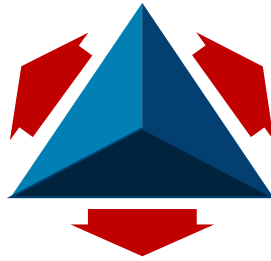


NEW

Jean-Michel Peny

EXCERPT

Pharma Market Insight & Strategy



2013 Edition

 ***Smart Pharma Consulting***

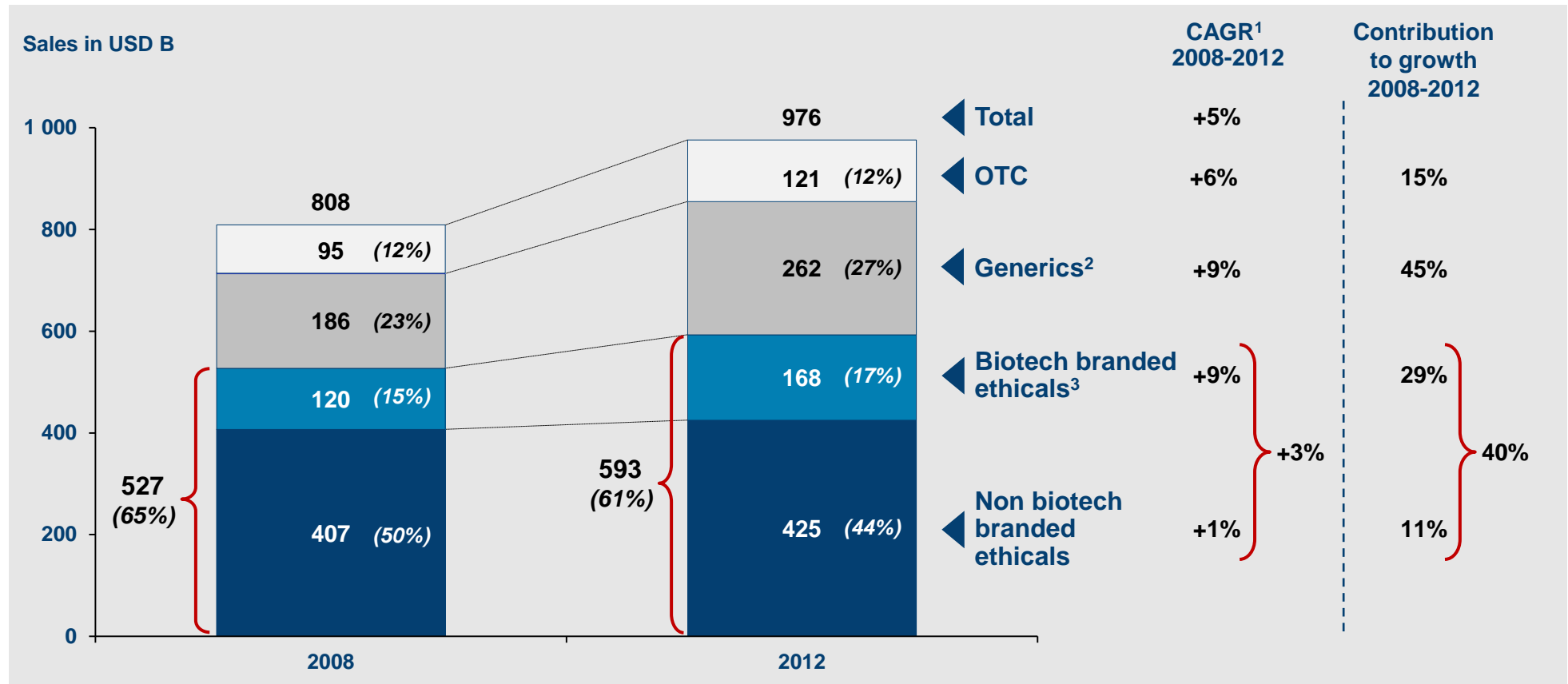
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1. Pharma Market Insight

Between 2008 and 2012, generics contributed to 45 % of the sales growth in value, compared to 40% for biotech and non biotech branded ethical

Global pharmaceutical market growth by strategic segment (2008-2012)



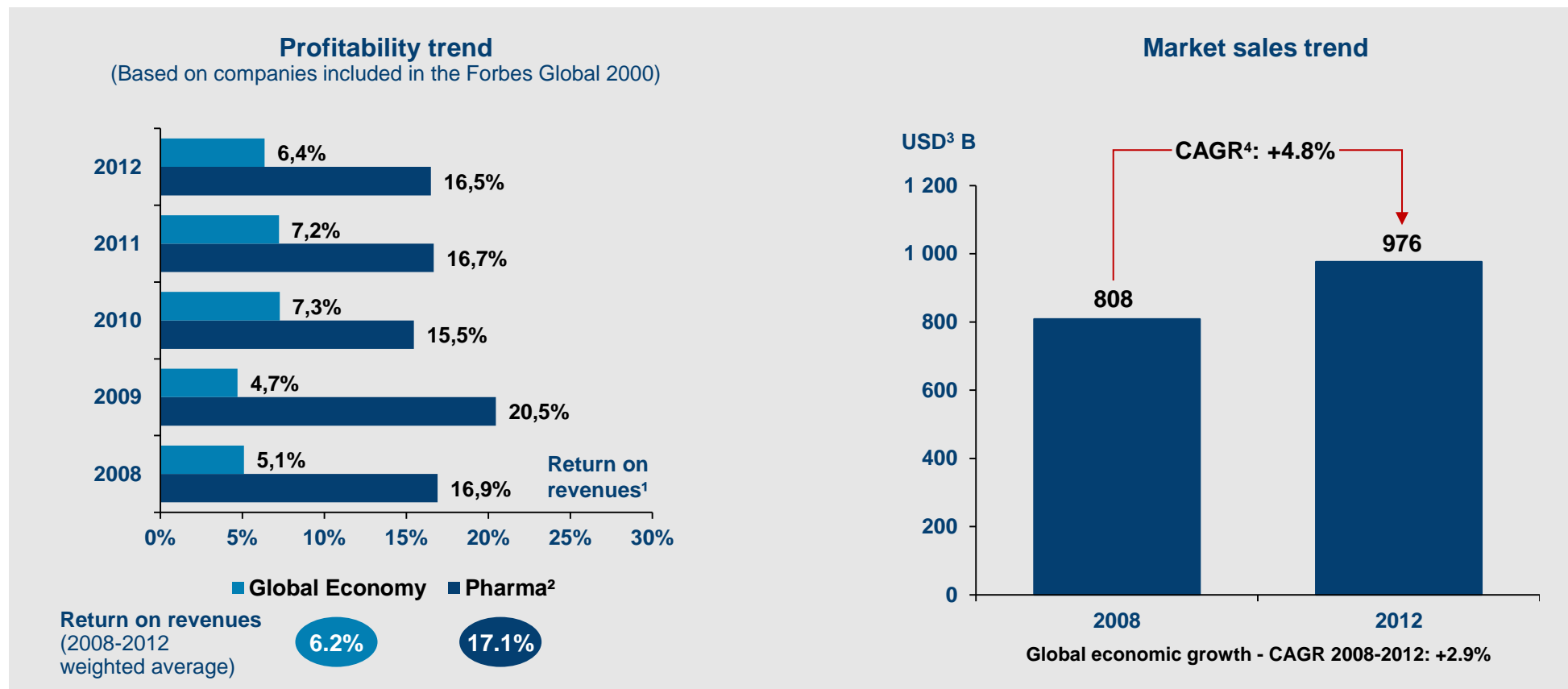
Source: Nicholas Hall's OTC Yearbook 2013 – Smart Pharma Consulting analyses

