memberships include the Swiss Bar Association, the Zurich Bar Association and the Swiss Arbitration Association.

David Epstein
American, age 52

David Epstein has been Division Head, Novartis Pharmaceuticals, since 2010. He is a member of the Executive Committee of Novartis. Prior to his current appointment, Mr. Epstein served as Head of Novartis Oncology for nearly 10 years. Before joining Novartis, Mr. Epstein was an associate in the strategy practice of the consulting firm Booz Allen Hamilton Inc. in the United States. He joined Sandoz, a predecessor company of Novartis, in 1989 and held various leadership positions of increasing responsibility for the Company, including Chief Operating Officer of Novartis Pharmaceuticals Corporation in the United States and Head of Novartis Specialty Medicines. Mr. Epstein graduated with a bachelor's degree in pharmacy from The Ernest Mario School of Pharmacy at Rutgers, The State University of New Jersey, in 1984, and with a Master of Business Administration in finance and marketing from New York's Columbia University Graduate School of Business in 1987.

Mark C. Fishman, M.D.
American, age 62

Mark C. Fishman, M.D., has been President of the Novartis Institutes for BioMedical Research (NIBR) since 2002. He is a member of the Executive Committee of Novartis. Before joining Novartis in 2002, Dr. Fishman was chief of cardiology and director of the Cardiovascular Research Center at Massachusetts General Hospital, and was professor of medicine at Harvard Medical School, both in the United States. Dr. Fishman completed his internal medicine residency, chief residency and cardiology training at Massachusetts General Hospital. Dr. Fishman graduated with a bachelor's degree from Yale College in 1972 and an M.D. from Harvard Medical School in 1976. He has been honored with many awards and distinguished lectureships and serves on the council of the Institute of Medicine of the National Academies in the United States. Additionally, he is a fellow of the American Academy of Arts and Sciences, also in the United States.

Jeff George
American, age 40

Jeff George has been Division Head, Sandoz, since 2008. He is a member of the Executive Committee of Novartis. Mr. George joined the Novartis Vaccines and Diagnostics Division in 2007 as Head of Commercial Operations for Western and Eastern Europe. He then advanced to Head of Emerging Markets for the Middle East, Africa, Southeast Asia and CIS at Novartis Pharmaceuticals. Before joining Novartis, Mr. George was a senior director of strategy and business development at Gap Inc., San Francisco, United States. From 2001 to 2004, he was an engagement manager with McKinsey & Company, also in San Francisco. Mr. George received a Master of Business Administration from Harvard University in 2001. He graduated in 1999 with a master's degree from The Johns Hopkins University's School of Advanced International Studies, where he studied international economics and emerging markets political economy. In 1996, he received his bachelor's degree in international relations from Carleton College in Northfield, Minnesota, in the United States.

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George Gunn, MRCVS
British, age 63

George Gunn has been Division Head, Novartis Animal Health, and Head, Corporate Responsibility, since March 2011. He is a member of the Executive Committee of Novartis. Before joining Novartis, Mr. Gunn was president of Pharmacia Animal Health, based in the United States. Previously, he spent more than 15 years in positions of increasing responsibility in healthcare companies. He worked as a veterinary surgeon for nine years before entering the industry. Mr. Gunn joined Novartis in 2003 as Head of Novartis Animal Health, North America. In January 2004, he assumed his position as Head of the Animal Health Business Unit. In addition to this role, he was Division Head, Novartis Consumer Health, from 2008 to 2011. Mr. Gunn graduated with a bachelor of veterinary medicine and surgery degree from the Royal (Dick) School of Veterinary Studies in the United Kingdom in 1973. He graduated with a diploma in veterinary state medicine from the same school in 1978. In 2008, he received an honorary doctorate in veterinary medicine and surgery from the University of Edinburgh, Scotland.

Harry Kirsch
German, age 48

Harry Kirsch has been Chief Financial Officer (CFO) of Novartis and a permanent attendee of the Executive Committee of Novartis since May 1, 2013. As of January 1, 2014, he is a member of the Executive Committee of Novartis. Mr. Kirsch joined Novartis in 2003 and, prior to his current position, served as CFO of the Company's Pharmaceuticals Division. Under his leadership, the division's core operating income margin increased, in constant currencies, every quarter of 2011 and 2012 despite patent expirations. At Novartis, he also served as CFO of Pharma Europe, and as Head of Business Planning & Analysis and Financial Operations for the Pharmaceuticals Division. Mr. Kirsch joined Novartis from Procter & Gamble (P&G) in the United States, where he was CFO of P&G's global pharmaceuticals business. Prior to that, he held finance positions in different categories of P&G's consumer goods business, technical operations, and Global Business Services organization. Mr. Kirsch studied industrial engineering and economics at the University of Karlsruhe in Germany ("Diplom Wirtschaftsingenieur").

Brian McNamara
American, age 47

Brian McNamara has been Division Head, Novartis OTC, since February 2012. He is a member of the Executive Committee of Novartis. Prior to this role, Mr. McNamara served as President, Americas Region, for Novartis OTC. Since joining Novartis OTC in 2004 as Senior Vice President and General Manager of Novartis OTC North America, he has worked on a number of strategic initiatives. He also served as President of Novartis OTC Europe from 2007 until 2010. Mr. McNamara began his career at Procter & Gamble Co., Cincinnati, United States, where he gained extensive experience in consumer and brand marketing, product supply, and customer leadership. He was previously on the board of directors and executive committee of the Consumer Healthcare Products Association in the United States, and was s a board member of the Association of the European Self-Medication Industry, where he served as chairman of the economic affairs committee. Mr. McNamara received a Master of Business Administration in finance from the University of Cincinnati and a bachelor's degree in electrical engineering from Union College, both in the United States.

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Andrin Oswald, M.D.
Swiss, age 42

Andrin Oswald, M.D., has been Division Head, Novartis Vaccines and Diagnostics, since 2008. He is a member of the Executive Committee of Novartis. In September 2013, Dr. Oswald also became Chairman of the Board of the Novartis Foundation for Sustainable Development. Previously, Dr. Oswald was CEO of Speedel Holding AG and Global Head of Pharmaceutical Development Franchises in the Novartis Pharmaceuticals Division, both in Switzerland. Dr. Oswald joined Novartis in 2005 as Assistant to the Chairman and CEO. Before his appointment as Head of Development Franchises, he served as Head of the Country Pharmaceuticals Organization (CPO) and Country President for Novartis in South Korea. Dr. Oswald joined Novartis from McKinsey & Company, Switzerland, where he was an associate principal. He is a board member of the Global Health Investment Corporation (GHIC), an Investment Committee member of the Global Health Investment Fund (GHIF), and a member of the Global Agenda Council on Catastrophic Risks of the World Economic Forum. Between 2002 and 2003, he also served as a delegate of the International Committee of the Red Cross (ICRC) to Nepal. Dr. Oswald holds a doctorate in medicine from the University of Geneva.

Item 6.B Compensation

Novartis aspires to be an employer of choice and to attract and retain best-in-class talent around the world.

Our compensation plans are designed to support our position as a preeminent global healthcare company. They provide competitive compensation and benefits for world-class talent in a competitive market. They are aligned with our business performance objectives, which are key to our sustained success while being transparent, coherent and consistent with our pay-for-performance philosophy. Our compensation system aims to align with shareholders' interests and encourage innovation and entrepreneurship, while at the same time, deter excessive risk-taking at the expense of the long-term condition of the Group.

The Compensation Report describes our compensation system and philosophy, and provides details on how compensation related to 2013 performance.

DEAR SHAREHOLDER

It is with pleasure that I, as Chair of the Compensation Committee of the Board of Directors, introduce you to the 2013 Compensation Report of Novartis AG.

In 2013, this Committee welcomed Ann Fudge as a new member and has undertaken significant work to:

improve disclosure in our 2013 Compensation Report;

finalize the design of our new executive compensation system; and

conduct a review of our Board compensation system.

During our extensive discussions with shareholders and proxy advisors in 2013, we learned that you would like a better understanding of how our executive incentive plans function, including their link to business strategy and alignment with shareholders' interests. We also learned that you would like more detail regarding how performance against Group targets translated into the incentive amounts earned by our CEO.

In response, we have substantially expanded disclosure in our report regarding how our incentive plans work, including achievements against the 2013 financial targets underpinning our incentive plans. We have also shown how the incentive payouts of our CEO have been earned.

