



# Performance & Organization of most successful mid pharma companies

— **Short version** —

*“ New business strategies consist in doing different things  
while new business models consist in doing things differently”*

*Confidential*

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## 1. Introduction

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Smart Pharma has studied the three most profitable mid-pharma companies and two Big-pharma having implemented specific strategic and organizational changes

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### Key points of the presentation

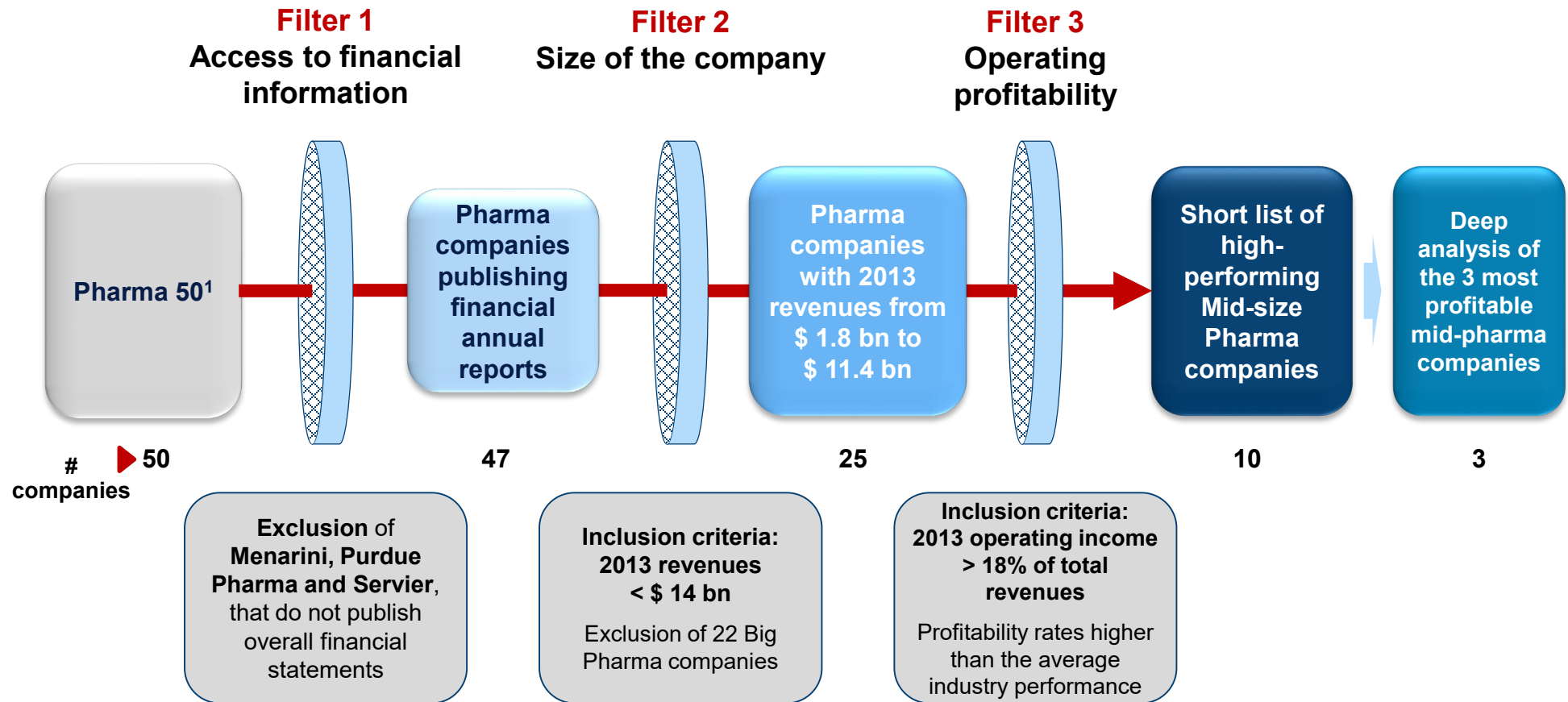
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- The **performances** of pharma companies may **vary significantly** from one to another
- Their performances are **not only driven by strategic decisions...**
- ... but also by **organizational models**
- Thus, Smart Pharma Consulting has selected and analyzed the **key strategic and organizational drivers which support the three mid-size best performing companies** amongst the Top 50 ones, in 2013:
  - **Biogen Idec**
  - **Celgene**
  - **Gilead**
- **Smart Pharma Consulting has also tried to understand why and how:**
  - **BMS** moved from a primary care to a secondary care focus business model?
  - **Sanofi** has decided to create a fully-integrated structure encompassing its diabetes business

## 2. Screening of companies

Smart Pharma Consulting proposes a methodology to identify pharma companies having shown the best economic performance in the world over the 2011-2013 period

### Methodology to identify high performing mid-pharma companies



Sources: <sup>1</sup> Pharma 50 ranking as published by Pharmaceutical Executive in June 2014, Smart Pharma Consulting analyses

## 2. Screening of companies

**Gilead, Biogen Idec and Celgene are the most profitable mid-pharma companies among mid-pharma over the 2011-2013 period**

### Selected high performing mid-pharma companies – Top 3

Company Name	Operating Income (USD million*)								CAGR 2011-2013
	2013	% of revenues	2012	% of revenues	2011	% of revenues	2011-2013	% of revenues	
<b>Gilead</b>	<b>4,524</b>	<b>40.4%</b>	<b>4,010</b>	<b>41.3%</b>	<b>3,790</b>	<b>45.2%</b>	<b>12,324</b>	<b>42.1%</b>	<b>9.3%</b>
<b>Biogen Idec</b>	<b>2,516</b>	<b>36.3%</b>	<b>1,856</b>	<b>33.6%</b>	<b>1,725</b>	<b>34.2%</b>	<b>6,097</b>	<b>34.8%</b>	<b>20.8%</b>
<b>Celgene</b>	<b>1,809</b>	<b>27.9%</b>	<b>1,746</b>	<b>31.7%</b>	<b>1,443</b>	<b>29.8%</b>	<b>4,998</b>	<b>29.7%</b>	<b>12.0%</b>
Allergan	1,809	28.7%	1,611	28.5%	1,375	26.4%	4,795	27.9%	14.7%
Shire	1,733	35.1%	1,045	23.1%	1,136	27.3%	3,914	28.7%	23.5%
CSL <sup>1</sup>	1,658	30.0%	1,509	29.4%	1,255	27.1%	4,422	28.9%	14.9%
Sun Pharma <sup>2</sup>	1,184	43.0%	820	42.3%	561	39.9%	2,565	42.0%	45.3%
Grifols	978	26.8%	877	25.2%	371	15.5%	2,226	23.4%	62.4%
Chugai	807	18.6%	765	19.3%	640	16.7%	2,212	18.2%	12.3%
Aspen <sup>1</sup>	715	25.2%	486	26.1%	380	25.8%	1,581	25.6%	37.3%

\* Restated at constant rates currency using the 2013 Federal Reserve average exchange rates

Sources: Annual reports - Smart Pharma Consulting analyses

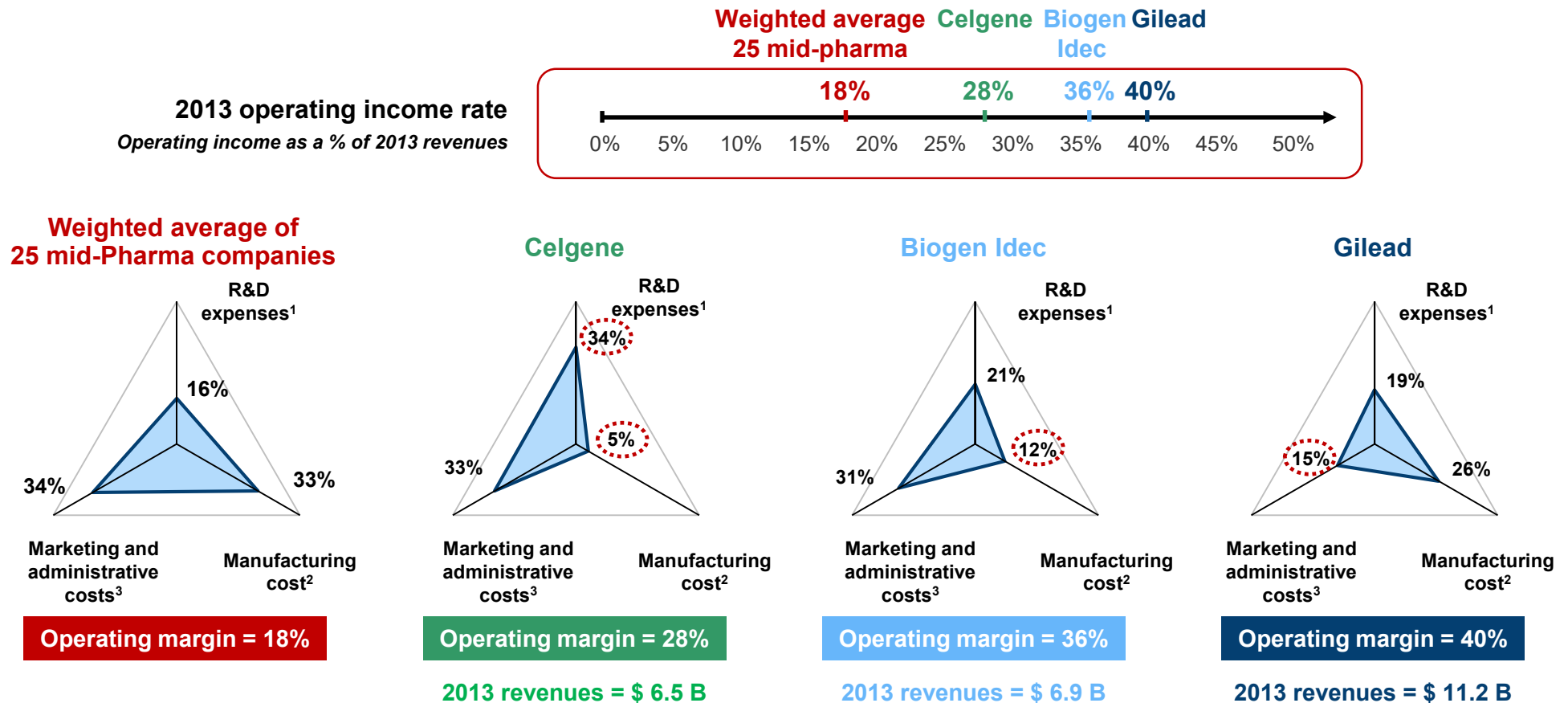
<sup>1</sup> Revenues as at 30 June 2014, 30 June 2013 and 30 June 2012 –