¹ Compound annual growth rate – ² Includes branded and unbranded generics and biosimilars, but excludes OTC – ³ Biosimilars are excluded as they are included in generics

1. Pharma Market Insight

The pharma sector continues to be very attractive as it offers higher profitability and growth rates than the global economy and most of other sectors

Global pharmaceutical market attractiveness (2008-2012)



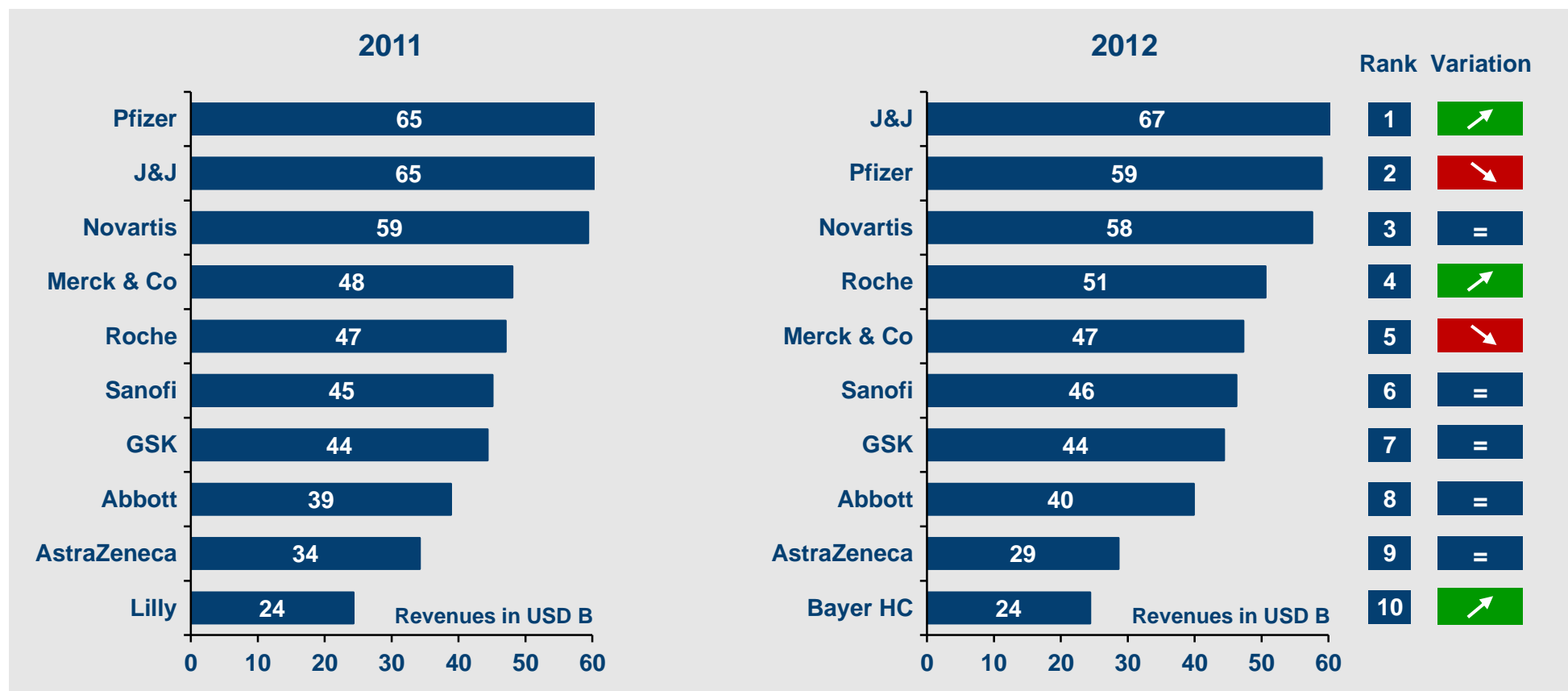
Source: IMS World Review Executive 2013 – Forbes: The Global 2000 (2013) – United Nations : World Economic Situation and Prospects 2011-2012-2013 – IMF 2013 – Smart Pharma Consulting analyses

¹ Return on revenues = net profit / total revenues – ² Including biotech companies, J&J; Fresenius and Baxter, which are included in the medical equipment and other supplies industry and excluding companies whose business is mainly focused on distribution – ³ Constant USD (2012) – ⁴ Compound annual growth rate

1. Pharma Market Insight

Companies ranking based on sales was fairly stable in 2012 compared to 2011, however Bayer Healthcare entered in the top 10 companies at the expense of Lilly

Ranking of leading pharmaceutical companies by sales (2011-2012)