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Overall, 2013 was a strong year for Novartis and for our shareholders. We performed above expectations, growing sales in all divisions. The Group met its guidance which was raised twice during the year and exceeded its financial targets, including exceeding specific targets in innovation. We also continued to improve in quality, compliance and customer satisfaction, and shareholders benefited with a significant increase in share price, as well as an increased dividend.

In 2013, the Committee concluded the strategic review of the Company's entire approach toward executive compensation that began in 2012. As shown by the positive outcome of the shareholder say-on-pay vote at the 2013 AGM, the Committee believes that shareholders welcome the overall design of the new executive compensation program for the members of the Executive Committee of Novartis (ECN), which will become effective in 2014.

The most important changes in the new compensation system are that we:

- aligned the performance measures underpinning our incentive plans directly to our business strategy (Innovation, Growth and Productivity), therefore ensuring that we drive the right priorities in our leadership team;
- simplified the program by eliminating share options, matching grants, and discretionary awards;
- reformatted the Annual Incentive into one integrated balanced scorecard that considers performance holistically against:
  - Group and divisional financial and innovation targets
  - individual financial and operational objectives
  - our values and behavior standards;
- removed our three-year time-vesting long-term incentive plan "Select" and implemented a three-year performance-vesting for both of our long-term incentive plans; and
- split the new total long-term incentive into two separate plans, which are each subject to a three-year performance period: one based on our Novartis Cash Value Added (NCVA, see definition in the section "Financial measure (Group Novartis Cash Value Added)" performance and results in innovation; the other based on our Total Shareholder Return measured against 12 other companies that form our healthcare peer group.

The new executive compensation program has the full support of our Board. We believe it will provide a competitive advantage to Novartis in the marketplace for executive talent, is aligned with shareholders' interests and will support our aspiration to be the world's most respected and successful healthcare company.

During 2013, the Compensation Committee, together with its independent advisor, also undertook a detailed review of Board compensation and has approved a revised policy, which is outlined in section "Board compensation 2014". It reflects some of our recent governance changes, including the removal of the Chairman's Committee. It aims to better align our Board compensation to the current levels of our international healthcare peer group, and other Swiss industrial companies; the latter being relevant due to the extensive responsibilities that a Swiss board has, including but not limited to setting strategy, ensuring its implementation, making organizational decisions, carrying responsibility for financial performance and integrity, and overseeing senior management.

The new Swiss law regarding Say-on-Pay (the Minder Ordinance) was released on November 20, 2013 and entered into force on January 1, 2014. This will lead to the individual election by the shareholders of the Chairman, the members of the Board and of the Compensation Committee for a term of one year at the 2014 AGM. Other key changes, such as the amendment of the Articles of Association, will have to be implemented in 2015. In the meantime, at the 2014 AGM, we are requesting your endorsement in an advisory capacity on two compensation-related votes. The first vote is on the aggregate amount of Board

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compensation from the 2014 AGM to the 2015 AGM. The second vote is on the aggregate amount of fixed and variable compensation earned by members of our Executive Committee for the 2013 business year.

On behalf of Novartis and the Compensation Committee, I would like to thank you for your support and your feedback, which I consider extremely valuable in driving improvements in our compensation systems. I invite you to send your comments on our new program to me at the following email address: investor.relations@novartis.com.

Respectfully,

Enrico Vanni, Ph.D.,

Chairman of the Compensation Committee

January 28, 2014

SUMMARY

Company Performance 2013

2013 was a strong year for Novartis, growing sales, operating income and net income (in constant currencies). Novartis met its raised guidance across all parameters especially versus our start-of-year outlook. We performed above expectations as a result of strong growth product momentum and growing sales in all divisions, even when excluding the lower than expected impact of generic competition.

Overall, growth products performance offset the impact of sales lost to generics of $2.2 billion (mainly due to *Diovan* and *Zometa/Aclasta*). Novartis achieved the significant number of eleven blockbusters (products with sales above $1 billion), ten of which were in the Pharmaceuticals division and one with sales across Pharmaceuticals, Consumer Health and Sandoz. Productivity gains allowed for continued investments behind growth products. Currency had a negative impact (-2% on net sales, -8% on operating income) due to a weak yen and weak emerging market currencies against the US dollar. The table below outlines results versus prior year in constant currencies as well as in US dollars:

	Growth in constant currencies versus prior year	Growth in $ versus prior year
Net sales	+4%	+2%
Operating income	+5%	-3%
Net income	+7%	-1%
EPS	+6%	-2%

Free cash flow of $9.9 billion was 13% below the prior year. Aside from the significant currency impact, major reasons for the decline were increased accounts receivables and higher capital investments in manufacturing and research facilities.

In addition, we performed well on our three strategic priorities:

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Innovation

In 2013, we secured 18 approvals[1]. Our Pharmaceuticals division alone achieved 13 approvals, including *Ultibro Breezhaler* in Europe, and *TOBI Podhaler* in the US. We also secured key approvals in Alcon (including *Jetrea* for vitreo-macular traction in Europe), and in Vaccines and Diagnostics (including *Bexsero* for meningococcal disease B in Europe).

Our Pharmaceuticals division filed successfully for AIN457 in psoriasis and omalizumab in chronic spontaneous urticaria.

We achieved three FDA breakthrough therapy designations in 2013, placing us at the top of our industry for designations for distinct new molecular entities.

Growth

Net sales grew 4% in constant currency. Excluding the impact of patent expiries, underlying sales grew 8% in constant currencies with underlying core operating income up 15% in constant currency.

Growth products grew 15% in US dollars, contributing 31% of total Group net sales (up from 28% in 2012).

Sales in emerging markets grew 10% in constant currencies.

Productivity

We achieved $2.8 billion in productivity cost savings, which exceeded our start of year projections.

We continued to drive our manufacturing footprint program to increase capacity utilization and reduce cost. So far, we have divested or closed 20 manufacturing sites.[2]

Further, we drove cross-divisional procurement savings, outsourcing and offshoring, reduced infrastructure cost in research and optimized our returns via proactive and decisive resource allocation. We also made productivity gains through global business service hubs.

In 2013, we continued to improve in quality, compliance and customer satisfaction. We are also proud to have been recognized as one of the 25 best multinational employers by Great Place to Work® Institute, and we ranked top pharmaceutical company in Fortune's World's Most Admired Companies for the third year in a row.

Finally, our shareholders benefited from a share price increase of 24% (from CHF 57.45 at December 31, 2012 to CHF 71.20 at December 31, 2013) and the dividend of CHF 2.30 per share paid in the year, resulting in a Total Shareholder Return of 28% for the year (in Swiss francs, 32% in US dollars).

Details regarding 2013 performance against Group targets can be found in section "Executive compensation 2013, Annual incentive".

CEO 2013 Compensation

As outlined above, overall the Company exceeded start-of-year expectations, and the Board recognized that the CEO met or exceeded most of his individual objectives, including his financial targets that were set in constant currencies. However, given that we saw a decline, compared to the prior year, in reported operating income and free cash flow, the Compensation Committee and the CEO determined

[1] Major approvals across Pharmaceuticals, Alcon and Vaccines and Diagnostics Divisions in the EU and US

[2] Includes Pharmaceuticals manufacturing site in Suffern, NY (USA) as announced in January 2014

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together, that he would waive a portion of his variable compensation for the performance year 2013. The Board of Directors supported this decision.

This resulted in our CEO earning a total compensation (salary and variable compensation including benefits) of CHF 13.2 million for the year 2013, which is at the same level to the compensation he received for the prior year (2012), as detailed in the table below.

CEO COMPENSATION 2013 VERSUS 2012 (CHF EQUIVALENT VALUE)

		2013 Total Compensation (CHF '000)	2012 Total Compensation (CHF '000)
Fixed compensation and benefits			
Annual Base Compensation		2,055	2,025
Pension Benefits		176	161
Other Benefits		94	129
Variable compensation			
Annual Incentive		1,061	1,370
Leveraged Share Savings Plan	Nominal value of potential future share match (5-year time-vesting)	0	0
Equity Plan Select	Nominal value at grant, time-vesting over 3 years	3,714	4,796
Long-Term Performance Plan	Value at vesting date	6,126	4,747
Total Compensation		**13,226**	**13,228**

In authorizing this pay, we are mindful of our responsibility to the Company and to you, its owners, to provide pay opportunities that are competitive in the marketplace for all our key associates, including our CEO, and then to make sure that realized pay relates to our performance and the individual contributions of each ECN member to that performance.