<sup>2</sup> Revenues as at 31 March 2014, 31 March 2013 and 31 March 2012

### 3. Key success factors of high performers

Gilead, Biogen and Celgene are innovative companies with R&D rates higher than the average that have successfully optimized their cost structure through partnerships

#### Gilead, Biogen Idec and Celgene KPIs



Sources: 2013 Annual reports – Smart Pharma Consulting analyses

Noteworthy figures

<sup>1</sup> R&D expenses as a % of 2013 revenues – <sup>2</sup> COGS as a % of 2013 revenues – <sup>3</sup> Marketing and administrative costs as a % of 2013 revenues

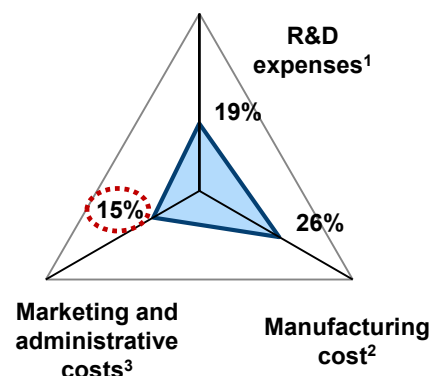
## Gilead's deliberate limited sales forces and outsourced distribution activities can explain the relative low marketing and administrative costs

### Gilead's high performance drivers (1/2)

<b>R&amp;D strategy</b>	<ul style="list-style-type: none"> <li>In 2013, R&amp;D expenses represented 19% of total revenues</li> <li>7 R&amp;D centers worldwide (6 in the US and 1 in Canada)</li> <li>Research programs are focused on 5 domains: infectiology, oncology, respiratory (pulmonary fibrosis and respiratory syncytial virus) and cardiovascular</li> </ul>
<b>Manufacturing processes</b>	<ul style="list-style-type: none"> <li>In 2013, COGS represented 26% of total revenues</li> <li>5 manufacturing facilities (3 in the US, 1 in Canada and 1 in Ireland)</li> </ul>
<b>Commercialization and distribution</b>	<ul style="list-style-type: none"> <li>In 2013, marketing and administrative costs represented only 15% of total revenues</li> <li>Considering the added-value of its medicines, Gilead does not want to oversold its products and deliberately limits its sales forces</li> <li>In 2013, the 3 main wholesalers accounted for ~50% of the worldwide product sales</li> </ul>
<b>Key learnings</b>	<ul style="list-style-type: none"> <li><b>Sales forces are deliberately limited and distribution activities are extensively outsourced</b></li> </ul>

Operating margin = 40%

2013 revenues = \$ 11.2 B



### Key products analysis

Name	Share of 2013 revenues	Indication	Annual price / patient <sup>4</sup> (USD)
Atripla	33%	VIH	10,548
Truvada	28%	VIH	7,177
Viread	9%	VIH and Hepatitis B	5,004

Note: See appendices for more details

Sources: External interviews – Smart Pharma Consulting analyses

<sup>1</sup> R&D expenses as a % of 2013 revenues – <sup>2</sup> COGS as a % of 2013 revenues – <sup>3</sup> Marketing and administrative costs as a % of 2013 revenues – <sup>4</sup> Theoretical annual price for a French patient estimated on the basis of GERS extractions with an assumption of a 100% observance rate

The corner stone of Gilead's strategy seems to be the focus on life-threatening pathologies with unmet medical needs

#### Gilead's high performance drivers (2/2)

##### Strategic drivers

- **Focus R&D and acquisitions on pathologies:**
  - With unmet medical needs
  - Life threatening
    - "The unmet medical needs is the corner stone of our strategy: this is what authorities look to fix a price, and innovation permits a better negotiation and thus better prices"*
- **Willingness to be an expert of the pathology**
  - "We want to be amongst the leaders in infectiology and oncology"*
- **Discovered products that are out of this scope can be out-licensed** (cf. RANEXA, indicated in chronic angina and marketed by Menarini)
- **Externalization of several activities** (some R&D projects realized by CROs, manufacturing by partners, etc.)

##### Organizational drivers

- **High level collaborators:** *"Gilead is always looking for the best candidate for a job, that is why some KOLs, some professors are recruited to integrate the company"*
- **Limited human resources** (~7,000 employees worldwide): *"We are always understaffed, this has a double goal: to make us prioritize activities and to reduce the cost of personal"*
- **Limited sales forces**
- **Focus on science and R&D** *"In Gilead, every collaborator in the marketing, medical, sales know about the ongoing studies, their design, the inclusion criteria... This is very specific of our company"*



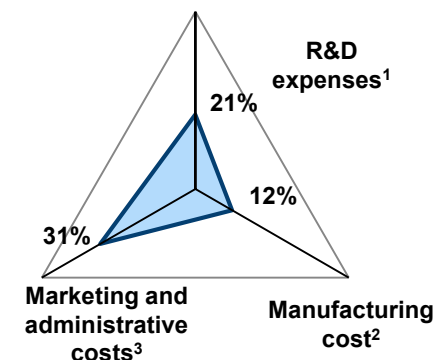
## Biogen Idec's high profitability is notably driven by key partnerships that enable to optimize the manufacturing and distribution processes

### Biogen Idec's high performance drivers (1/2)

<b>R&amp;D strategy</b>	<ul style="list-style-type: none"> <li>In 2013, R&amp;D expenses represented 21% of total revenues</li> <li>One R&amp;D center, located in the US</li> <li>R&amp;D programs concentrated in 5 domains: neurology, respiratory (pulmonary fibrosis), oncology and multiple sclerosis</li> </ul>
<b>Manufacturing processes</b>	<ul style="list-style-type: none"> <li>In 2013, COGS represented 12% of total revenues</li> <li>There are 3 manufacturing facilities: 2 in the US and 1 in Denmark</li> <li>Manufacturing agreements with Roche Group for Rituxan and Gazyva</li> <li>Manufacturing agreement with Alkermes for Fampyra which is licensed from Acorda Therapeutics</li> </ul>
<b>Commercialization and distribution</b>	<ul style="list-style-type: none"> <li>In most countries, marketing efforts are realized through own sales forces</li> <li>Distribution activities are largely performed by wholesale distributors or by strategic partners (e.g. Roche Group for Gazyva)</li> </ul>
<b>Key learnings</b>	<ul style="list-style-type: none"> <li><b>Key agreements signed with strategic partners (Elan, Roche Group, Alkermes)</b></li> </ul>

Operating margin = 40%

2013 revenues = \$ 6.9 B



### Key products analysis

Name	Share of 2013 revenues	Indication	Annual price / patient <sup>4</sup> (USD)
Avonex	43%	Multiple sclerosis	13,212
Tysabri	22%	Multiple sclerosis	27,492

Note: See appendices for more details

Sources: External interviews – Smart Pharma Consulting analyses

<sup>1</sup> R&D expenses as a % of 2013 revenues – <sup>2</sup> COGS as a % of 2013 revenues – <sup>3</sup> Marketing and administrative costs as a % of 2013 revenues – <sup>4</sup> Theoretical annual price for a French patient estimated on the basis of GERS extractions with an assumption of a 100% observance rate