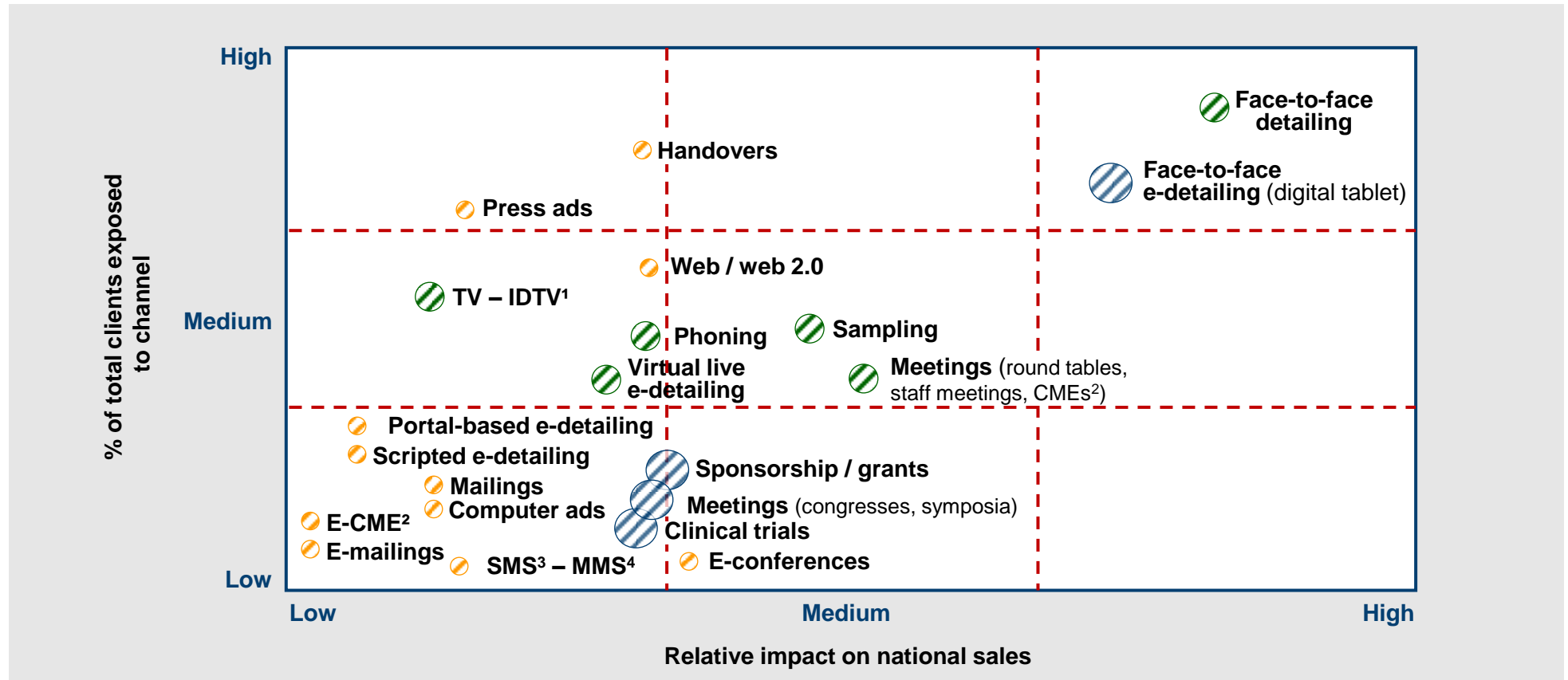
Note: Reported numbers have been adjusted to make them comparable

Source: Annual reports 2011-2012 (GSK-Roche-Sanofi- Bayer Healthcare: average 2012 Federal Reserve exchange rate) – Smart Pharma Consulting analyses

1. Pharma Market Insight

Considered that global efficacy of a promotional channel depends on its impact per clients and on the number of clients exposed, face-to-face calls are still impactful

Promotional channel evaluation matrix



Relative cost per effective contact: High Medium Low

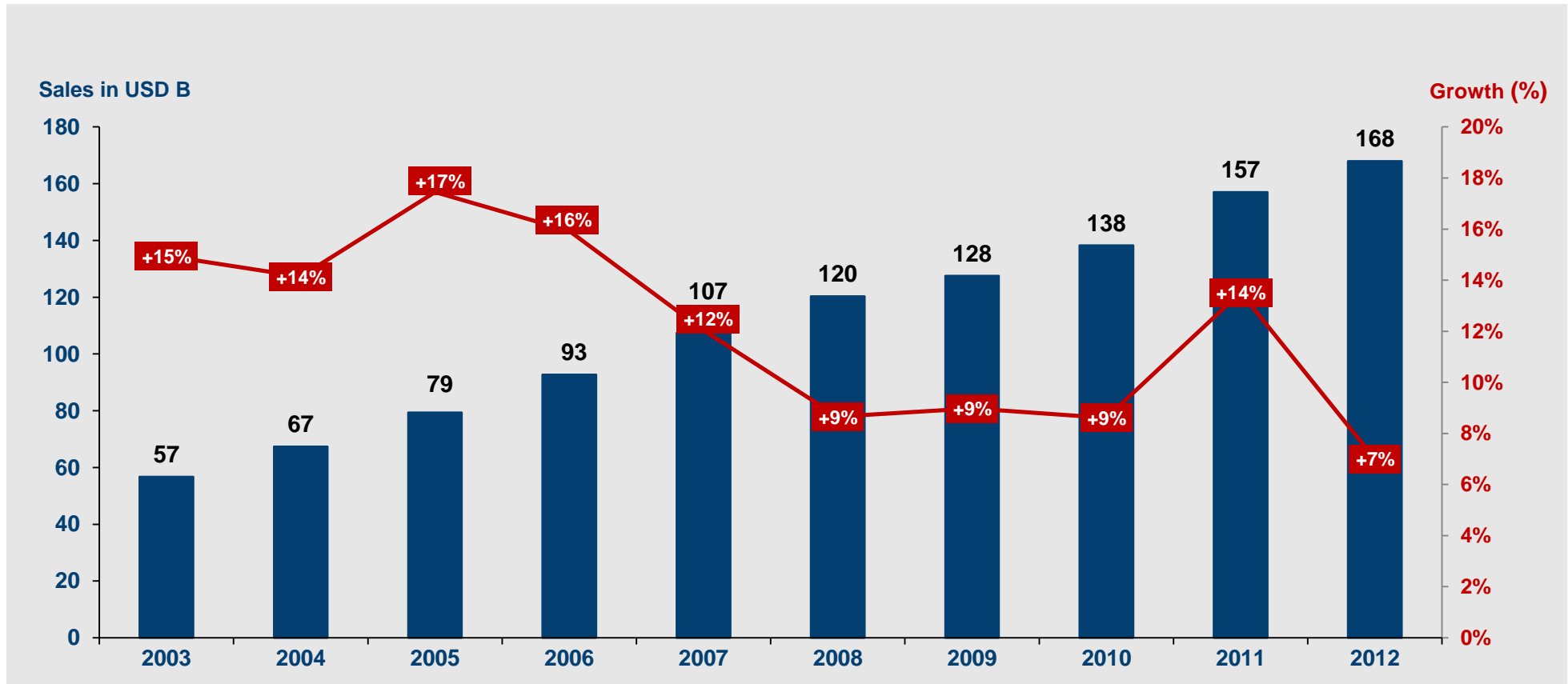
Source: Smart Pharma Consulting analysis

¹ Interactive digital television – ² Continuous medical education – ³ Short message service – ⁴ Multimedia message service

1. Pharma Market Insight

The 2012 growth of the biotech market was the lowest in the last ten years, due to the combination of more drastic price pressure and lower number of new launches

Evolution of the global biotech drugs market (2003-2012)