EXECUTIVE COMPENSATION PHILOSOPHY & PRINCIPLES

Novartis Compensation Philosophy

Our compensation philosophy aims to ensure that executives are rewarded according to their success in implementing the Company strategy and their contribution to Company performance. Our key strategic priorities of innovation, growth and productivity form the basis of the performance measures established for both the annual and long-term incentives.

Our compensation system aims to foster personal accountability based on clear individual and business objectives, and also underlines the importance of competence and integrity as drivers of sustainable business success.

A significant portion of total compensation varies with performance, with an emphasis on long-term equity-based compensation to further align the interests of executives with those of our shareholders.

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Our compensation systems are designed to meet the following 5 key compensation principles:

Pay for performance

Variable compensation is tied directly to the achievement of strategic Company goals, as measured by specific, pre-determined, short-term and long-term business performance targets. Ambitious targets are set to drive sustained superior Company performance.

Business ethics

All associates are expected to achieve their business results through ethical practices, reflected in our Code of Conduct. The Novartis Values and Behaviors are an integral part of our performance measures.

Balanced rewards to create sustainable value

Compensation programs are designed to strike a balance between incentivizing talented associates while delivering sustainable returns to our shareholders. Incentive programs consider the long-term life cycle that characterizes our industry, in particular, the innovation and development challenges.

Alignment with shareholders

We ensure that the interests of leaders are fully aligned with those of our shareholders. Minimum ownership guidelines are in place for all key senior executives of the Group, and compensation outcomes are tied directly to the performance of Novartis shares.

Competitive compensation

Compensation at competitive levels is essential to attract, retain and motivate talented and diverse associates. Our compensation structure and target levels are comparable to relevant benchmarks at peer companies.

Executive Compensation Benchmarking

To attract and retain key talent, it is important for us to offer competitive compensation levels on a global basis. In line with our compensation philosophy, associates achieving their objectives are generally awarded target compensation at a level comparable to the median level of the relevant benchmarks. In the event of under- or over-performance, the actual compensation may be lower or higher than the benchmark median. In the event of exceptional and sustained performance, actual compensation may be awarded at the top quartile of the relevant benchmark in order to encourage and reward superior performance.

The Compensation Committee reviews the compensation of the CEO and of the members of the Executive Committee annually and compares these to the relevant compensation level of similar positions at peer companies. For this purpose, we use benchmark data from well-known market data providers and other relevant data sources. In particular, we review the mix of short-term and long-term incentives, the mix of cash and share-based compensation, and the level of deferred compensation as well as current compensation policies. Further, the data analysis conducted by the market data providers takes into account factors such as recent market trends and best practices in compensation. The Compensation Committee's independent advisor reviews and evaluates the data received, and provides independent research and advice for the CEO's target compensation, which comes to the Compensation Committee without the advance knowledge or consent of the CEO.

For the CEO and the members of the Executive Committee, the comparator companies consist of competitors in the healthcare industry which are operating on a global basis and have the same or similar business model, business size, international competition, and need for talent and skills.

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Benchmark criteria (in $ billion)	Novartis[1]	Benchmark Peers Median[2]
Net sales/Revenue	57.9	40.9
Market capitalization	194.2	108.3
Operating income[3]	10.9	8.2
Net income	9.3	6.2
Total assets	126.3	63.0

(1) As of December 31, 2013

(2) As at last reported quarter end except for market capitalization, which is as of December 31, 2013.

(3) Operating income for Novartis, earnings before interest and tax for peer companies

Source: ThomsonFinancial, trailing four quarters

EXECUTIVE PERFORMANCE MANAGEMENT PROCESS

To foster a high-performance culture, we apply a uniform People Performance Management Process worldwide, based on quantitative and qualitative criteria, including Novartis Values and Behaviors. Novartis associates, including the CEO and the members of the Executive Committee, are subject to a three-tier formal process.

Objective Setting

Objective setting for the CEO

At the beginning of each performance year, the Chairman meets with the CEO to discuss his objectives for the coming year following a balanced scorecard approach. The Board of Directors reviews and approves these objectives and ensures that they are in line with our goals of fostering sustainable performance, balancing short- and long-term goals, and not rewarding inappropriate or excessive risk taking at the expense of the long-term condition of the Group.

Details of the individual objectives for the CEO for 2013 are in section "Executive compensation 2013, Annual incentive". Details of the long-term performance targets under LTPP are in section "Executive Compensation 2013, Long-Term Performance Plan".

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Objective Setting for the Members of the Executive Committee

At the beginning of each performance year, the CEO and the members of the Executive Committee that report to him determine together the business objectives and respective metrics applicable to each of the divisional and global functional leaders. The CEO then presents the business objectives of the members of the Executive Committee to the Board of Directors for approval.

Performance Evaluation

Performance evaluation for the CEO

The Board of Directors periodically assesses the Group business performance and progress of the CEO against his objectives and incentive plan targets. At the mid-year performance review, the performance of the CEO is reviewed by the Chairman. For the year-end review, the CEO prepares and presents to the Chairman, and later to the Board of Directors, the actual results against the previously agreed-upon objectives, taking into account the audited financial results as well as an assessment of the extent to which he is a role model for the Novartis Values and Behaviors. At the year-end review the Board of Directors discusses the performance of the CEO without him being present. It evaluates the extent to which targeted objectives have been achieved and, to the extent possible, compares these results with peer industry companies, taking into account general economic and financial criteria and industry developments. The Board of Directors later shares its assessment with the CEO. This assessment contributes to the rating used for individual performance under the Annual Incentive and Equity Plan "Select".

Process for performance evaluation of the members of the Executive Committee

For the mid-year review, the performance of members of the Executive Committee is reviewed by the CEO and then discussed with the Chairman. For the year-end review, the Board of Directors meets in January with the CEO to review and discuss the performance of the members of the Executive Committee for the previous year, taking into account the financial results, the level of achievement of financial and non-financial objectives, as well as adherence to the Novartis Values and Behaviors and the general economic and business environment. In addition, the Board of Directors periodically assesses the Group and divisional business performance and progress of the members of the Executive Committee against their objectives.

Compensation Determination

Compensation determination for the CEO

Based on the performance evaluation made by the Board of Directors, the Compensation Committee decides at its January meeting on the CEO's total compensation for the prior year and the target compensation for the coming year without the presence of the CEO. In reaching its decision, the Compensation Committee takes into account incentive plan calculated payouts, as well as other relevant information, including available benchmark information and the advice of the Compensation Committee's independent advisor.

Compensation determination for the members of the Executive Committee

In the presence of the CEO and taking into consideration his recommendations, the Compensation Committee decides, in January, on the variable compensation for the prior year and the target compensation of the members of the Executive Committee for the coming year.

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EXECUTIVE COMPENSATION 2013

2013 is the last year in which the current executive compensation system, as described below, is in place. Our 2013 executive compensation system consists of the following components:

Annual Base Compensation

Overview

The level of base compensation reflects each associate's key areas of responsibilities, job characteristics, seniority, experience and skill sets. It is paid in cash, typically monthly, and is set according to local practice, designed to provide our associates with fixed compensation comparable to that offered by our peer companies.

In general, base compensation is reviewed annually, and any increases reflect both merit based on performance, as well as market movements.

2013 CEO Outcome

Following a review of market conditions as well as his performance, the CEO's annual base compensation was increased to CHF 2,060,500, as of March 1, 2013, which represented an increase of 1.5% versus 2012.

Pension and other Benefits

Overview

The primary purpose of pension and insurance plans is to establish a level of security for associates and their dependents with respect to age, health, disability and death. The level of pension and healthcare benefits provided to associates is country-specific, influenced by local market practice and regulations, and regularly reviewed.

Our policy is to change from defined-benefit (DB) pension plans to defined-contribution (DC) pension plans. All the major plans have now been aligned with our benefits strategy as far as reasonably practicable.

We may provide other benefits in a specific country according to local market practice and regulations, including length-of-service awards and perquisites. Associates who have been transferred on an international assignment also receive benefits in line with our policies.