## Biogen Idec's motto seems to be linked with innovation on added-value treatments in secondary care diseases

### Biogen Idec's high performance drivers (2/2)

#### Strategic drivers

- **Concentration on serious diseases with important unmet medical needs**  
*"We are already in 3 therapeutic areas: multiple sclerosis, hemophilia and cancer but we are also involved in the R&D in amyotrophic lateral sclerosis and other orphan diseases"*
- **Expertise in the selected pathologies, especially multiple sclerosis**
- **Innovative research:** *"Our goal is always to develop added-value for patients, either in terms of therapies or at least for their comfort"*  
*"We look for innovation in the pathologies we cover"*
- **... linked with financing capacities:** *"As other biopharma companies, Biogen Idec has financing capacities allowing to invest in innovative R&D projects"*
- **Customer-centricity approach:** *"We try to always have an innovative approach for patients"*
- **Willingness to develop partnerships to improve R&D:** *"I am convinced that partnerships can permit to find innovative molecules"*

#### Organizational drivers

- **Research projects are mainly carried out internally**
- **Customer-centric enterprise:** one of the pioneer of CRM in biopharmaceutical companies
- **Reps with high scientific background** (Area business managers)
- **Limited human resources:** 6,850 employees
- **Limited sales forces** in comparison with big-pharma companies

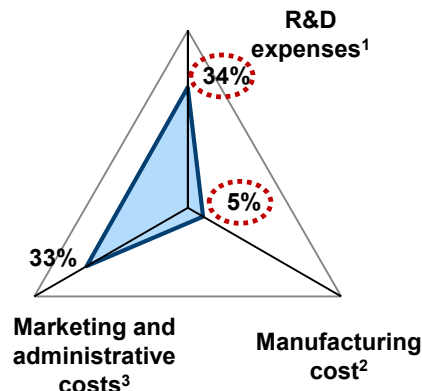
**Celgene's selling prices are much higher than the average of the industry, which allows the group to have a high profitability and to invest in many R&D programs**

#### Celgene's high performance drivers (1/2)

<b>R&amp;D strategy</b>	<ul style="list-style-type: none"> <li>5 R&amp;D centers: 4 in the US and 1 in Spain</li> <li>In 2013, R&amp;D expenses were up to 34% of total revenues and research scientists represented ~40% of total headcount</li> <li>R&amp;D portfolio is focused on: hematology, oncology, inflammation, anemia and cellular therapies</li> </ul>
<b>Manufacturing processes</b>	<ul style="list-style-type: none"> <li>3 manufacturing facilities: 1 in the US and 2 in Switzerland</li> <li>In 2013, COGS represented only 5% of total revenues, notably due to the selling prices of Celgene's key products, which is much higher than the average of the industry (including Gilead and Biogen Idec)</li> </ul>
<b>Commercialization and distribution</b>	<ul style="list-style-type: none"> <li>Brands are promoted globally through Celgene's commercial organization</li> <li>Distribution is generally handled by commonly used channels in local markets</li> </ul>
<b>Key learnings</b>	<ul style="list-style-type: none"> <li><b>R&amp;D efforts are particularly high compared with the average of the industry</b></li> <li><b>Profitability is driven by high sales prices</b></li> </ul>

**Operating margin = 40%**

**2013 revenues = \$ 6.5 B**



#### Key products analysis

Name	Share of 2013 revenues	Indication	Annual price / patient <sup>4</sup> (USD)
Revlimid	66%	Multiple myeloma	119,422
Vidaza	12%	Multiple myeloma & leukaemia	138,903

*Note: See appendices for more details*

Sources: External interviews – Smart Pharma Consulting analyses

<sup>1</sup> R&D expenses as a % of 2013 revenues – <sup>2</sup> COGS as a % of 2013 revenues – <sup>3</sup> Marketing and administrative costs as a % of 2013 revenues – <sup>4</sup> Theoretical annual price for a French patient estimated on the basis of GERS extractions with an assumption of a 100% observance rate

**R&D appears to be the pillar of the Celgene's strategy: it makes it possible to develop innovative medicines for particularly serious diseases**

#### Celgene's high performance drivers (2/2)

##### Strategic drivers

- Intense research activity:
  - During the past 5 years, the company invested over 40% of its revenues in R&D. This figure is more than twice as much as the average in the pharma sector
  - With \$ 6.9 B in cash and marketable securities as of 30 September 2014, the company has the ability to continue to invest
- Thanks to its efficacy for treating multiple myeloma, Revlimid (Celgene's main key product) sees a growth in sales volume, not price dependent (despite the high price of the treatment)

##### Organizational drivers

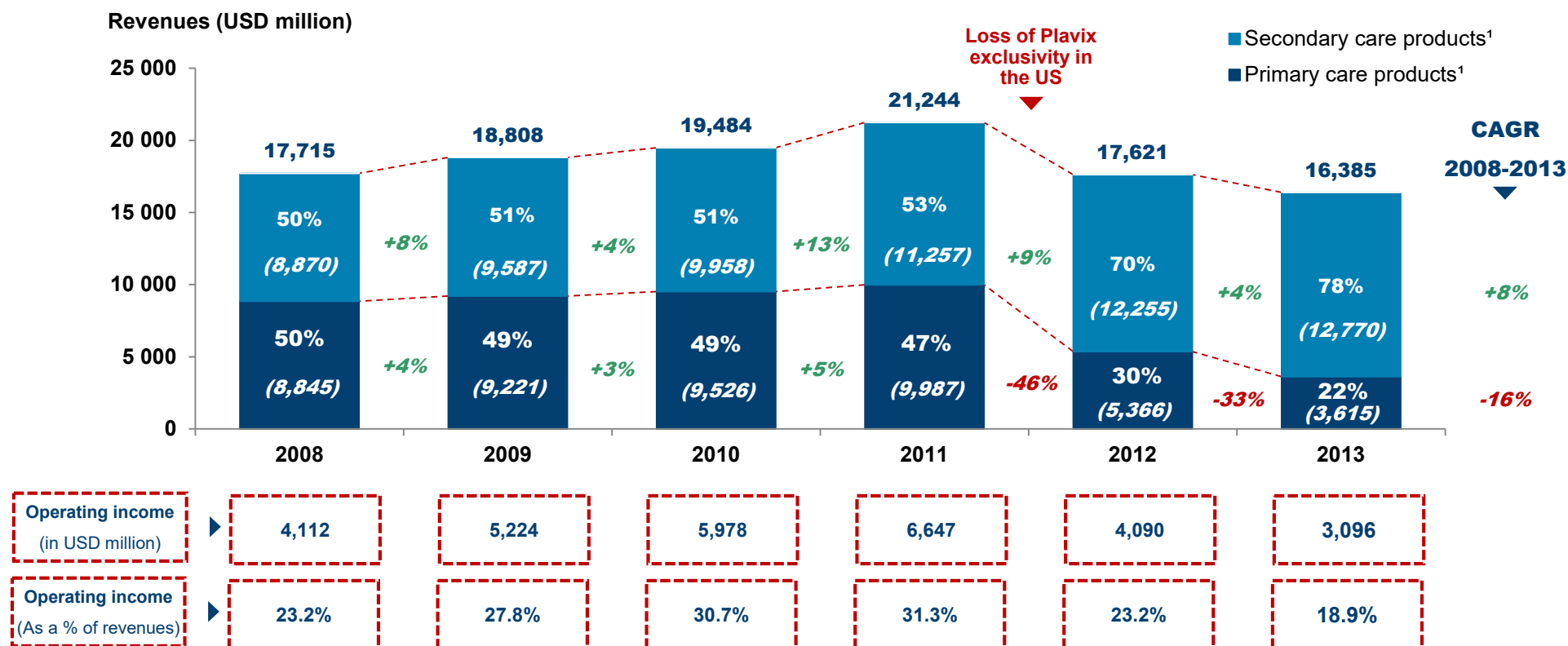
- High level of entrepreneurial spirit:
  - *"Celgene's employees are passionate about what they do"*
  - People are encouraged to take responsibility for their personal development
- Learning and development culture
- Team spirit...
- ...strong agility
- Focus on science and R&D

Sources: Eternal interviews – «3 secrets to Celgene's future success from Q3 results », Keith Speights, October 24, 2013 – "5 things Celgene Corporation's Management wants you to know", Sean Williams, August 11, 2014 – Insights Discovery program presentation – Smart Pharma Consulting analyses

## 4. How to move from a pharma to a biopharma company – BMS

BMS's profitability decline in 2012 was mainly due to the loss of exclusivity of Plavix, its main contributing brand

### BMS 2008 – 2013 performance & business split



Sources: Annual reports - Smart Pharma Consulting analyses

<sup>1</sup> Mature products and all other revenues, that represent \$ 2,765 M in 2013, \$ 2,757 M in 2012, \$ 2,950 M in 2011, \$ 3,053 M in 2010, \$ 3,536 in 2009 and \$ 3,498 M in 2008, have been equally allocated between "primary care" and "secondary care" categories

## 4. How to move from a pharma to a biopharma company – BMS

**BMS became a biopharma company through acquisitions and partnerships, by divesting some TAs, some regions and by introducing innovative processes**