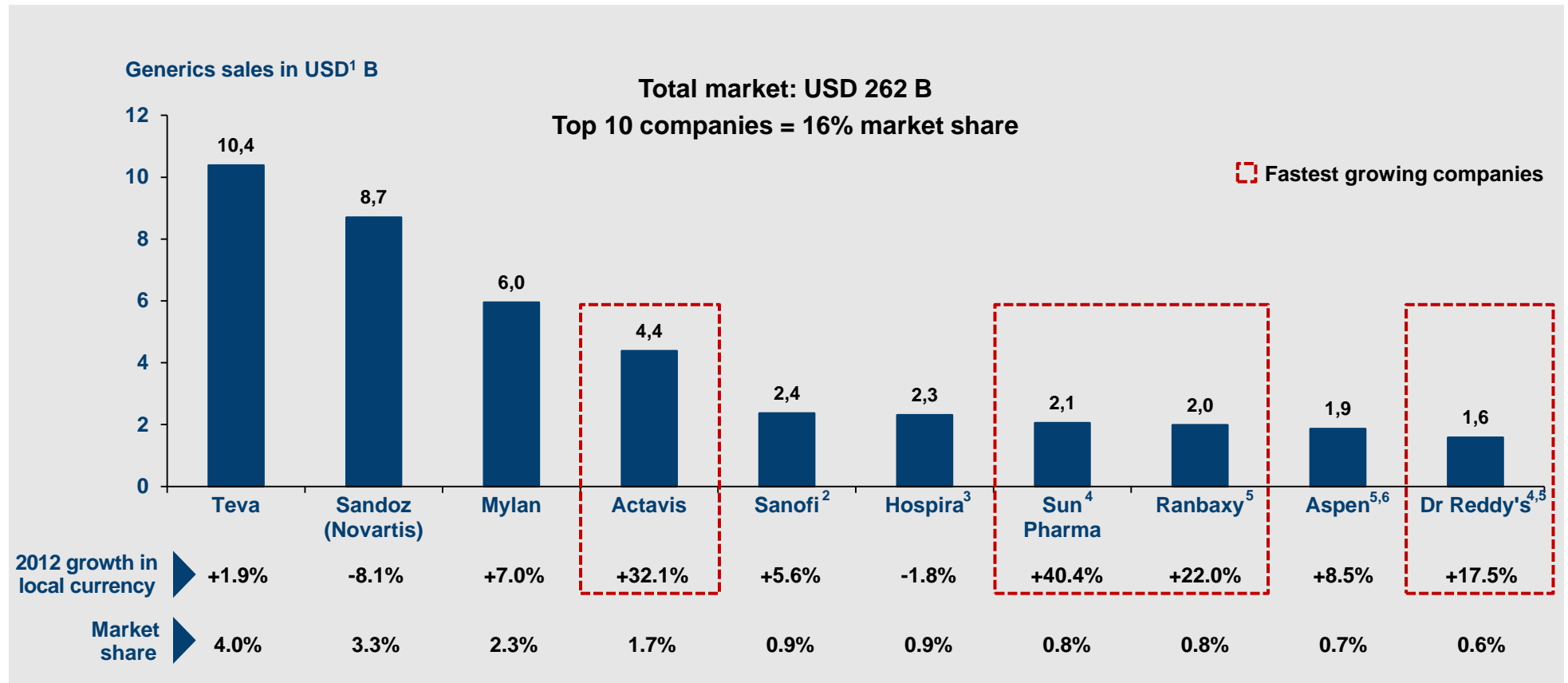


Source: IMS Medicines Outlook Through 2016 (July 2012) – Smart Pharma Consulting analyses

1. Pharma Market Insight

In 2012, only four of the top 10 generics companies posted double-digit growth rates, including three Indian companies (Sun Pharma, Ranbaxy and Dr Reddy's)

Global sales of leading generics companies (2012)



Note: Sales figures only include generics and APIs sales.

Source: Annual reports 2012 - IMS Medicines Outlook Through 2016 (July 2012) – Smart Pharma Consulting analyses

¹ Average 2012 Federal Reserve exchange rate – ² Sanofi generics business includes Zentiva in Europe, Sanofi Nichi Iko K.K. in Japan, and Medley in Brazil and Emerging Markets – ³ Specialty Injectable Pharmaceuticals excluding Precedex – ⁴ March fiscal year – ⁵ Average 2012 OANDA exchange rate – ⁶ June fiscal year

1. Pharma Market Insight

The variability of biopharmaceuticals and biosimilars is greater than that typically observed for conventional pharmaceuticals

Differences between generics and biosimilars

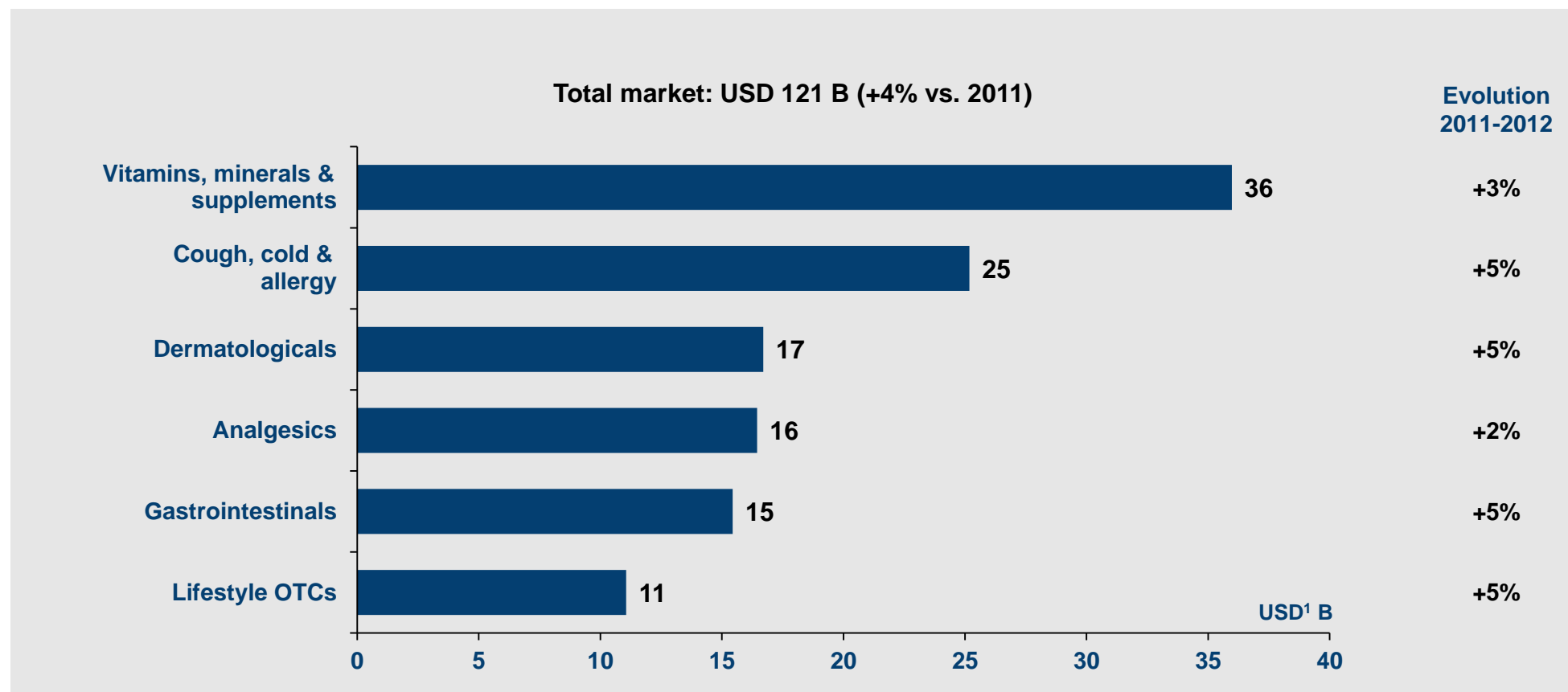
	Generics	Biosimilars
Composition	Generics have simple chemical structures and are considered to be identical to their reference medicines	Biosimilars and biopharmaceuticals are inherently variable due to the fact that they are produced from living organisms
Substitution	Authorized and encouraged by health authorities	Not formally authorized in most countries (exception of Bulgaria and Romania) but physicians are allowed to interchange biopharmaceuticals with biosimilars and vice versa
Indications	Always the same as the originator's	Same as the originator's only when sufficient evidence have been provided
European Marketing authorization	Abridged procedure with simplified dossier reproducing original brand's clinical outcome	Full clinical dossier, centralized procedure
USA Marketing authorization	Abbreviated new drug application	Analytical, animal and clinical studies