2013 CEO outcome

As for the other ECN members, the pension and the level of benefits provided to our CEO are the same as those provided to other salaried associates in the relevant country of employment. During 2013, the Company contributed CHF 176,071 into the Swiss pension plans, and CHF 93,652 in other benefits.

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Annual Incentive

Overview

The Annual Incentive ensures that over a single financial year, associates focus on their performance against three factors:

1. Group and divisional financial and innovation performance measures;
2. Individual financial and operational objectives, set according to specific roles; and
3. The Novartis Values and Behaviors.

Measures for the Annual Incentive have been selected because they define, in a balanced way, our success in implementing strategy and driving short-term business performance.

We define a target incentive as a percentage of base compensation for each participating associate at the beginning of each performance period traditionally the start of each calendar year. Depending on the role and the level of responsibility of the associates, target incentive percentages may reach up to 60% of base compensation. For members of the Executive Committee, the Annual Incentive represents between 13% and 23% of their total variable compensation at target.

Performance measures

The Annual Incentive formula is outlined below:

The Business Performance Factor is based on the Company's achievement against key business financial and innovation performance measures, which are defined and weighted according to strategic priorities at the Group, divisional, regional or country level. Targets may include net sales, operating income, free cash flow, market presence and milestones in research and development.

The Individual Performance Factor comprises two separate elements. The first element is based on the achievement against individually set financial and non-financial associates' objectives. Depending on functional responsibility, non-financial objectives typically include innovation; product launches; successful implementation of growth and productivity initiatives; process improvements; leadership and people management; and successful acquisitions, disposals and licensing transactions. The second element ensures that the associate's performance is achieved in line with the highest standards in business conduct, as outlined in the Novartis Values and Behaviors. Our leaders are expected to live up to these behaviors on a daily basis, and to inspire other associates to do the same.

The Individual Performance Factor is determined according to a pre-defined matrix based on the associate's evaluated performance against the two elements. The Business Performance Factor and Individual Performance Factor may range from 0 150% and have equal weighting. No awards are granted for performance ratings below a certain threshold.

The Combined Performance Factor is derived by multiplying the Individual and Business Performance Factors, and is subject to a cap at 200% of target.

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Form of award

In principle, the Annual Incentive is paid in cash following the achievement of the yearly objectives. However, a number of associates in certain countries and certain key executives worldwide are encouraged to invest their Annual Incentive in a share savings plan. Details of the Novartis share savings plans are in section "Executive compensation 2013, Novartis Share Savings Plans".

2013 CEO outcome

The following is a description of the CEO's performance in 2013, including the Group Business Performance Factor, his Individual Performance Factor, and the resulting amount of his Annual Incentive.

2013 CEO Business Performance Factor:

The CEO is measured against the Group Business Performance Factor of the Group. The determination of the Group Business Performance Factor is based on four key performance measures: Group net income; Corporate net result (those financial elements controlled by Group, such as Corporate cost, taxes, financial income and expenses); Group free cash flow as a percentage of sales; and innovation.

All four performance measures have a threshold of achievement at 80% of target, below which a performance factor of zero would be awarded. The Committee has discretion to adjust for unplanned acquisitions or divestments, changes in accounting policies, income from associated companies, tax adjustments and other significant events not reflected in the targets. These adjustments can be positive, to give relief for unplanned expenses, as well as negative, to reverse unplanned income. All measures have a 1:5 payout leverage, where a 1% deviation in realization versus target leads to a 5% change in payout (e.g. a realization of 105% leads to a payout factor of 125% for a measure). The Business Performance Factor can range between 0 150%.

The table below shows the weighting of these measures and the financial targets, as well as the realization as a percentage of target for 2013. Financial targets are evaluated in constant currencies (cc) for the Annual Incentive.

Business Performance Factor for Group (including CEO)

Financial and innovation metrics	**Weight**	**Target**	**Realization[(1)]**
Group net income ($ m)	50%	7,969	
Net corporate result ($ m)	20%	(2,628)	
Group free cash flow as % of sales	20%	15.2%	
Weighted average of divisional performance	10%		
Total achievement approved by the Compensation Committee			**106%**
Resulting in a Business Performance Factor after 1:5 leverage of 130%			

(1) Realization in constant currencies mainly adjusted for contribution from delayed generic competition from *Diovan* monotherapy in the US.

The Group performed well versus these targets established in constant currencies by the Board at the beginning of the year on all performance metrics even after adjusting for the lower than expected impact of generic competition. Group net income was ahead of target mainly due to strong operating income performance. The favorable impact from the delayed entry of generic competition for *Diovan* monotherapy in the US was excluded from the calculation of the Business Performance Factor. Group free cash flow as a percentage of sales was ahead of target due to higher operating income performance in all divisions. With regards to innovation, the Group performance is a reflection of a strong year in all divisions and at the Novartis Institutes of BioMedical Research.

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The Group Business Performance Factor approved by the Compensation Committee for 2013 was 130%.

2013 CEO Individual Performance Factor

The CEO's individual objectives for 2013 were set by the Board based on a balanced scorecard with a mix of quantitative and qualitative targets for the Group in four key areas: financial performance, innovation and growth, organizational health, and customer satisfaction. In addition, the CEO was also assessed against our values and behaviors. Overall, the CEO's Individual Performance Factor is 110%. Below is a review of his 2013 performance in each area.

Specific financial targets for the CEO

In addition to the above business performance factors, the CEO's objectives for 2013 also included financial targets such as Group net sales, operating income, core operating income, net income, earnings per share, core earnings per share and free cash flow. The overall assessment against these metrics was above expectations set at the beginning of the year.

Innovation and growth

The CEO's objectives for 2013 included targets to extend our lead in innovation, accelerate growth and drive productivity. The innovation and growth targets are intended to deliver breakthroughs in areas of highest unmet medical needs, to help mitigate the effect of the expiration of certain patents, including *Diovan* (sales in 2012 were $4.4 billion), and to establish a sound platform for the long-term growth of the Group. Overall performance for the Group in 2013 exceeded the goals set by the Board.

Novartis invested $9.9 billion in research and development, significantly advancing our promising pipeline projects and securing major FDA and European approvals across our portfolio in 2013. Overall, regulatory approvals, submissions and Phase III clinical trials either met or exceeded targets. Three FDA breakthrough therapy designations were achieved: BYM338 indicated for sporadic inclusion body myositis, RLX030 in acute heart failure, and LDK378 in ALK positive non-small cell lung cancer. However, performance in innovation and growth fell short in two areas: the response to the competitive threat to *Lucentis* was delayed, as was public market reimbursement for *Bexsero* in the UK.

Our strong underlying sales growth (excluding patent expirations) more than offset the impact of generic competition. Net sales growth in emerging growth markets was also strong, up 10% (versus a growth rate of 6% in 2012) in constant currencies. In China, our net sales grew 23% in constant currencies.

Organizational health

The CEO's objectives for 2013 included goals for strengthening quality assurance, driving productivity, developing people, strengthening corporate responsibility, and enhancing the Group's reputation. In 2013, Novartis made a significant investment and strengthened measures toward achieving "quality beyond compliance". We completed 262 health authority inspections across our network, with 258 assessed as good or satisfactory. These included 31 inspections from the FDA, of which 28 were assessed as good or satisfactory. Notably, Novartis achieved compliant status for our Consumer Health plant in Lincoln, Nebraska, USA. Isolated quality issues remain at three manufacturing sites in the network, which Novartis is committed to address. Novartis also delivered savings of $1.5 billion from our procurement initiatives.

We continued to successfully implement the Corporate Responsibility strategy, as approved by the Board of Directors in 2012. Novartis continued to reach more patients by delivering Coartem without profit for malaria patients in endemic countries, and continuing to donate leprosy medicines through the WHO. Novartis also expanded Social Ventures, innovative business models that build local, sustainable capabilities for healthcare around the world.

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We further deepened and broadened programs to strengthen our leadership, to develop talent and to renew our focus on employee engagement.

In organizational health, we were also disappointed by the isolated conflict of interest issues we faced in Japan, regarding historical valsartan investigator-initiated trials, which impacted our reputation. We are working closely with the Japanese Ministry of Health, Labor and Welfare to resolve these issues.

Customer satisfaction:

In 2013, our "Customers First" initiative to improve cross-divisional collaboration and better serve our customers' needs delivered incremental sales of more than $1 billion, exceeding the objective.