### How did BMS move to a biopharma company?

#### Acquisitions & partnerships<sup>1</sup>

- 2008: Exclusive alliance with **KAI Pharmaceuticals Inc** to develop and commercialize KAI-9803 for cardiovascular disease
- 2008: Global collaboration with the biotech **Exelixis** for new diabetes and anti-inflammatory therapies
- 2009: Acquisition of **Medarex**, for \$ 2.4 B (ipilimumab rights, human antibody development system platform)
- 2010: Licensing agreement with **Oncolys bioPharma** for Investigational HIV
- 2012: Acquisition of **Inhibitex** for \$2.5 B, to compete in HCV
- 2013: Partnership with Simcere for Orencia in China
- 2014: acquisition of iPierian for its anti-Tau programme for rare brain disorders

#### Divestments

- 2008: **sale of BMS Medical Imaging** for \$ 525 M
- 2008: Sales of BMS portfolio and plant in Egypt to GSK
- 2009: BMS generics products in Lebanon, Jordan, Syria, Libya and Yemen sold to GSK
- 2011: BMS sell products' rights in Sri Lanka to GSK
- 2014: **divestment of diabetes business to Astra Zeneca**

#### Productivity transformation

- 2008: Productivity transformation Initiative, expected to result on \$ 2.5 B in annual productivity savings
- *“An important productivity transformation initiative has been expanded and led to reset the cost base while fundamentally changing the way work is done to be quicker, more agile and more profitable. This strategy has been accompanied with organizational and cultural changes. The number of employees decreased from 55,000 to 22,000 worldwide and employees have been given more and more responsibilities”*

#### Innovative processes

- **Entrepreneurship approach**  
*“Our philosophy is to give responsibilities to collaborators in order to increase entrepreneurship and corporate agility. This supposes to develop the right to make mistakes. This kind of process takes time to implement”*
- **Customer centricity approach**  
*“We always try to think there is a patient behind our products”*
- **Trigger-marketing approach**

## 5. A company in the company – Sanofi Diabetes

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Sanofi created a fully-integrated diabetes franchise to be more responsive and to become more competitive in a strategic therapeutic area dominated by Novo Nordisk

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### Why did Sanofi create a fully-integrated diabetes franchise?

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#### Reason #1

- Sanofi has defined Diabetes as one of the **most strategic therapeutic** areas within their Rx-driven business

#### Reason #2

- Ensure that the diabetes franchise will **get appropriate** human and financial **resources**

#### Reason #3

- Build a **strongest image** in diabetes care, as Novo Nordisk managed to do it vis-à-vis investors, HCPs, potential R&D partners

#### Reason #4

- **Increase efficiency** of its diabetes business by Reducing complexity and strengthening dedication and focus



## 5. A company in the company – Sanofi Diabetes

The creation of a fully-integrated diabetes franchise seems to have improve Sanofi agility and competitiveness vs. smaller competitors such as Novo Nordisk

### Pros & Cons of a fully-integrated diabetes franchise

#### Pros

- **Higher agility (less hierarchy; etc. )...**  
*"We have the capacity to mobilize people more rapidly than other business units"*  
*"Sometimes a company is so big, it becomes less manageable and agile, that is why the CEO has decided to create our business unit"*
- **... leading to higher effectiveness (less bureaucracy, etc.)**  
*"A smaller size allow us to reach more easily our ambition"*
- **Fully integrated resources (R&D, medical, marketing, sales, etc.)**
- **Higher motivation due to more specific objectives**
- **Possibility to develop own processes**  
*"We have our own processes but they are still linked with the corporate processes"*
- **Perception of expertise by stakeholders**  
*"We have treatments and devices for all types of diabetic patients, from early age to severe diabetes"*

#### Cons

- **Less interactions with colleagues**  
*"We tend to have more interactions with people working in other countries than with the ones that work in the same building but in an other unit"*
- **Relative dependence to the corporate strategy**  
*"We have to share the corporate culture and many processes like the IT platform"*  
  
*"We look independent but we are much less than Genzyme, Sanofi Pasteur or "the dengue company" that Sanofi recently created"*
- **Relative dependence to the corporate funding**

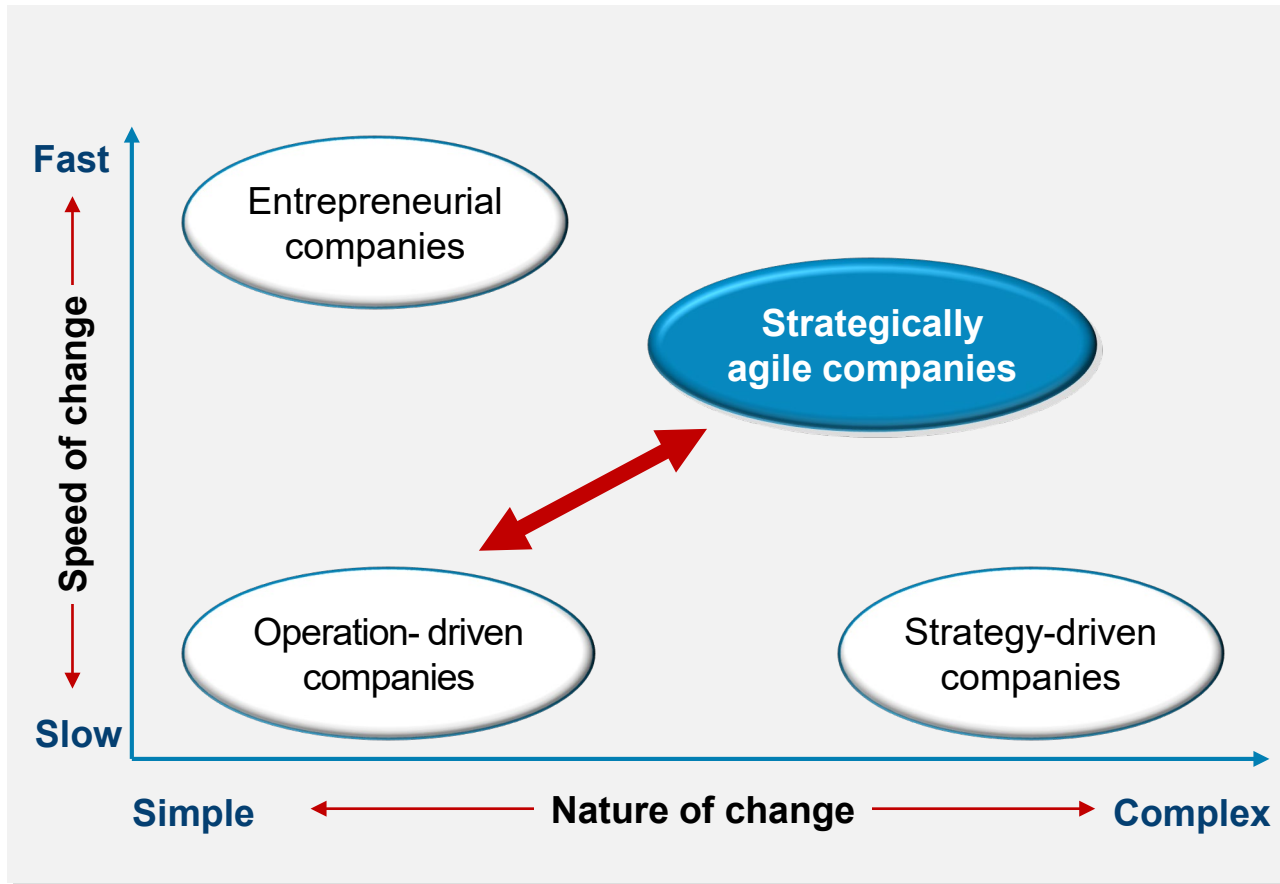
Sources: External interviews – Smart Pharma Consulting analyses



## 6. Key learnings

To keep their momentum, fast growing companies which operate in markets where changes become faster and more complex, need to be strategically agile