Sources: Smart Pharma Consulting Analyses

1. Pharma Market Insight

All segments of the global OTC market are steadily growing with the “Vitamin, minerals & supplements” segment consolidating as the largest one

Sales per OTC market segment (2012)



Source: Nicholas Hall's OTC Yearbook 2013 – Smart Pharma Consulting analyses

¹ Ex-factory price; USD exchange rate at 31 December 2012

1. Pharma Market Insight

The key drivers and limiters of the pharmaceutical market, as well as their probable impact on sales trends, are well identified

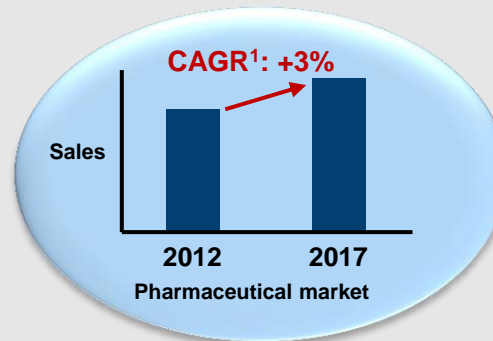
Pharmaceutical market drivers and limiters (2012-2017)



Key forces



- 1** Population increase and ageing
- 2** Strong development of generics market (though at the expense of R&D-based brands)
- 3** Stronger demand for new and better pharmaceuticals, including vaccines
- 4** Increasing demand for more secondary-care products, including biologicals
- 5** Increasing access to pharmaceuticals by emerging markets (e.g. BRIC² countries, Mexico, Turkey, etc.)



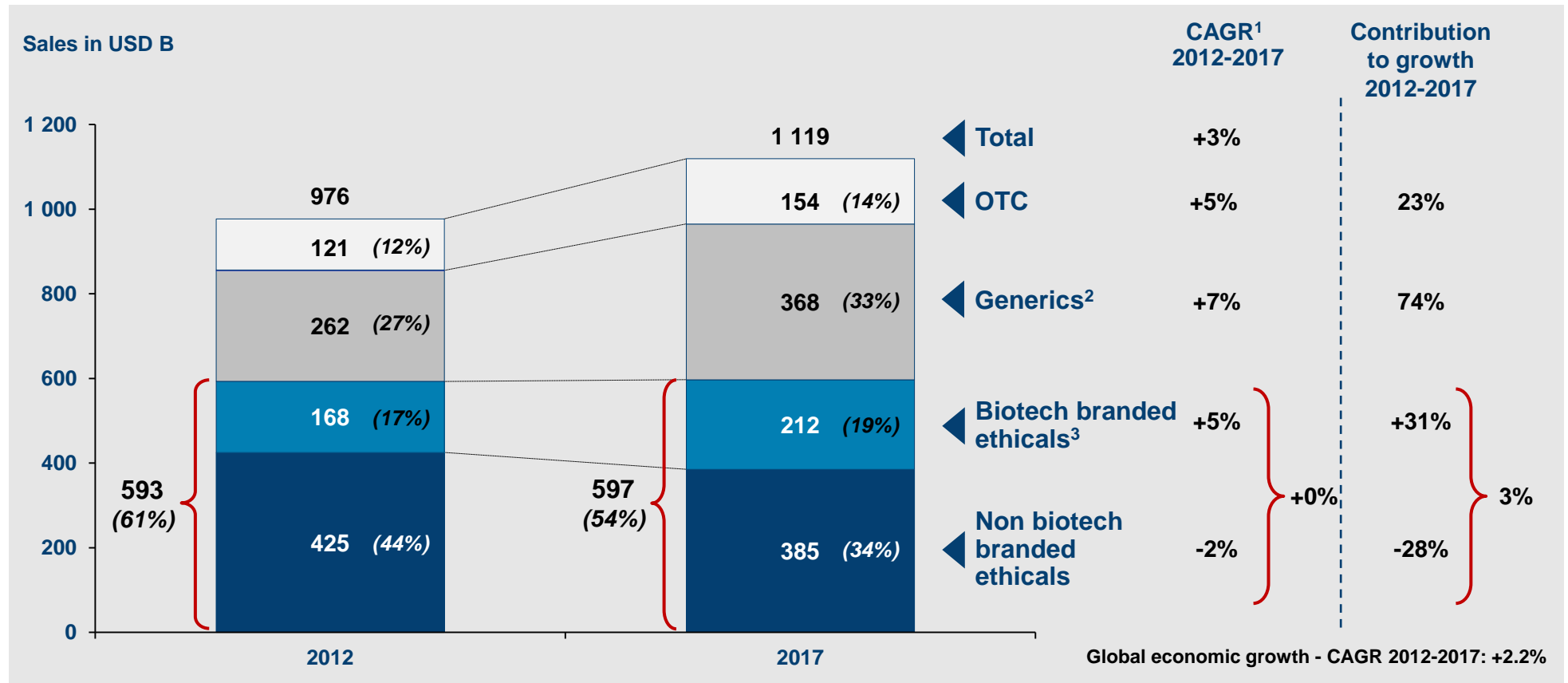
- 1** Stagnation of R&D productivity of pharma companies and increasing barriers to market access
- 2** Intensification of competition from generics and biosimilars
- 3** Increasing price pressure from payers (governments, HMOs, patients, etc.), exacerbated in EU by the debt crisis
- 4** Slow down of the OTC segment
- 5** Redistribution of bargaining power among actors, away from physicians and towards regulators, payers and patients, who are becoming more knowledgeable

1. Pharma Market Insight

In 2017, generics should become a segment almost as large as the non biotech branded ethicals and contribute to 74% of the global pharma sales growth since 2012



Pharma market growth by strategic segment (2012-2017)



Source: Nicholas Hall's OTC Yearbook 2013 – Smart Pharma Consulting analyses – IMF World Economic Outlook Update, July 2013 - Dun and Bradstreet 2013

¹ Compound annual growth rate – ² Includes branded and unbranded generics and biosimilars, but excludes OTC – ³ Biosimilars are excluded as they are included with generics

1. Pharma Market Insight

USA, China, Brazil and India will offer the highest growth perspectives for the generics segment over the 2012-2017 period