2013 CEO Combined Performance Factor

Following multiplication of the Group Business Performance Factor (130%) and the CEO's Individual Performance Factor (110%), the Combined Performance Factor for the CEO would have been 143%.

However, given that we saw a decline, compared to the prior year, in reported operating income and free cash flow, the Compensation Committee and the CEO determined together, that he would waive a portion of his variable compensation for the performance year 2013. The Board of Directors supported this decision.

The value of his Annual Incentive award was determined as follows:

Annual Incentive Formula for CEO

	Annual base salary (CHF 000)		target incentive %		Calculated Combined Performance Factor	=	Calculated award value prior to amount waived (CHF 000)	Amount waived (CHF 000)	=	Final award (CHF 000)
Annual Incentive	2,061	x	50%	x	143%	=	1,473	412	=	1,061

Novartis Share savings plans

Overview

Where available, associates have the choice to receive part or all of their Annual Incentive in the form of Novartis shares in lieu of cash, by participating in one of the Novartis share savings plans. As a reward for their participation, we match their investments in shares after a holding period of three or five years. Through participation in a share savings plan, our associates are incentivized to remain with Novartis for the long-term, while sharing in the future financial success of Novartis and further aligning with the long-term interests of our shareholders.

We currently have three share savings plans:

Leveraged Share Savings Plan (LSSP): Worldwide, 27 key executives were invited to participate in LSSP based on their performance in 2013. Annual Incentive is invested in Novartis shares and is subject to a holding period of five years. At the end of the holding period, participants will receive one free matching share for every share invested;

Employee Share Ownership Plan (ESOP): In Switzerland, ESOP is available to 13,751 associates. Participants in this plan may choose to receive their Annual Incentive (i) 100% in shares; (ii) 50% in shares and 50% in cash; or (iii) 100% in cash. At the end of a three-year holding period, each

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participant will receive one free matching share for every two shares invested. A total of 6,321 associates chose to receive shares under ESOP for their performance in 2013; and

United Kingdom Plan (ESOP UK): In the United Kingdom, 2,600 associates can invest up to 5% of their monthly base compensation in shares (up to a maximum of GBP 125) and may also be invited to invest all or part of their net Annual Incentive in shares. At the end of a three-year holding period, participants will receive one free matching share for every two shares invested. During 2013, 1,404 associates elected to participate in this plan.

Associates may participate in only one of these plans in any given year.

No shares are matched under these plans if an associate leaves Novartis prior to the end of the holding period for reasons other than retirement, disability or death, unless determined otherwise by the Compensation Committee (for example, in connection with a reorganization or divestment).

For those who have chosen to receive their Annual Incentive in shares, the number of shares awarded is determined by dividing the actual incentive amount by the closing price of the shares on the grant date.

Following shareholder approval at the 2013 AGM of the new executive compensation system, this is the last year that Executive Committee members are eligible to participate and receive awards under the share savings plans.

2013 CEO outcome

In 2013, the CEO was eligible to participate in either the Leveraged Share Savings Plan, or the Employee Share Ownership Plan. He decided not to participate in either plan.

Equity plan "Select"

Overview

The Equity Plan "Select" is a global equity incentive plan under which eligible associates may receive an annual award.

Under the Equity Plan "Select", we define a target incentive as a percentage of base compensation for each participating associate at the beginning of each performance period traditionally the start of each calendar year. Depending on the role, including its focus on the long-term success of Novartis, target incentive percentages may reach up to 200% of base compensation. For members of the Executive Committee, Equity Plan "Select" represents between 37% and 57% of their total variable compensation at target.

Once the award has been granted, it is subject to a three-year vesting period. The long-term value of this award is tied to share price development, allowing executives to realize the long-term impact of their decisions and actions.

Following shareholder approval at the 2013 AGM of the new executive compensation system, this is the last year that members of the Executive Committee are eligible to receive an award under the plan.

Performance measures

For all executives, the Equity Plan "Select" award is subject to the same Combined Performance Factor as the Annual Incentive. Details of the measures contained within the Combined Performance Factor are in section "Executive compensation 2013, Annual incentive".

Awards are subject to a cap of 200% of target.

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Form of award at grant

The Equity Plan "Select" allows participants to choose the form of their award. At grant, equity may be taken in the form of restricted shares or Restricted Share Units (RSUs). Tradable share options were removed as a choice under this plan from December 31, 2013.

Restricted shares: Each restricted share is entitled to voting rights and payment of dividends during the vesting period.

RSUs: Each RSU is equivalent in value to one Novartis share and is converted into one share at the vesting date. RSUs do not carry any dividend or voting rights, except in the United States where associates receive a dividend equivalent during the vesting period for 2010 and 2011 awards.

Tradable share options from former plan cycles: Tradable share options expire on their 10th anniversary from the grant date. Each tradable share option granted to associates entitles the holder to purchase after vesting (and before the 10th anniversary from the grant date) one Novartis share at a stated exercise price that equals the closing market price of the underlying share at the grant date.

The terms of the tradable share options granted since 2010 are shown in the table below:

TERMS OF SHARE OPTIONS

Grant year	Exercise price (CHF/$)	Vesting (years) (Switzerland/ other countries)	Term (years)
2013	61.70/66.07	3/3	10
2012	54.20/58.33	3/3	10
2011	54.70/57.07	2/3	10
2010	55.85/53.70	2/3	10

A total of 12,943 participants received 774,373 restricted shares and 6,449,201 RSUs under the Novartis Equity Plan "Select" for their performance in 2013, representing a participation rate of about 9.5% of all full-time-equivalent associates worldwide.

As of December 31, 2013, 89.5 million share options granted to associates were outstanding, covered by an equal number of shares and corresponding to 3.7% of the total number of outstanding Novartis shares.

Approximately 3.9% of the total equity value awarded under the Equity Plan "Select" was granted to the members of the Executive Committee.

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If a participant leaves Novartis for reasons other than retirement, disability or death, unvested shares, RSUs and share options are forfeited, unless determined otherwise by the Compensation Committee (for example, in connection with a reorganization or divestment).

Delivery at vesting

Following the vesting period, settlement is made in unrestricted Novartis shares or American Depositary Receipts (US only).

2013 CEO outcome

As for the Annual Incentive (described in section "Executive compensation 2013, Annual incentive"), the Compensation Committee and the CEO determined together that he would waive a portion of his variable compensation for 2013. The value of his award was determined as follows:

Select award formula for CEO

	Annual base salary (CHF 000)		target incentive %		Calculated Combined Performance Factor		Calculated award value prior to amount waived (CHF 000)	Amount waived (CHF 000)		Final award value (CHF 000)
Select	2,061	x	175%	x	143%	=	5,156[1]	1,442	=	3,714

(1) Select was awarded in the form of 50 361 RSUs (at a share price of CHF 73.75) which will vest in January 2017 provided that the CEO remains with the Group and complies with the regulations of the plan.

Long-Term Performance Plan (LTPP)

Overview

The Long-Term Performance Plan (LTPP) is an equity plan for key executives only, designed to drive long-term shareholder value creation. The LTPP is offered to selected executives, who are in key positions and have a significant impact on the long-term success of Novartis.

LTPP provides grants based on a target percentage of base compensation at the beginning of each plan cycle, and adjusted for changes in base compensation and target percentage increases during the plan cycle. Depending on the role and the level of responsibility of the associates, the target incentive percentages may reach up to 175% of base compensation. For members of the Executive Committee, LTPP represents between 20% and 44% of their total variable compensation at target.

Performance measure

The LTPP payout is based on the achievement of long-term shareholder value creation. The rewards are based on rolling three-year Group performance objectives focused on the Novartis Economic Value Added (NVA) measured annually. The NVA is a measure of the Group's performance, taking into account Group operating income adjusted for interest, taxes and cost of capital charge. More simply, NVA is a measure of the value created for our shareholders over and above an expected return.

The performance ratio of a plan cycle is determined right after the end of the third plan year by adding together the annual NVA realizations of all plan years of the plan cycle, dividing by the sum of performance targets for each year of the plan cycle and expressing the result as a percentage. The LTPP only vests if the realized NVA for the 3 year cycle exceeds 80% of target NVA, and it is capped at 120% of target NVA.