### Strategic agility matrix



#### Examples of change drivers

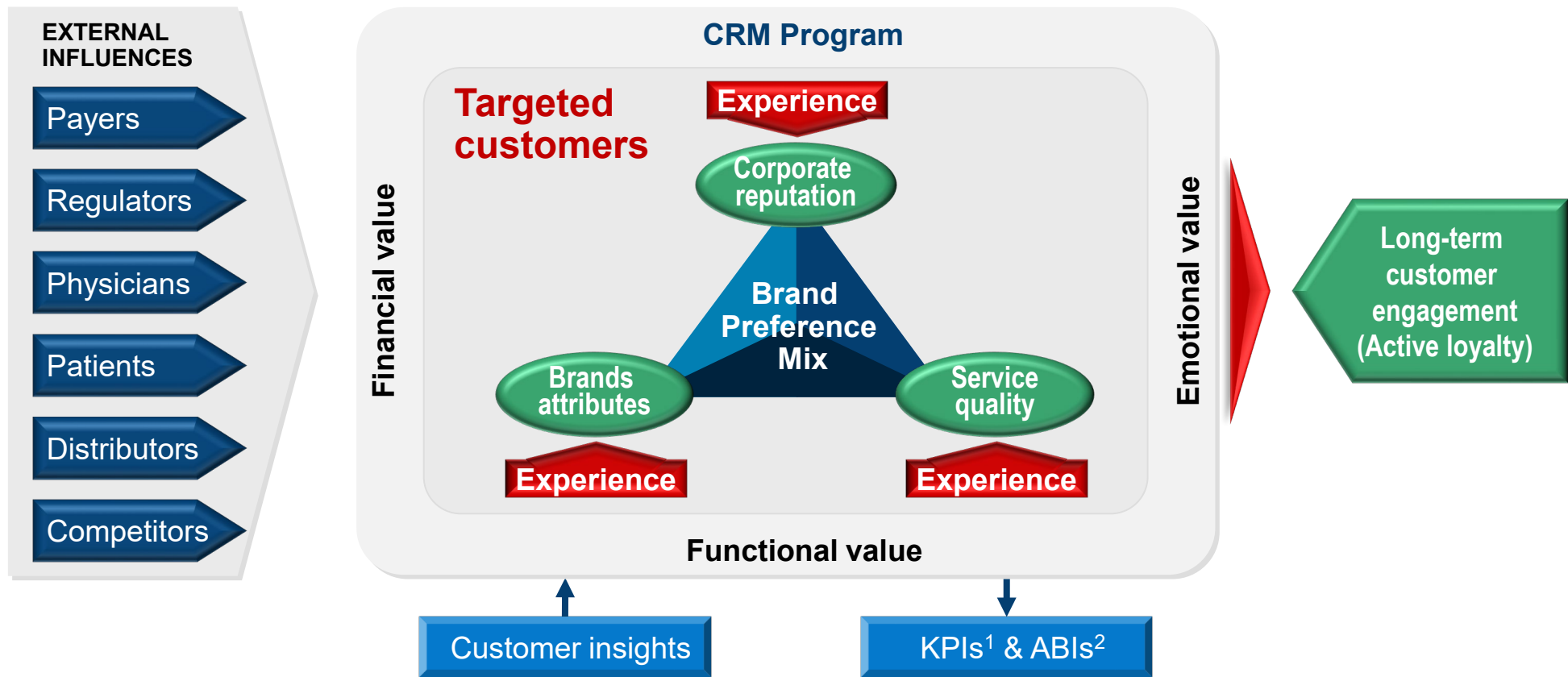
- External drivers:
  - Modification of healthcare regulations
  - Authoritative price cuts
  - Generics entry
  - Entry of innovative competitors
  - New therapeutic guidelines
  - New entrants
  - New technologies (e.g. Internet)
  - New customer behavior
  - Etc.
- Internal drivers:
  - New product launch
  - New indication
  - Modification of structures
  - Recruitment of new competencies
  - International development
  - New process introduction
  - Etc.

Sources: Adapted from Y. Doz & M. Kosonen, Smart Pharma Consulting analyses

## 6. Key learnings

To be effective and efficient, customer-centric strategies should be supported by an appropriate thinking process, including customer insights and adequate monitoring

### Integrated customer-centricity strategy in the pharma sector



Sources: Smart Pharma Consulting model

<sup>1</sup> Key performance indicators – <sup>2</sup> Activity-based indicators

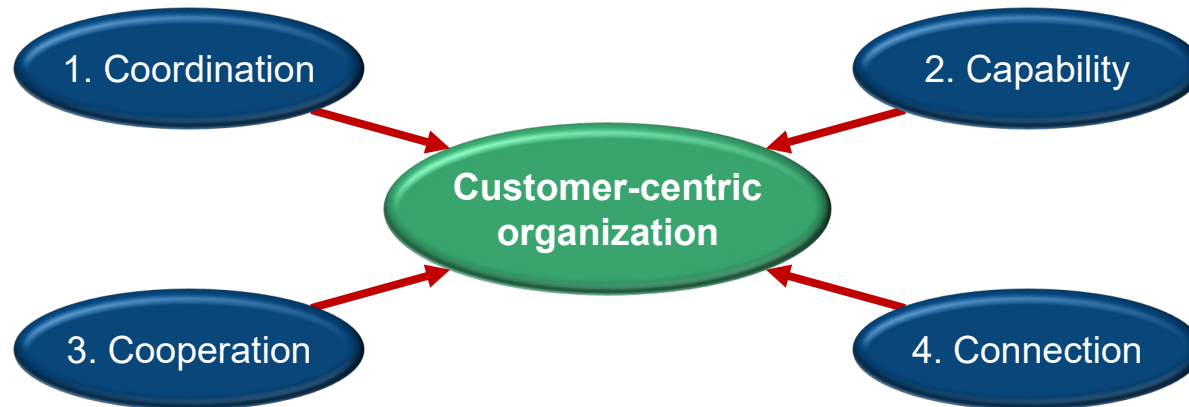
## 6. Key learnings

**High market sensitivity, simple and short processes, cross-departments coordination and cooperation to better serve customers will contribute to sustain strategic agility**

### Customer-centricity organization: The 4 Cs

- Customer-focused organization (silos around customers vs. brands)
- Knowledge- and experience-sharing
- Harmonization of activities

- Skills to develop and deliver high value solutions
- Ability to explore and discover customer insights (deep knowledge of their needs, wants, behaviors)
- Motivated and empowered collaborators



- Project teams including members from various departments centered around customers
- Shared customer database
- Introduction of metrics to foster cultural change

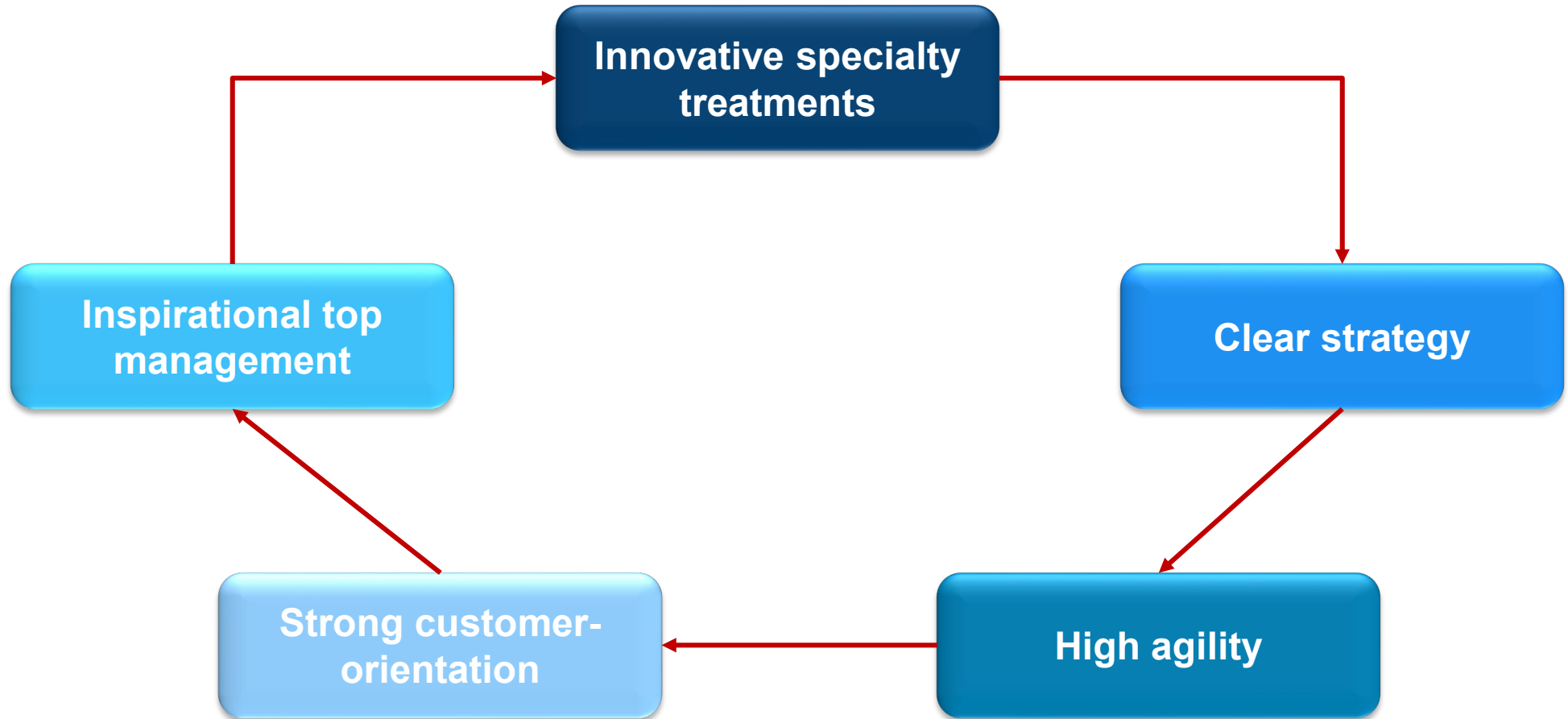
- Partnership with external players to propose unique and highly valued offerings to customers