	Specific drivers	Specific limiters	Attractiveness
USA	<ul style="list-style-type: none"> Good acceptance of generics and vast market Many high value drugs coming off patent in the next few years Very probable pro-generic new reforms Biosimilar legislation passed in 2010 Drug purchasers keen to reduce costs 	<ul style="list-style-type: none"> Very competitive market, once 180-day exclusivity is lost High cost/duration of litigation with branded companies that fight to extend patent life Complex regulatory system, approval delays due to FDA backlog Unclear scope for biosimilar products 	H
China	<ul style="list-style-type: none"> Most medicines payments are out-of-pocket (although private health insurance and drug coverage are available) Increasing adherence to the State FDA and good manufacturing practices (GMP) Inexpensive manufacturing capabilities 	<ul style="list-style-type: none"> Strict patent laws are being introduced Since 2011, launch of price reviews across-the-board and price cuts with emphasis on costly reimbursed drugs (including generics) Domination of local producers (98% of the Chinese generics market is controlled by local producers) Complex drug distribution system 	H
Brazil	<ul style="list-style-type: none"> Low fixed costs & fast supply of raw materials Enforced bioequivalence, generics packaging, generics prescribing and substitution are new regulatory measures to expand generics 10 bestselling pharmaceuticals experiencing patent expiry between 2006 and 2013 (~ USD 358 M market) 	<ul style="list-style-type: none"> Lack of generics awareness among all targets Due to high competition among local producers, generics prices have fallen dramatically, diminishing profits Opening of “popular pharmacies” where original drugs are sold with up to 90% discounts, to increase access to medicines 	H
India	<ul style="list-style-type: none"> Increasing awareness and access to medicines Increasing private investments to develop generics Increasing health insurance leading to better market affordability for medicines Wide potential market (1/6 of the world population) 	<ul style="list-style-type: none"> Patented drug sales are expected to increase, owing to an improvement in the implementation of patent laws and spread of health insurance Lack of medicines awareness in rural areas Expansion of health insurance coverage leading to price reductions 	H

H: High – M: Moderate – L: Low attractiveness, taking into account the impact on sales and profits of generics players

Source: Espicom Business Intelligence 2011 – World Generics Market 2009-2024 (Visiongain) – The Pharma Letter (for India) – PharmaHandbook (IMS Health) – What Lures the Attention of Global Generic

1. Pharma Market Insight

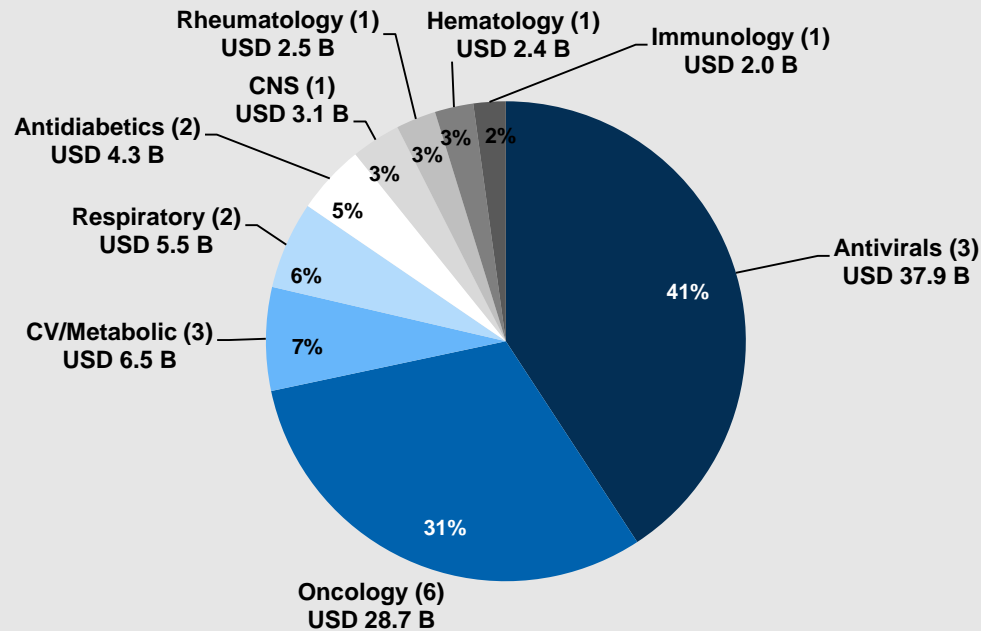
Currently, the most promising R&D projects indicate that specialty drugs will continue to gain importance over primary care products



The top 20 most valuable R&D projects

Top 20 most valuable R&D projects by net present value (NPV) and therapeutic area

Total NPV value: USD 84.8 B



- The antivirals class is the most valuable therapeutic area in terms of R&D projects potential. It includes sofosbuvir, developed by Gilead and currently filing for marketing authorization for the treatment of hepatitis C, which is the most promising product to be launched
- Oncology continues to be one of the leading therapeutic areas with 6 products amongst the top 20 R&D projects
- Cardiovascular (CV) and metabolic remain the most important “conventional” areas driven by R&D projects in pulmonary arterial hypertension and hypertriglyceridemia

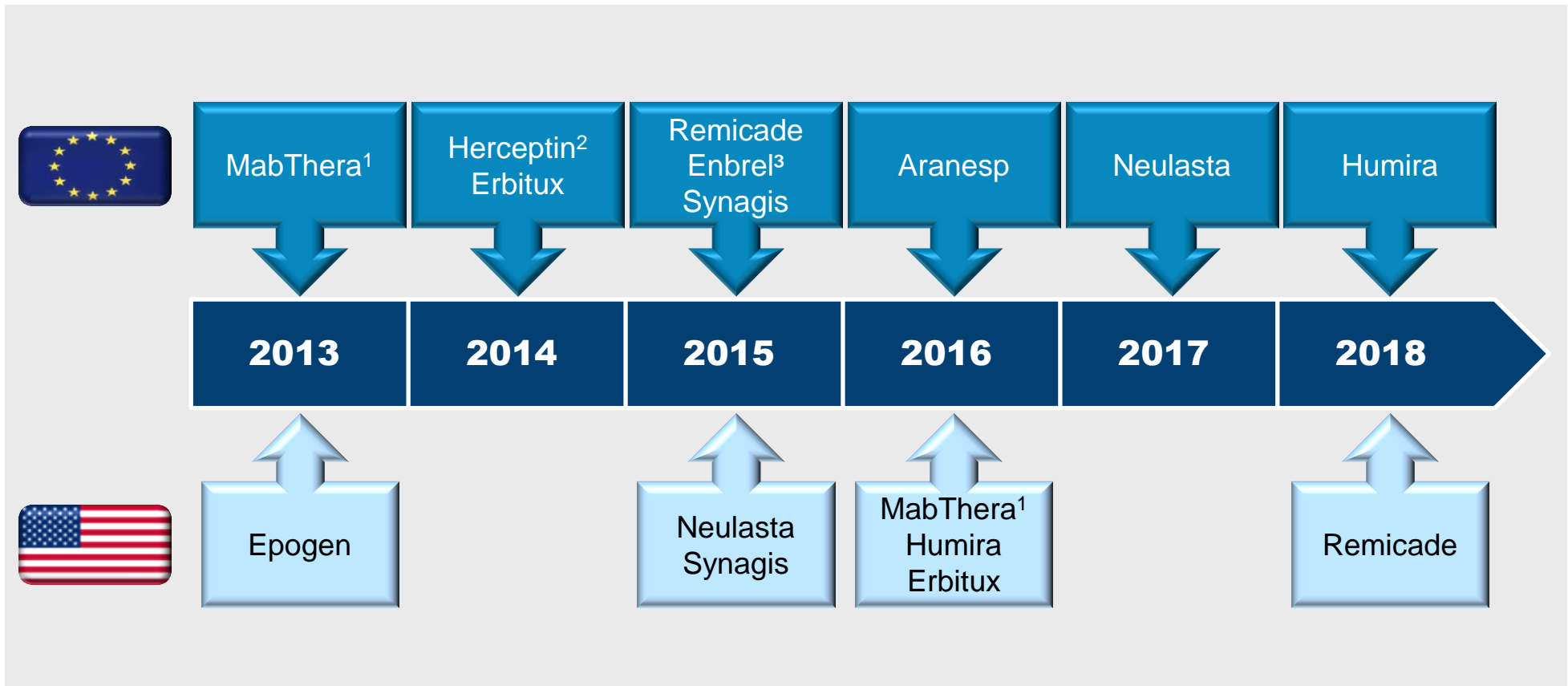
(x): number of projects – USD B: total NPV by therapeutic area