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Form of award at grant

At the beginning of every performance period, plan participants are granted a target number of RSUs according to the following formula:

Delivery at vesting

At the end of the three-year performance period, the Compensation Committee multiplies the adjusted target number of RSUs by the performance factor approved by the Compensation Committee. RSUs are converted into unrestricted Novartis shares and immediately vested. In the United States, awards may also be delivered in cash under the US deferred compensation plan.

The NVA performance factor is based on a 1:5 payout curve, where a 1% deviation in realization versus target leads to a 5% change in payout (for example, a performance ratio of 105% leads to a performance factor of 125%). If performance over the three-year vesting period falls below 80% of target, no shares will vest. If the participant leaves Novartis during the performance period for reasons other than retirement, disability or death, none of the award vests, unless determined otherwise by the Compensation Committee (for example, in connection with a reorganization or divestment). The performance factor is capped at 200% of target, corresponding to an achievement of 20% above target.

130 key executives earned 494,522 shares under the LTPP 2014 cycle, based on NVA achievement that exceeded our target for the performance period 2011 to 2013.

2013 CEO outcome

For this cycle, NVA achievement was measured over a three-year performance period, 2011 to 2013, and was 5% ahead of the cumulative three-year target of $6.0 billion driven by strong operating income performance.

While the entire three-year cycle was impacted by significant negative exchange rate differences (more than $2.0 billion in total across the three years), which do not get adjusted in NVA, this was more than offset by strong commercial execution versus the strategy. Growth products performed consistently well throughout the cycle and the expansion into emerging markets was successfully implemented. Further, a continued focus on productivity initiatives through procurement and resource allocation has also made a significant impact on the NVA result. In arriving at our final NVA performance score, the Compensation Committee excluded the favorable impact from the delayed entry of generic competition for *Diovan* monotherapy in the US.

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The following table shows the three-year cumulative NVA financial target, realization as a percentage of target and the NVA performance factor:

NVA performance factor

LTPP metrics	Cumulative 3 year target	Realization[1]	NVA performance factor
Group NVA ($ m)	5,998	105.2%	126%

(1) Realization mainly adjusted for 2013 NVA contribution arising from delayed generic competition from *Diovan* monotherapy in the US and 2011 impairment charges related to *Tekturna/Rasilez*

The CEO's LTPP award for the performance period 2011-2013 was determined as follows:

LTPP formula for CEO

	Target RSUs	x	NVA performance factor	=	Realized RSUs	Value (CHF '000)[1]
CEO	65,922	x	126%	=	83,062	6,126

(1) Based on the share price of CHF 73.75 at closing on award date.

The impact of the appreciation in our share price between the award date of the LTPP granted last year (share price of CHF 61.70) to our CEO and the award date of his LTPP for this year (share price of CHF 73.75) was CHF 1 million.

No future grants for the CEO and the other Executive Committee members will be made under this form of the LTPP, using the performance measure NVA. However two outstanding cycles will vest over 2014 and 2015 respectively.

Executive Compensation Tables

Compensation of members of the Executive Committee for 2013

The following table discloses the compensation earned by the CEO and other members of the Executive Committee for performance in 2013.

Alignment of reporting and performance

The compensation table synchronizes the reporting of annual compensation with the performance in the given year (i.e., all amounts awarded for performance in 2013 are disclosed in full). The column "Future LSSP/ESOP match" reflects shares to be awarded in the future if the Executive Committee member remains with Novartis for at least five or three years, respectively.

Valuation principles

In order to allow a comparison with other companies, shares, restricted shares, RSUs and ADRs are disclosed at their market value on the date of grant. Market value is the quoted closing share price at that date. The market value of share options is calculated using an option pricing valuation model as at the grant date.

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EXECUTIVE COMMITTEE MEMBER MARKET VALUE COMPENSATION FOR PERFORMANCE YEAR 2013[1]

		Base compensation	Variable compensation				Benefits		Total		Total compensation
			Short-term incentive plans		Long-term incentive plans						
	Currency	Cash (Amount)	Cash (Amount)	Shares (Market value)[2]	Equity Plan "Select" Shares (Market value)[3]	Long-Term Performance Plan Shares (Market value)[4]	Pension benefits (Amount)[5]	Other benefits (Amount)[6]	(Amount)[7]	Future LSSP/ESOP match[8] Shares (Market value)	Including future LSSP/ESOP match[9,10] (Amount)
Joseph Jimenez (Chief Executive Officer)	CHF	2,055,417	1,061,200	0	3,714,124	6,125,823	176,071	93,652	13,226,287	0	13,226,287
Juergen Brokatzky-Geiger	CHF	719,417	0	562,639	1,125,130	980,285	111,750	25,521	3,524,742	421,998[8]	3,946,740
Kevin Buehler	$	1,136,792	755,700	0	3,022,839	2,042,452	221,243	67,832	7,246,858	0	7,246,858
Felix R. Ehrat	CHF	841,667	0	718,325	1,436,503	1,155,441	169,575	0	4,321,511	718,325	5,039,836
David Epstein	$	1,400,000	579,600	579,668	2,898,018	2,830,397	375,079	30,013	8,692,775	579,668	9,272,443
Mark C. Fishman	$	990,000	866,300	0	3,465,002	1,765,989	244,152	208,836	7,540,279	0	7,540,279
Jeff George	CHF	816,667	387,450	387,483	1,549,856	975,344	126,872	62,607	4,306,279	193,741	4,500,020
George Gunn	CHF	865,000	545,000	0	908,305	1,469,616	119,676	44,682	3,952,279	0	3,952,279
Brian McNamara	$	633,231	14,527	567,873	1,164,830	552,038	80,203	30,430	3,043,132	567,873	3,611,005
Andrin Oswald	CHF	812,500	0	529,820	1,059,566	877,035	129,813	9,388	3,418,122	529,820	3,947,942
Jonathan Symonds (until April 30, 2013)[11]	CHF	310,833	194,792	0	0	1,400,291	56,529	2,985,401	4,947,846	0	4,947,846
Harry Kirsch (as from May 1, 2013)[12]	CHF	483,333	263,720	175,820	879,026	428,856	53,918	59,613	2,344,286	175,820	2,520,106
Total[13]	**CHF**	**10,760,277**	**4,506,033**	**3,437,610**	**20,450,720**	**20,077,080**	**1,797,473**	**3,593,293**	**64,622,486**	**3,103,227**	**67,725,713**

(1) Does not include reimbursement for travel and other necessary business expenses incurred in the performance of their services as these are not considered compensation.

(2) Participants elected to invest some or all of the value of their annual incentive in the Leveraged Share Savings Plan (LSSP) with a five-year vesting period or the Swiss Employee Share Ownership Plan (ESOP) with a three-year vesting period rather than to receive cash.

(3) Novartis shares granted under the Novartis Equity Plan "Select" have a three-year vesting period.

(4) Awarded based on the achievement of Novartis Economic Value Added (NVA) objectives over the three-year performance period ended December 31, 2013.

(5) Service costs of pension and post-retirement healthcare benefits accumulated in 2013.

(6) Includes perquisites and other compensation valued at market price. Does not include cost allowances and 2013 tax-equalization regarding the international assignment of David Epstein ($90,163), Jeff George (CHF 459,764) and Andrin Oswald (CHF 36,056). Does not include an annual pension in payment for Kevin Buehler as a result of a change of control clause ($499,524) relating to the acquisition of Alcon in 2011. Does not include dividend equivalents paid in 2013 to Kevin Buehler ($256,784) for pre Alcon merger RSUs grants, to David Epstein ($41,150) and Brian McNamara ($6,173) for RSUs grants made in or prior to 2010.

(7) The value of all equity grants included in this table has been calculated based on the closing price of January 22, 2014.

(8) Reflects shares to be awarded in the future under the share saving plans, either the five-year Leveraged Share Savings Plan (LSSP) or the three-year Swiss Employee Share Ownership Plan (ESOP). Participants will receive the full amount of additional shares ("matching shares") after the expiration of either the five- or three-year vesting period, assuming that they are still in service on the respective vesting date. Since Juergen Brokatzky-Geiger will reach the statutory retirement age before vesting of the LSSP, the matching award disclosed in the table reflects the value of the applicable prorated number of matching shares at his statutory age of retirement.

(9) The values of the shares and RSUs reflected in this table have been calculated based on market value at the date of grant. The closing share price on the grant date January 22, 2014 was CHF 73.75 per Novartis share and $80.79 per ADR.