Sources: Adapted from R. Gulati (HBR 2007), Smart Pharma Consulting analyses

## 6. Key learnings

The most profitable pharma companies have in common to be focused on innovative specialty treatments, to be customer-oriented and to benefit from with strong values

### Key success factors – Main themes



Sources: External interviews – Smart Pharma Consulting analyses

## 6. Key learnings

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**Fast growing companies, better than competition, offer their customers unique experiences with their products and services which induce lasting preference**

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### Takeaways

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- To increase their profitability, pharma companies should:
  - Rely on the leadership of a management team with solid credibility and strong communication skills that can embody positive and noble values
  - Define a strategic organization ensuring **agility** and **customer-centricity**
  - Set **ambitious** objectives, such as becoming the expert of a pathology
  - Design an **organization** to **implement** effectively and efficiently such a **fast growing strategy**:
    - Put the **collaborators** (internal customers) **at the center** of the system
    - Institute a **sense of urgency**, especially vis-à-vis customers
    - Build a **network of market sensors** to maintain a competitive edge
    - **Shorten** and **simplify business-driven processes**
    - **Automate**, **outsource** or even have the “courage” to **suppress control-driven processes** when they do not create significant value
  - Focus on **innovative secondary care treatments**, with **unmet medical needs**

*“Every decision – either strategic or organizational – should contribute to create customer preference”*

Among the top 50 pharma companies, Smart Pharma Consulting has identified 11 companies exhibiting a double-digit annual growth rate over the 2011-2013 period

### Top 50 pharma companies worldwide - Revenues

Company Name	Revenues (USD million*)			CAGR 2011-2013
	2013	2012	2011	
Novartis	58,831	57,561	59,375	-0.5%
Johnson & Johnson <sup>1</sup>	56,615	52,777	50,147	6.3%
Pfizer	51,584	54,657	61,035	-8.1%
Roche	45,058	43,975	40,888	5.0%
Sanofi	44,235	47,756	46,562	-2.5%
Merck & Co	44,033	47,267	48,047	-4.3%
GlaxoSmithKline	43,822	43,786	43,756	0.1%
Fresenius	27,002	25,620	21,730	11.5%
AstraZeneca	25,711	27,973	33,591	-12.5%
Bayer <sup>2</sup>	25,134	24,709	22,803	5.0%
Eli Lilly	23,672	23,391	24,286	-1.3%
Abbott Laboratories	21,848	21,494	21,407	1.0%
Teva	20,314	20,317	18,312	5.3%
Boehringer Ingelheim	20,225	21,542	19,295	2.4%
AbbVie	18,790	18,380	17,444	3.8%
Amgen	18,676	17,265	15,582	9.5%
Takeda <sup>3</sup>	16,891	15,547	15,067	5.9%
BMS	16,385	17,621	21,244	-12.2%
Baxter International	15,268	14,345	13,893	4.8%
Novo Nordisk	15,000	14,010	11,900	12.3%
Merck KGaA	14,736	14,839	13,649	3.9%
Otsuka Holdings <sup>3</sup>	14,506	12,162	11,528	12.2%
Astellas Pharma <sup>3</sup>	11,382	9,804	9,679	8.4%
Gilead Sciences	11,202	9,703	8,384	15.6%
Daiichi Sankyo <sup>3</sup>	11,166	9,932	9,373	9.1%

Company Name	Revenues (USD million*)			CAGR 2011-2013
	2013	2012	2011	
Actavis	8,678	5,915	4,584	37.6%
Biogen Idec	6,932	5,516	5,049	17.2%
Mylan	6,910	6,796	6,130	6.2%
Celgene	6,494	5,507	4,843	15.8%
Allergan	6,301	5,646	5,216	9.9%
Eisai <sup>3</sup>	6,026	5,730	6,470	-3.5%
Valeant	5,769	3,481	2,427	54.2%
Servier <sup>3</sup>	~5,600			
CSL <sup>4</sup>	5,525	5,129	4,624	9.3%
Shire	4,933	4,528	4,158	8.9%
UCB	4,540	4,598	4,311	2.6%
Menarini	~4,400			
Chugai	4,341	3,961	3,827	6.5%
Mitsubishi Tanabe <sup>3</sup>	4,121	4,185	4,089	0.4%
Hospira	4,003	4,092	4,057	-0.7%
Dainippon Sumitomo <sup>3</sup>	3,871	3,472	3,499	5.2%
Forest Laboratories <sup>3</sup>	3,647	3,094	4,548	-10.5%
Grifols	3,642	3,481	2,384	23.6%
Kyowa Hakko Kirin	3,490	3,414	3,522	-0.5%
Aspen Pharmacare <sup>4</sup>	2,844	1,860	1,470	39.1%
Sun Pharma <sup>3</sup>	2,756	1,937	1,407	40.0%
Lundbeck	2,716	2,635	2,850	-2.4%
STADA Arzneimittel	2,675	2,440	2,278	8.4%
Purdue Pharma	~2,200			
Ranbaxy Laboratories <sup>5</sup>	1,820	2,156	1,792	0.8%

Big Pharma companies

Mid Pharma companies

Companies for which overall financial statements are not available

\* Restated at constant rates currency using the 2013 Federal Reserve average exchange rates

Sources: Annual reports except for Servier, Menarini and Purdue Pharma for which information comes from their Web sites, Smart Pharma Consulting analyses

<sup>1</sup> Excluding the consumer segment - <sup>2</sup> Excluding crop science and material science segments - <sup>3</sup> Revenues as at 31 March 2014, 31 March 2013 and 31 March 2012 - <sup>4</sup> Revenues as at 30 June 2014, 30 June 2013 and 30 June 2012 - <sup>5</sup> Revenues as at 31 March 2014 (pro-rated on a 12 months basis) and as at 31 December 2012 and 31 December 2011

Among the Mid Pharma companies, with a double-digit annual growth rate, Gilead, Biogen and Celgene are the most profitable

### Top 50 pharma companies worldwide – Operating income

Company Name	Operating Income (USD million*)						CAGR 2011- 2013
	2013	% of revenues	2012	% of revenues	2011	% of revenues	
Pfizer	15,716	30.5%	11,242	20.6%	11,481	18.8%	17.0%
Roche	15,179	33.7%	13,092	29.8%	12,470	30.5%	10.3%
GSK	10,993	25.1%	11,418	26.1%	12,097	27.6%	(4.7)%
Novartis	10,910	18.5%	11,511	20.0%	10,998	18.5%	(0.4)%
Sanofi	6,781	15.3%	8,416	17.6%	7,612	16.3%	(5.6)%
Merck & Co	5,956	13.5%	9,213	19.5%	7,670	16.0%	(11.9)%
Eli Lilly	5,929	25.0%	5,482	23.4%	5,456	22.5%	4.2%
Amgen	5,867	31.4%	5,577	32.3%	4,312	27.7%	16.6%
AbbVie	5,664	30.1%	5,817	31.6%	3,620	20.8%	25.1%
Novo Nordisk	5,607	37.4%	5,247	37.5%	3,983	33.5%	18.6%
Bayer <sup>2</sup>	4,330	17.2%	2,929	11.9%	4,238	18.6%	1.1%
Fresenius	3,972	14.7%	3,962	15.5%	3,404	15.7%	8.0%
AstraZeneca	3,712	14.4%	8,148	29.1%	12,795	38.1%	(46.1)%
BMS	3,096	18.9%	4,090	23.2%	6,647	31.3%	(12.4)%
Boehringer	2,808	13.9%	2,461	11.4%	3,018	15.6%	(3.5)%
Baxter	2,677	17.5%	2,976	20.7%	2,863	20.6%	(3.3)%
Abbott	2,629	12.0%	1,894	8.8%	1,629	7.6%	27.0%
Merck KGaA	2,138	14.5%	1,280	8.6%	1,503	11.0%	19.3%
Otsuka <sup>3</sup>	1,984	13.7%	1,694	13.9%	1,484	12.9%	15.6%
Teva	1,649	8.1%	2,205	10.9%	3,109	17.0%	(27.2)%
Takeda <sup>3</sup>	1,391	8.2%	649	4.2%	2,646	17.6%	(27.5)%
J&J <sup>1</sup>							
Gilead	4,524	40.4%	4,010	41.3%	3,790	45.2%	9.3%
Biogen Idec	2,516	36.3%	1,856	33.6%	1,725	34.2%	20.8%
Celgene	1,809	27.9%	1,746	31.7%	1,443	29.8%	12.0%