1. Pharma Market Insight

A number of key biologics will lose their patent protection in the next six years, however EU and USA expiry dates can vary significantly

Patent expiry of key biological products over 2013-2018

LIMITERS



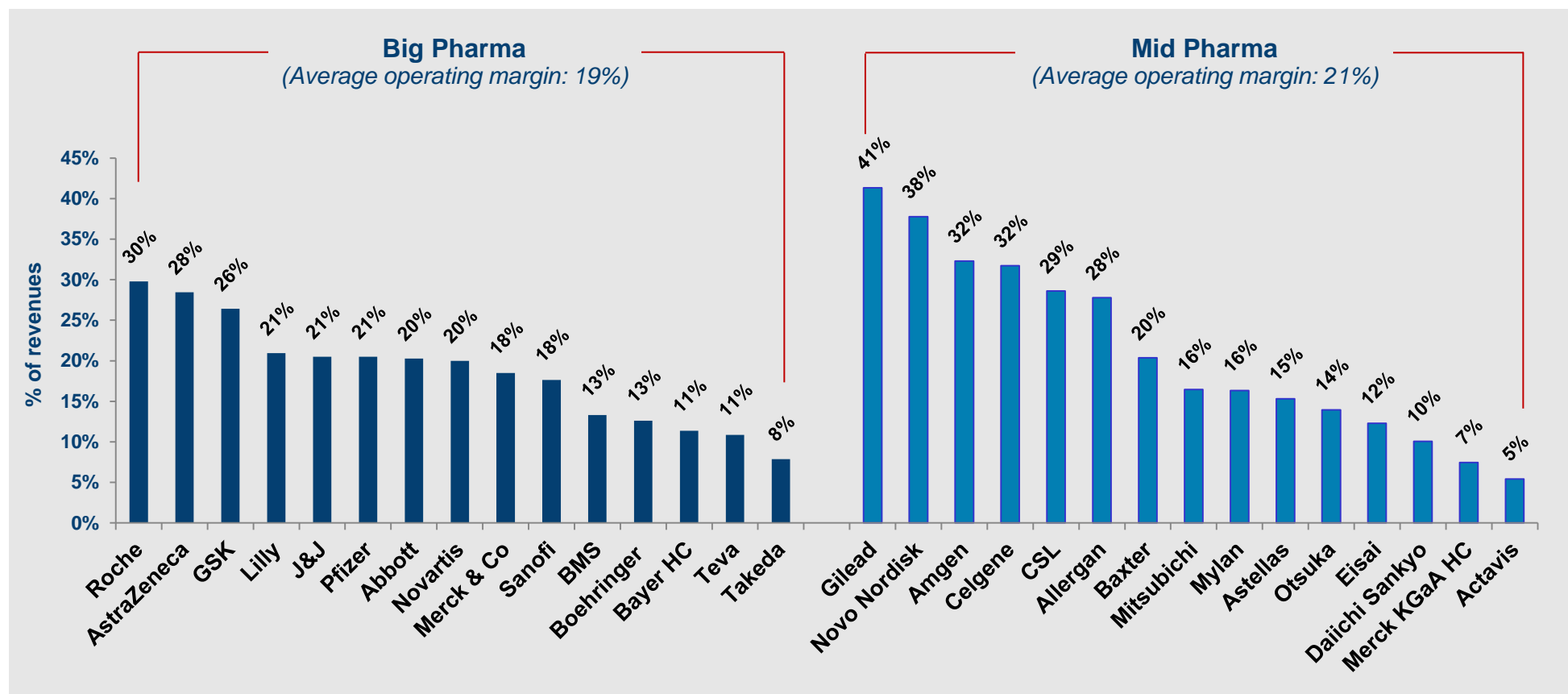
Sources : Evaluate Pharma World Preview 2018 – Company annual reports – GaBI Online, www.gabionline.net, Sheppard et al., Bernstein Research – Smart Pharma Consulting Analyses

¹ Also marketed under the name of Rituxan – ² In the UK only, patent expiry in other European countries in 2015 – ³ Enbrel's patent in the US was supposed to expire in 2011 but it was extended until 2028

2. Performance & Strategy of Leading Pharma Companies

The average operating margin was higher and wider for Mid Pharma companies compared to Big Pharma companies

Operating margins by company (2012)

































Note: reported numbers have been adjusted to make them comparable

2. Performance & Strategy of Leading Pharma Companies

Mid Pharma companies are more focused on specific strategic segments and geographical regions, unlike Big Pharma companies

Pharma companies development strategy (2012)

		Big Pharma		Mid Pharma	
		Strategic segments		Strategic segments	
		Rx branded Focused	Diversified	Rx branded Focused	Diversified
Geographical coverage	Focused	<ul style="list-style-type: none">  BMS  Lilly 	<ul style="list-style-type: none">  Teva 	<ul style="list-style-type: none">  Allergan  Amgen  Astellas  Celgene  Eisai  Gilead Sciences  Mitsubishi T. 	<ul style="list-style-type: none">  Actavis  Mylan  Daiichi Sankyo
	Diversified	<ul style="list-style-type: none">  AstraZeneca  GSK  Merck & Co  Pfizer  Sanofi  Takeda 	<ul style="list-style-type: none">  Abbott  Bayer  Boehringer Ing.  J&J  Novartis  Roche 	<ul style="list-style-type: none">  CSL  Merck KGaA  Novo Nordisk 	<ul style="list-style-type: none">  Baxter  Otsuka

Note: **Rx Branded focused:** Ethicals sales and vaccines $\geq 75\%$ of total product sale – **Geographically focused:** $>50\%$ of sales in a single geographical region (e.g. USA, Europe, Japan, etc.)