(10) All amounts are gross amounts (i.e., before deduction of social security and income tax due by the executives). The employer social security contribution is not included.

(11) Jonathan Symonds stepped down from the Executive Committee as of April 30, 2013 and provides advisory work to Novartis since May 1, 2013. The information under the columns "Base compensation", "Short-term incentive plans" and "Pension benefits" in the table reflects his pro rata compensation over the period from January 1, 2013 to April 30, 2013 (i.e. the period during which he was member of the Executive Committee). The information under the column "Long-Term Performance Plan" in the table reflects his pro rata compensation for the performance period from January 1, 2011 to April 30, 2013 (i.e. the portion of the LTPP three-year performance period during which he was a member of the Executive Committee). The other compensation ("Other benefits") includes the contractual compensation and benefits from May 1, 2013 to December 31, 2013. Jonathan Symonds may receive further contractual compensation until January 2015 up to a maximum of CHF 2,969,293 in addition to relocation and financial planning reimbursements.

(12) The amounts reflect the compensation as Permanent Attendee to the Executive Committee from May 1, 2013 until December 31, 2013.

(13) Amounts in US dollar for Kevin Buehler, David Epstein, Mark C. Fishman and Brian McNamara were converted at a rate of CHF 1.00 = $1.079, which is the same average exchange rate used in the Group's consolidated financial statements.

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EXECUTIVE COMMITTEE MEMBER EQUITY AWARDS FOR PERFORMANCE YEAR 2013 (Number of equity instruments)

	Variable compensation			
	Short-term incentive plans	Long-term incentive plans		
	Shares (Number)[1]	Equity Plan "Select" Shares (Number)[2]	Long-Term Performance Plan Shares (Number)	Future LSSP/ESOP match Shares (Number)
Joseph Jimenez (Chief Executive Officer)	0	50,361	83,062	0
Juergen Brokatzky-Geiger	7,629	15,256	13,292	5,722
Kevin Buehler	0	37,416	25,281	0
Felix R. Ehrat	9,740	19,478	15,667	9,740
David Epstein	7,175	35,871	35,034	7,175
Mark C. Fishman	0	42,889	21,859	0
Jeff George	5,254	21,015	13,225	2,627
George Gunn	0	12,316	19,927	0
Brian McNamara	7,029	14,418	6,833	7,029
Andrin Oswald	7,184	14,367	11,892	7,184
Jonathan Symonds (until April 30, 2013)[3]	0	0	18,987	0
Harry Kirsch (as from May 1, 2013)[4]	2,384	11,919	5,815	2,384
Total	**46,395**	**275,306**	**270,874**	**41,861**

(1) These shares have a five-year vesting period under LSSP and a three-year vesting period under ESOP.

(2) These shares awarded under the Equity Plan "Select" have a three-year vesting period.

(3) The shares under the column "Long-Term Performance Plan" in the table reflects his pro rata compensation for the performance period from January 1, 2011 to April 30, 2013 (i.e. the portion of the LTPP three-year performance period during which he was member of the Executive Committee).

(4) The amounts reflect the compensation as Permanent Attendee to the Executive Committee from May 1, 2013 until December 31, 2013.

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As the table below shows, the majority of Executive Committee compensation is variable and awarded under the long-term incentive plans. This ensures alignment with the interests of our shareholders.

EXECUTIVE COMMITTEE MEMBER ACTUAL COMPENSATION MIX IN 2013 BASE AND VARIABLE COMPENSATION[1]

		Variable (%)	
	Base salary	**Annual incentive**	**Long-term incentive[2]**
Joseph Jimenez (Chief Executive Officer)	15.9%	8.2%	75.9%
Juergen Brokatzky-Geiger	21.2%	16.6%	62.2%
Kevin Buehler	16.3%	10.9%	72.8%
Felix R. Ehrat	20.3%	17.3%	62.4%
David Epstein	16.9%	14.0%	69.1%
Mark C. Fishman	14.0%	12.2%	73.8%
Jeff George	19.8%	18.8%	61.3%
George Gunn	22.8%	14.4%	62.8%
Brian McNamara	21.6%	19.9%	58.5%
Andrin Oswald	24.8%	16.2%	59.1%
Harry Kirsch (as from May 1, 2013)[3]	21.7%	19.7%	58.6%
Total[4]	**18.2%**	**13.5%**	**68.3%**

(1) Excludes pension, other benefits and future LSSP/ESOP match.

(2) Long-term incentive includes Equity Plan "Select" and LTPP grants.

(3) Permanent Attendee to the Executive Committee.

(4) Excludes Jonathan Symonds who stepped down from the Executive Committee as per April 30, 2013.

Shares and Share Options owned by members of the Executive Committee

The following tables show the total number of vested and unvested Novartis shares or ADRs, as well as RSUs (but excluding unvested matching RSUs from LSSP/ESOP and unvested RSUs from LTPP) and the total number of share options owned by members of the Executive Committee and "persons closely linked to them" (see definition in section "Compensation governance") as of December 31, 2013.

As of December 31, 2013, no member of the Executive Committee together with "persons closely linked" to them owned 1% or more of the outstanding shares of Novartis, either directly or through share options.

As of December 31, 2013, all members of the Executive Committee who have served at least three years on the Executive Committee have met or exceeded their personal Novartis share ownership requirements.

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SHARES OWNED BY EXECUTIVE COMMITTEE MEMBERS

	Number of shares[1]
Joseph Jimenez	465,007
Juergen Brokatzky-Geiger	268,498
Kevin Buehler	316,038
Felix R. Ehrat	52,616
David Epstein	259,854
Mark C. Fishman	347,359
Jeff George	127,666
George Gunn	157,468
Brian McNamara	39,242
Andrin Oswald	150,810
Harry Kirsch (as from May 1, 2013)[2]	68,102
Total[3]	**2,252,660**

(1) Includes holdings of "persons closely linked" to members of the Executive Committee (see definition under Compensation Governance Share Ownership Requirements).

(2) Permanent attendee to the Executive Committee.

(3) Excludes the holdings of Jonathan Symonds who stepped down from the Executive Committee as per April 30, 2013, consisting of 171,503 shares as per April 30, 2013.

SHARE OPTIONS OWNED BY EXECUTIVE COMMITTEE MEMBERS[1]

	Number of share options[2]						
	2013	2012	2011	2010	2009	Other	Total
Joseph Jimenez					552,076	157,266	709,342
Juergen Brokatzky-Geiger						211,766	211,766
Kevin Buehler						605,877[3]	605,877
Felix R. Ehrat							
David Epstein							
Mark C. Fishman						327,594	327,594
Jeff George			141,396	97,827	15,359	1,793	256,375
George Gunn						94,371	94,371
Brian McNamara						78,973	78,973
Andrin Oswald							
Harry Kirsch (as from May 1, 2013)[4]						44,569	44,569
Total[5]	**0**	**0**	**141,396**	**97,827**	**567,435**	**1,522,209**	**2,328,867**

(1) As of 2014, the share option grants have been discontinued under the Novartis Equity Plan "Select".

(2) Share options disclosed for a specific year were granted in that year under the Novartis Equity Plan "Select." The column "Other" refers to share options granted in 2008 or earlier, to share options granted to these executives while they were not Executive Committee members (nor Permanent Attendees), and to share options bought on the market by the Executive Committee members or "persons closely linked" to them (see definition under Compensation Governance Share Ownership Requirements).

(3) Consists of share settled appreciation rights resulting from conversion of Alcon equity into Novartis equity.

(4) Permanent Attendee to the Executive Committee.

(5) Excludes the holdings of Jonathan Symonds who stepped down from the Executive Committee as per April 30, 2013, consisting of 54,348 share options as per April 30, 2013.

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Loans to members of the Executive Committee

No loans were granted to current or former members of the Executive Committee in 2013. No such loans were outstanding as of December 31, 2013.

Other payments to members of the Executive Committee

During 2013, no payments (or waivers of claims) other than those set out in the Executive Committee Member Compensation tables (including their footnotes) were made to current members of the Executive Committee or to "persons closely linked" to them.

Payments to former members of the Executive Committee

During 2013, no payments (or waivers of claims) were made to former members of the Executive Committee or to "persons closely linked" to them, except for an amount of CHF 1,146,000, which includes CHF 1,125,000 paid to a former member of the Executive Committee in relation to his obligation to refrain from activities that compete with any business of Novartis and an amount of $429,560 paid to a former member of the Executive Committee for the period January 1 to February 28,2013 in relation to the end of her notice period and in relation to her obligation to refrain from activities that compete with any business of Novartis.