Company Name	Operating Income (USD million*)						CAGR 2011- 2013
	2013	% of revenues	2012	% of revenues	2011	% of revenues	
Allergan	1,809	28.7%	1,611	28.5%	1,375	26.4%	14.7%
Shire	1,733	35.1%	1,045	23.1%	1,136	27.3%	23.5%
CSL <sup>4</sup>	1,658	30.0%	1,509	29.4%	1,255	27.1%	14.9%
Sun Pharma <sup>3</sup>	1,184	43.0%	820	42.3%	561	39.9%	45.3%
Astellas <sup>3</sup>	1,152	10.1%	1,203	12.3%	1,313	13.6%	(6.3)%
Mylan	1,136	16.4%	1,109	16.3%	1,005	16.4%	6.3%
Daiichi Sankyo <sup>3</sup>	1,114	10.0%	986	9.9%	981	10.5%	6.6%
Grifols	978	26.8%	877	25.2%	371	15.5%	62.4%
Chugai	807	18.6%	765	19.3%	640	16.7%	12.3%
Aspen <sup>4</sup>	715	25.2%	486	26.1%	380	25.8%	37.3%
Eisai <sup>3</sup>	663	11.0%	802	14.0%	956	14.8%	(16.7)%
Mitsubishi Tanabe <sup>3</sup>	590	14.3%	689	16.5%	765	18.7%	(12.1)%
UCB	535	11.8%	517	11.2%	457	10.6%	8.2%
Kyowa Hakko Kirin	530	15.2%	542	15.9%	478	13.6%	5.4%
Dainippon <sup>3</sup>	421	10.9%	250	7.2%	204	5.8%	43.7%
STADA	335	12.5%	268	11.0%	159	7.0%	44.9%
Lundbeck	285	10.5%	307	11.7%	604	21.2%	(31.4)%
Forest Labo. <sup>3</sup>	112	3.1%	(76)	(2.5)%	1,200	26.4%	(69.4)%
Ranbaxy <sup>5</sup>	92	5.1%	300	13.9%	281	15.7%	(42.7)%
Hospira	17	0.4%	59	1.4%	57	1.4%	(45.4)%
Valeant	(410)	(7.1)%	80	2.3%	300	12.4%	(73.3)% <sup>6</sup>
Actavis	(423)	(4.9)%	316	5.3%	523	11.4%	(40.0)% <sup>6</sup>
Servier							
Menarini							
Purdue Pharma							

Big Pharma companies

Mid Pharma companies

Companies for which overall financial statements are not available

\* Restated at constant rates currency using the 2013 Federal Reserve average exchange rates

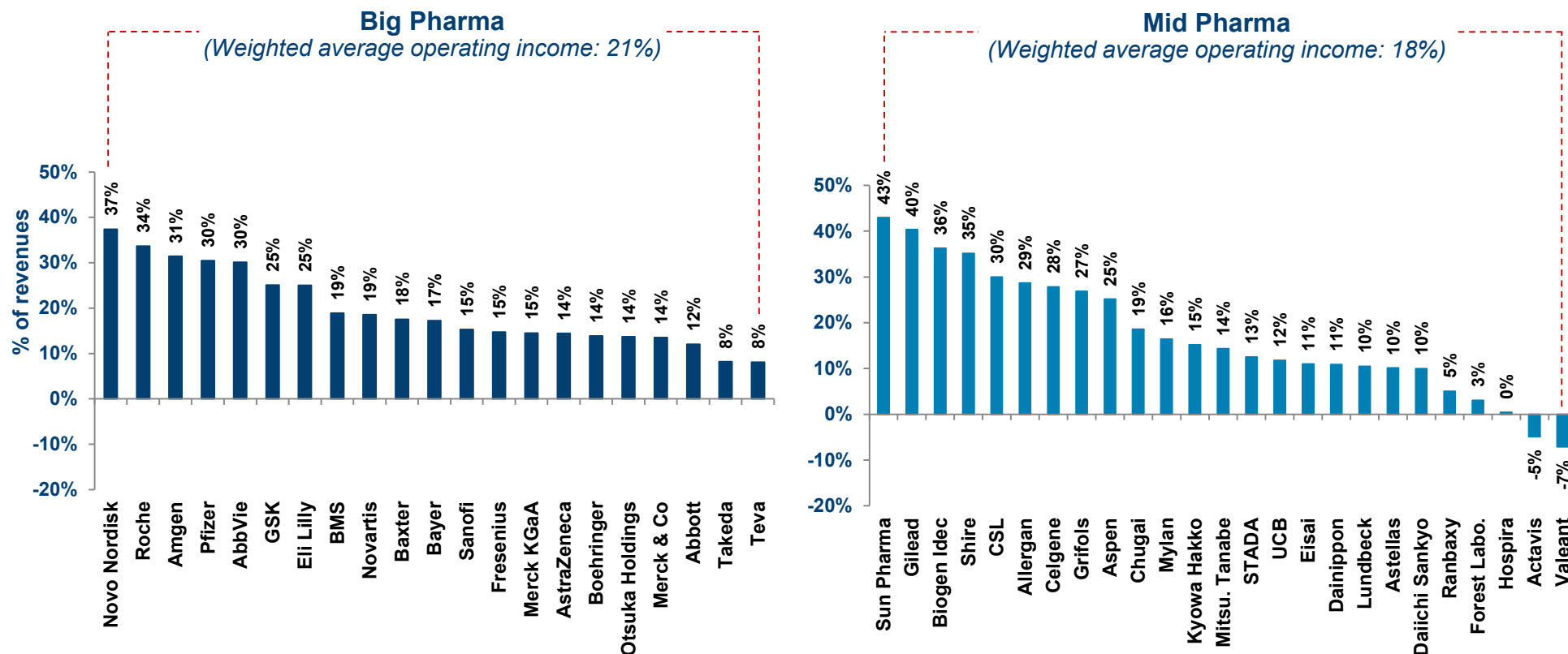
Sources: Annual reports - Smart Pharma Consulting analyses

<sup>1</sup> Excluding the consumer segment - <sup>2</sup> Excluding crop science and material science segments - <sup>3</sup> Revenues as at 31 March 2014, 31 March 2013 and 31 March 2012 - <sup>4</sup> Revenues as at 30 June 2014, 30 June 2013 and 30 June 2012 - <sup>5</sup> Revenues as at 31 March 2014 (pro-rated on a 12 months basis) and as at 31 December 2012 and 31 December 2011 - <sup>6</sup> Changes estimated for the period 2011 - 2012

The average operating margin is lower and more heterogeneous for Mid Pharma companies compared to Big Pharma companies

### Selected high performing mid-pharma companies – Operating income as a % of revenues (2013)

#### Comparison of the top 50 pharma companies



Sources: Annual reports - Smart Pharma Consulting analyses





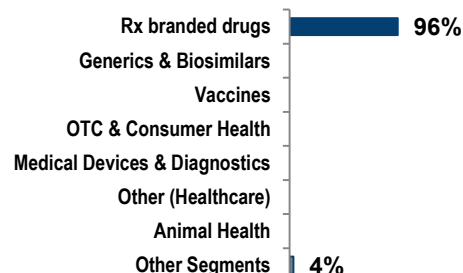
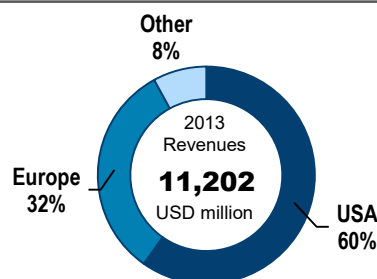
## Key Financial Data

USD million	2013	2012	2011
Revenues	11,202	9,703	8,384
Net Sales	10,804	9,398	8,102
Operating Profit	4,524	4,010	3,790
Operating profit margin	40.4%	41.3%	45.2%
R&D expenses	2,120	1,760	1,229
% of revenues	18.9%	18.1%	14.7%

## Key Products

	Sales (USD million)	YoY % Change	Share of revenues
1. <b>ATRIPLA</b> <i>Antiretroviral agent (VIH)</i>	3,648	2%	33%
2. <b>TRUVADA</b> <i>Antiretroviral agent (VIH)</i>	3,136	-1%	28%
3. <b>VIREAD</b> <i>Antiretroviral agent (VIH and Hepatitis B)</i>	959	13%	9%
4. <b>COMPLERA/EVIPLERA</b> <i>Antiretroviral agent (VIH)</i>	809	236%	7%
5. <b>STRIBILD</b> <i>Antiretroviral agent (VIH)</i>	539	937%	5%
6. <b>LETAIRIS</b> <i>Antihypertensive agent (pulmonary arterial hypertension)</i>	520	27%	5%
7. <b>RANEXA</b> <i>Antianginal agent (chest pain)</i>	449	20%	4%

## Key Segments



## Pipeline (as of October 2014)

Number of compounds at each stage	Phase I	Phase II	Phase III	Filing
<b>Oncology</b>	1	4	3	
<b>Virology</b> Mostly HBV and HCV	3	6	2	1
HIV/AIDS		1	1	2
<b>Cardiovascular</b>	5	1	1	
<b>Respiratory</b> Pulmonary Fibrosis and Respiratory Syncytial Virus		2		

## Strategic Priorities

- Continued progression of the product pipeline
- Continued uptake of commercial products
- Build-out and expansion of international commercial infrastructure, particularly in Europe and Asia, to support the Sovaldi launches and increase marketing and sales efforts related to the anticipated launch of Gilead's first oncology product, idelalisib