Source: Companies annual reports (2012) – Smart Pharma Consulting analyses

3. Leading Pharma Companies at a Glance

Name **Pfizer**

Country **United States of America**

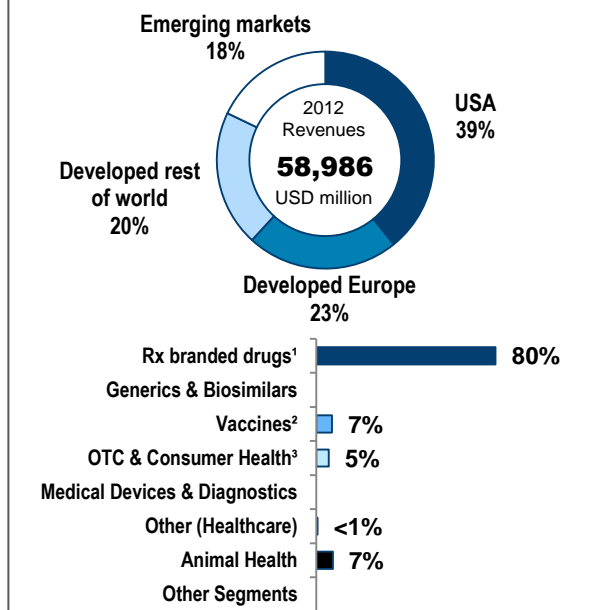
Key Financial Data

USD million	12/12	12/11	Growth
Revenues	58,986	65,259	(9.6)%
Net Sales	58,986	65,259	(9.6)%
Operating Profit	12,080	12,304	(1.8)%
Operating profit margin	20.5%	18.9%	
R&D expenses	7,870	9,074	(13.3)%
% of revenues	13.3%	13.9%	

Key Products

	Sales (USD Million)	YoY % Change	Share of Net Sales
1. LYRICA <i>Neuropathic Pain Agent</i>	4,158	12.6%	7%
2. LIPITOR <i>Antihyperlipidemic</i>	3,948	(58.8)%	7%
3. ENBREL <i>Immune Suppressant</i>	3,737	1.9%	6%
4. PREVNAR 13 <i>Vaccine</i>	3,718	1.7%	6%
5. CELEBREX <i>Analgesic</i>	2,719	7.8%	5%
6. VIAGRA <i>Peripheral Vasodilator</i>	2,051	3.5%	3%
7. NORVASC <i>Cardiovascular Agent</i>	1,349	(6.6)%	2%
8. ZYVOX <i>Antibiotic</i>	1,345	4.8%	2%

Key Segments



Pipeline (as of 9 August 2013)

Number of compounds at each stage	Phase I	Phase II	Phase III	Filing
Inflammation & Immunology	4	9 (1)		3 (3)
Neuroscience & Pain	5	4 (1)	4 (2)	2 (1)
Oncology	5	3 (2)	7 (4)	
Cardiovascular & Metabolism	5	5	1 (1)	
Vaccines	3	1	1	
Others	7	1	1	3

(x) Line extensions/other indications

Strategic Priorities

- Improve innovation and overall productivity by prioritizing areas with the greatest scientific, commercial promise (immunology and inflammation; oncology; cardiovascular; metabolic diseases; neuroscience & pain and vaccines)
- Maximize research, development and commercial opportunities
- Improve the performance of Pfizer innovative core
- Expand the pipeline by entering into agreements with other companies to develop, license or acquire promising compounds, technologies or capabilities
- Build a broad portfolio of business through various business development transactions
- Protect Pfizer intellectual property

Deal Strategy

- After Wyeth acquisition (2009), the focus has been on business development opportunities in the high-priority therapeutic areas (Pfizer totaled 75 other acquisitions as of December 31, 2012)
- In 2012/2013:
 - Completion of the acquisition of NextWave Pharmaceuticals (specialty pharmaceutical company), of Alacer (vitamin supplements)
 - Acquisition by Viiv Healthcare (company specialising in the development of therapies for HIV that was created as a joint venture by Pfizer and GSK in November 2009) of exclusive global rights to HIV integrase inhibitor portfolio developed by Shinogi-Viiv Healthcare
 - Creation of Hisun Pfizer Pharmaceuticals with Zhejiang Hisun Pharmaceuticals, a leading Chinese pharmaceutical company
 - Agreement with AstraZeneca for the global over-the-counter (OTC) rights for Nexium
 - Conclusion of the alliance with Biocon made in 2010 to commercialize Biocon's biosimilar version of insulin
 - Divestment of Zoetis (animal Health) and completion of Pfizer Nutrition divestment to Nestlé

Source: 2012 Annual Report – Pipeline as of 9 August 2013 – Pfizer Press release – Smart Pharma Consulting analyses

¹ RX branded drugs segment include generics ² Prevnar-13 / Prevenar-13 and Prevnar / Prevenar (7-valent) only, since detailed sales of other vaccines are not disclosed – ³ Consumer Healthcare segment includes products related to pain management, respiratory and personal care, as well as dietary supplements

Pharma Market Insight & Strategy

Edition 2013

- Pharma Market Insight & Strategy - 2013 Edition, provides a fact-based analysis of the evolution of the pharmaceutical market through the end of 2017 and evaluates the performance and strategy of 30 leading pharmaceutical companies.
- The author shares his strategic vision of where the pharmaceutical market is headed and the strategies that pharmaceutical companies can adopt to succeed – with particular emphasis on the performance and corresponding strategic priorities of the Big Pharma and Mid Pharma companies.
- Key facts and figures corresponding to each of the 30 analyzed pharmaceutical companies have been summarized into one-page identity cards, providing a concise, powerful snapshot of each firm for easy review and comparison.



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Prior to founding Smart Pharma Consulting in 2001, Jean-Michel advised many of the leading global pharmaceutical companies during his 20 years as a Strategy and Management consultant with Bain & Co, AT Kearney, Arthur D. Little, and ISO HealthCare Group (Monitor). Prior to his consulting career, Jean-Michel was a General Manager in the pharmaceutical industry for over seven years with Servier and Novartis.

Jean-Michel holds a doctorate in Pharmaceutical Sciences from the University of Nantes, a master in International Business from the University of Lyon III and an MBA from HEC Business School in Paris.

He is a former affiliate professor at HEC Business School and has published over 40 articles on business issues related to the pharmaceutical industry, five books: “Pharma Market Insight & Strategy” (2012 and 2013), Pharma Companies Strategies (2011), “Pharma Market Insights” (2010), “Pharma Marketing Tool Box” (2008); and co-authored a fourth book "Le marketing du médicament en question(s)" (Vuibert – 2008).

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