BOARD COMPENSATION 2013

Members of boards of directors of global companies today face increasing responsibilities and must deal with issues that require ever higher levels of expertise and engagement. As a global healthcare company, Novartis shareholders have elected members of the Board of Directors who bring the skills required to meet these challenges. We set the compensation for the members of the Board of Directors at a level that allows for the attraction and retention of high-caliber individuals with global experience. The members of its Board of Directors do not receive variable compensation, underscoring their focus on long-term corporate strategy, supervision and governance.

Compensation Structure

	Board compensation
Fixed compensation	Yes
Variable compensation	No

The Board of Directors determines the compensation of its members, other than the Chairman, each year, based on a proposal by the Compensation Committee and advice from its independent advisor.

COMPENSATION OF THE CHAIRMAN OF THE BOARD

Daniel Vasella, M.D.

After 17 years of service as our Chairman, including 14 years as CEO and Chairman, 2013 saw the retirement of Dr. Daniel Vasella from the Board of Directors. The Board of Directors wishes to thank Dr. Vasella for his leadership in creating Novartis; for his dedication to the Company; for transforming the business portfolio to focus on healthcare, building a world-leading research organization and a strong leadership team; and for forging a reputation that is among the best in the industry and beyond.

Since the 2013 AGM, when he stepped down, Dr. Vasella has provided certain transitional services, including select Board mandates with subsidiaries of the Company, to support the ad-interim Chairman and the new Chairman. For his services during this transition period, from the AGM on February 22, 2013

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to October 31, 2013, Dr. Vasella received cash compensation of CHF 2.7 million, and 31,724 unrestricted shares on October 31, 2013 (market value of the shares at the time of delivery was CHF 2.2 million). During the same period, the Company reimbursed the cost of Dr. Vasella's professional legal and financial advice amounting to CHF 161,983, and the cost of terminating his life insurance, amounting to CHF 60,166. For this period, a total amount of CHF 5.1 million was paid to him.

Dr. Vasella has subsequently been available to the Company, at the CEO's request and discretion, to provide coaching to high-potential Novartis associates and for speeches at key Novartis events. This agreement became effective on November 1, 2013 and will last until the end of 2016. Dr. Vasella will be compensated at a rate of $25,000 per day, with an annual guaranteed minimum fee of $250,000 for each of the calendar years 2014, 2015 and 2016. During November and December 2013, Dr. Vasella did not provide any coaching to associates and did not receive any compensation for this period.

Dr. Vasella will hold the title of Honorary Chairman in recognition of his significant achievements on behalf of the Company. There are no rights associated with this role in addition to his fiduciary duty as Honorary Chairman, and Dr. Vasella will not attend Board meetings or receive Board documents. No compensation will be provided in relation to this role other than administrative support and security which are usual and customary for a position of this nature.

Joerg Reinhardt, Ph.D.

At the 2013, AGM shareholders elected Dr. Joerg Reinhardt to the Board of Directors as our Chairman, effective August 1, 2013.

As our Chairman, Dr. Reinhardt will receive total annual compensation valued at CHF 3.8 million. The total compensation is comprised equally of cash and shares, as follows:

Cash compensation: CHF 1.9 million per year

Share compensation: annual value equal to CHF 1.9 million of unrestricted Novartis shares

Unless the Chairman decides to waive it, his total compensation shall increase for each period from Annual General Meeting to the succeeding Annual General Meeting at a rate at least equal to the average rate of the base salary increase granted to the Swiss executive associates of Novartis. Dr. Reinhardt is eligible for pension and insurance benefits according to the standard Novartis benefit plans. There is no variable or other component to his regular compensation.

Dr. Reinhardt will also receive compensation for lost entitlements at his former employer, with a total value of EUR 2.6 million. Payments will be staggered based on the vesting period at his former employer, and extend over the period from 2014-2016, provided that he remains in office as our Chairman at the respective due dates. On January 31, 2014, 2015 and 2016 he will respectively receive EUR 748,000 EUR 871,251 and EUR 1,045,800.

Ulrich Lehner, Ph.D.

During the transition period between the departure of Dr. Vasella and the arrival of Dr. Reinhardt, Vice Chairman Dr. Ulrich Lehner led the Board of Directors as Chairman on an ad-interim basis.

Dr. Lehner received an amount of CHF 791,668, which was a pro rata of CHF 1.9 million total annual compensation, for his tenure as Chairman ad-interim between the AGM on February 22, 2013 and July 31, 2013. This amount was paid equally in cash and shares. There was no variable or other component to Dr. Lehner's compensation. During his service as Chairman ad-interim, he did not receive regular Board fees and was not eligible to receive pension or any other insurance benefits.

Following completion of his tenure as Chairman ad-interim, the compensation of Dr. Lehner reverted to the ordinary compensation for a member of the Board of Directors.

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Other members of the Board of Directors

For 2013, other members of the Board of Directors received, in one installment, an annual fixed Board membership fee and additional fees for committee chairmanships, committee memberships, and other functions to compensate for their increased responsibilities and engagements. Members of the Board of Directors do not receive additional fees for attending meetings. The annual fees cover the period from the AGM of the year of disclosure to the next AGM. Members of the Board of Directors are required to receive at least 50% of their total fees in the form of unrestricted Novartis shares. Members of the Board of Directors do not receive share options and do not have pension benefits.

The annual fee rates for Board membership and additional functions, to be paid in cash and shares, are as follows:

BOARD MEMBER ANNUAL FEE RATES (EXCL. CHAIRMAN)

	Annual fee (CHF)
Board membership	350,000
Chairman's Committee membership	150,000
Audit and Compliance Committee membership	100,000
Other Board Committee membership	50,000
Vice chairmanship of the Board of Directors	50,000
Board Committee chairmanship (except for ACC)	60,000
Audit and Compliance Committee chairmanship	120,000
Delegated board membership[1]	125,000

(1) The Board of Directors has delegated Rolf M. Zinkernagel to the Scientific Advisory Board of the Novartis Institute for Tropical Diseases (NITD). The Board of Directors has delegated both Rolf M. Zinkernagel and William Brody to the Board of Directors of the Genomics Institute of the Novartis Research Foundation (GNF).

Benchmarking the compensation of the members of the Board of Directors

The level of compensation for the members of the Board of Directors is set based on benchmarks that include the remuneration of members of boards of directors of comparable global healthcare companies (listed in section "Executive compensation philosophy and principles, Executive compensation benchmarking") and other large Swiss companies.

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Board Member Compensation Table

Compensation of members of the Board of Directors for 2013

The following table discloses the compensation received by the members of the Board of Directors in 2013.

BOARD MEMBER COMPENSATION IN 2013[1]

	Board membership	Vice Chairman	Chairman's Committee	Audit and Compliance Committee	Risk Committee	Compensation Committee	Corporate Governance and Nomination Committee	Delegated board membership	Annual cash compensation (CHF) (A)	Shares (Market value) (CHF) (B)[2]	Shares (Number)	Other (CHF) (C)	Total (CHF) (A)+(B) +(C)
Daniel Vasella (until Feb 22, 2013)[3]	Chair		Chair	(4)	(4)	(4)	(4)		707,283	697,148	11,299	1,573,334[5]	2,977,765
Joerg Reinhardt (as of Aug 1, 2013)[6]	Chair		Chair						791,667	950,023	14,064	159,124[7]	1,900,814
Ulrich Lehner	Chair a.i.[8]								629,168[8]	629,217[8]	10,198	69,825[9]	1,328,210
Enrico Vanni						Chair			355,000	355,022	5,754	41,010[9]	751,032
Dimitri Azar									225,000	225,020	3,647		450,020
Verena A. Briner									175,000	175,043	2,837	18,782[9]	368,825
William Brody[10]									262,500	262,534	4,255		525,034
Srikant Datar				Chair					360,000	360,020	5,835		720,020
Ann Fudge									250,000	250,008	4,052		500,008
Pierre Landolt[11]							Chair			410,058	6,646	21,349[9]	431,407
Charles L. Sawyers									175,000	175,043	2,837		350,043
Andreas von Planta					Chair				280,000	280,056	4,539		