## Deal Strategy

- In 2011:
  - Entered in agreements with Janssen, Boehringer Ingelheim, and BMS for different HIV products
  - Acquisition of Pharmasset (oral therapeutics for the treatment of HCV: Sovaldi) for USD 11.1 B
  - Acquisition of Arresto (biotechnology) for USD 225 M plus potential future payments
  - Acquisition of Callistoga (biotechnology) for USD 375 M plus potential future payments
- In 2012:
  - Following Pharmasset acquisition, Gilead moved quickly to expand clinical testing of hepatitis C therapies and establish a leadership position in the drug development for chronic hepatitis C virus (HCV) infection
- In 2013:
  - With the recent completion of the YM BioSciences acquisition (for USD 510 M), the selective JAK inhibitor momelotinib (GS-0387/CYT-387) was added to a growing oncology and inflammation pipeline
  - Momelotinib is an investigational JAK inhibitor that has shown promise for the treatment of myelofibrosis, a blood disorder. This molecule was added to Gilead's development pipeline through the acquisition of YM BioSciences

## 7. Appendices: Performance & Organization of most successful pharma companies **Biogen Idec**



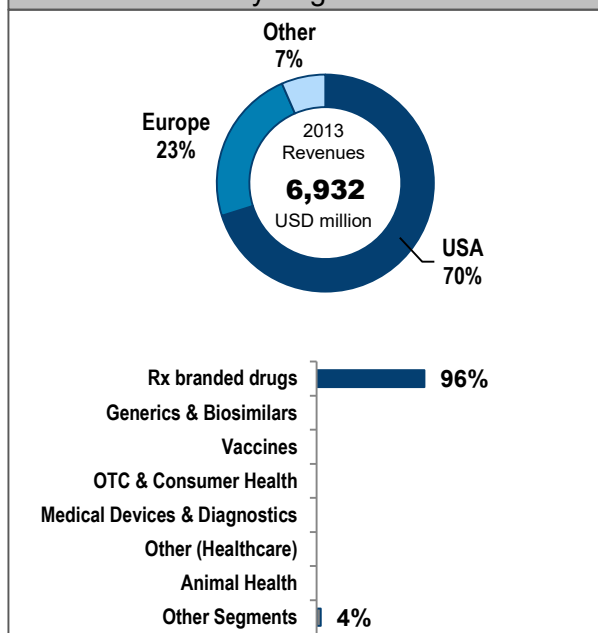
### Key Financial Data

USD million	2013	2012	2011
Revenues	<b>6,932</b>	<b>5,516</b>	<b>5,049</b>
Net Sales	6,668	5,304	4,833
Operating Profit	2,516	1,856	1,725
Operating profit margin	36.3%	33.6%	34.2%
R&D expenses	1,444	1,335	1,220
% of revenues	20.8%	24.2%	24.2%

### Key Products

	Sales (USD million)	YoY % Change	Share of revenues
<b>1. AVONEX</b> <i>Immunological agent (multiple sclerosis)</i>	3,005	3%	43%
<b>2. TYSABRI</b> <i>Immunological agent (multiple sclerosis)</i>	1,526	34%	22%
<b>3. RITUXAN/MABTHERA</b> <i>Antineoplastic (non-Hodgkin cancer)</i>	1,126	-1%	16%
<b>4. TECFIDERA</b> <i>Psychoanaleptic (multiple sclerosis)</i>	876	N/A	13%
<b>5. FAMPYRA</b> <i>Psychoanaleptic (multiple sclerosis)</i>	74	29%	1%
<b>6. FUMADERM</b> <i>Therapy for psoriasis (multiple sclerosis)</i>	60	1%	1%

### Key Segments



### Pipeline (as of October 2014)

Number of compounds at each stage	Phase I	Phase II	Phase III	Filing
<b>Neurology</b>				
Lupus/Alzheimer/ Neuropathic pain	3	3	1	
<b>Respiratory</b>				
Pulmonary Fibrosis		1		
<b>Oncology</b>				
			3 (MAb)	
<b>Inflammation</b>				
Multiple Sclerosis		1	2 (MAb)	

### Strategic Priorities

- Near-term growth prospects driven by Tecfidera, that is expected to represent the largest contributor to the overall revenue growth in 2014
- Entering into a long-term growth driven by multiple potential new product launches
- Building an innovative pipeline to sustain longer-term value creation

### Deal Strategy

- In 2011:
  - Worldwide collaboration with Portola Pharmaceuticals
- In 2012:
  - Joint venture with Samsung, creating Samsung Bioepis, to develop, manufacture and market biosimilar pharmaceuticals
  - Acquisition of Stromedix, a privately held company involved in the discovery of antibodies designed to treat fibrosis disorders
- In 2013:
  - Acquisition of the full ownership of Tysabri from Elan
  - Platform agreement with Adimab
  - Research collaboration with Isis: discovery level research, development and commercialization of antisense and other therapeutics for the treatment of neurological disorders
  - Research and license agreement with Proteostasis
- In 2014:
  - Collaboration agreement with Sangamo focused on the development of therapeutics for hemoglobinopathies
  - Collaboration agreement with Eisai to develop and commercialize Alzheimer's disease treatment

Sources: 2013 Annual report, Smart Pharma Consulting analysis



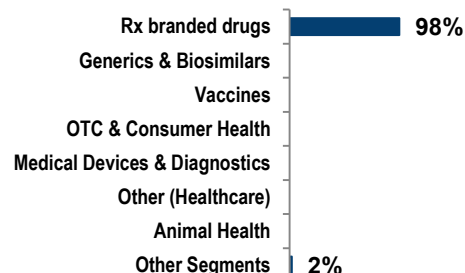
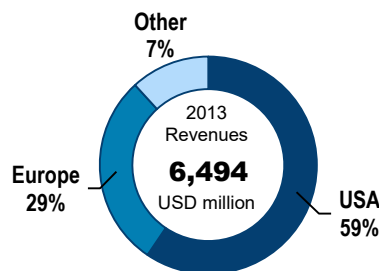
## Key Financial Data

USD million	2013	2012	2011
Revenues	<b>6,494</b>	<b>5,507</b>	<b>4,843</b>
Net Sales	6,362	5,386	4,700
Operating Profit	1,809	1,746	1,443
Operating profit margin	27.9%	31.7%	29.8%
R&D expenses	2,226	1,724	1,600
% of revenues	34.3%	31.3%	33.0%

## Key Products

	Sales (USD million)	YoY % Change	Share of revenues
<b>1. REVLIMID<sup>1</sup></b> <i>Immunological agent (multiple myeloma)</i>	4,280	14%	66%
<b>2. VIDAZA<sup>1</sup></b> <i>Antineoplastic agent (leukemia and myeloma)</i>	803	-2%	12%
<b>3. ABRAXANE</b> <i>Antineoplastic agent (breast and pancreatic cancer)</i>	649	52%	10%
<b>4. POMALYST/IMNOVID<sup>1</sup></b> <i>Leprostatic agent (multiple myeloma)</i>	305	2545%	5%
<b>5. THALOMID</b> <i>Leprostatic agent (multiple myeloma)</i>	244	-19%	4%

## Key Segments



## Pipeline (as of October 2014)

Number of compounds at each stage	Phase I	Phase II	Phase III	Filing
<b>Hematology</b> Lymphoma, MDS, AML, CLL <sup>2</sup>	6	6	10	1
<b>Oncology</b> Breast, Pancreatic, Gastric	4		2	1
<b>Inflammation</b> Arthritis, Dermatitis, Psoriasis, Crohn's disease	6	5	1	2
<b>Anemia<sup>3</sup></b>		6		
<b>Cellular Therapies</b> Wound, Crohn's disease	2			2

## Strategic Priorities

- Delivery of outstanding financial results while investing for future growth
- Establishment of global commercial operations
- R&D productivity (regulatory approvals and successful commercialization of new products and new product indications; excellence in execution of phase III clinical trials)
- Development of deep, diverse pipeline with differentiated compounds focused on serious unmet needs (hematology, oncology, inflammation & immunology and early discovery)
- External partnerships

## Deal Strategy

- Acquisitions are aimed at strengthening research and manufacturing capabilities, as well as enhancing commercialized products. Recent acquisitions include:
  - In 2008, Pharmion for USD 2.9 B (global biopharmaceutical company that acquired, developed and commercialized innovative products for the treatment of hematology and oncology patients)
  - In 2010, Abraxis for USD 3.2 B (biotechnology company focused on cancer and other critical illnesses)
  - In 2010, Gloucester for USD 338.2 M plus up to USD 300 M in contingent regulatory milestone payments (company focused on hematological cancers and other hematological malignancies)
  - In 2012, Avila Therapeutics for USD 352.2 M plus up to USD 595 M in contingent payments (focused on the design and development of targeted covalent drugs)
- Celgene is part of many R&D and commercial agreements and alliances: collaboration arrangements in R&D are deemed important as they can provide the catalysts for future growth