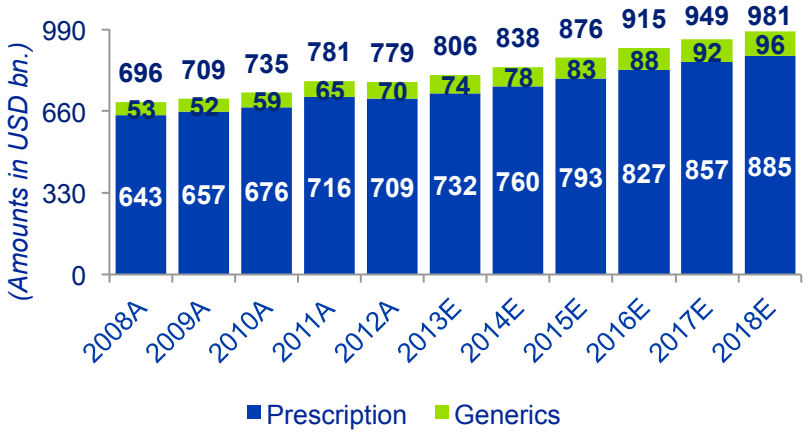
Global Pharmaceutical Industry Profile – 2012

1. Global Pharmaceuticals Market

1.1 Pharmaceutical Sector (Market) Performance

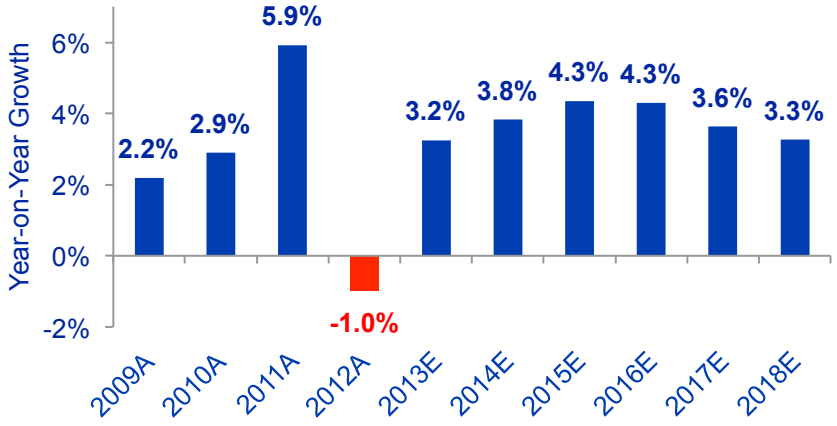
- The global pharmaceutical market has shown steady growth throughout the years. In particular, the market size of the pharmaceutical industry has grown from USD 696 bn. in 2008 to USD 779 bn. in 2012 demonstrating a compounded annual growth rate (CAGR) of 2.9%, while it is expected to reach USD 981 bn. by 2018 (with a CAGR of 3.9%) (**Diagram 1.1**).
- In 2012, the pharmaceutical industry experienced a slight drop-off (**Diagram 1.2**), originating from major patent expiries.
- **Diagram 1.3** shows the market size of the top 5 therapeutic areas. Oncology area is leading the market with a share of 30% (2012) over the total therapeutics market.

Diagram 1.1: Global Pharmaceutical Market



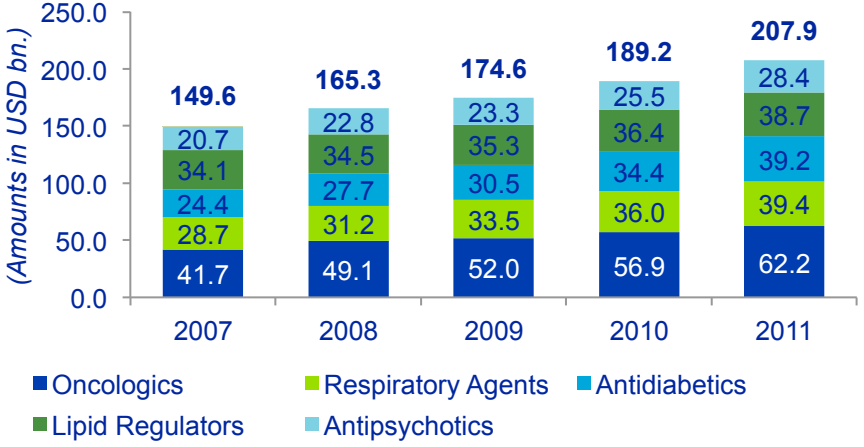
Source: EvaluatePharma - World Preview 2018 *A: Actual, E: Estimates*

Diagram 1.2: Year-on-Year Growth of the Pharmaceutical Market



Source: EvaluatePharma - World Preview 2018 *A: Actual, E: Estimates*

Diagram 1.3: Top 5 therapeutic areas



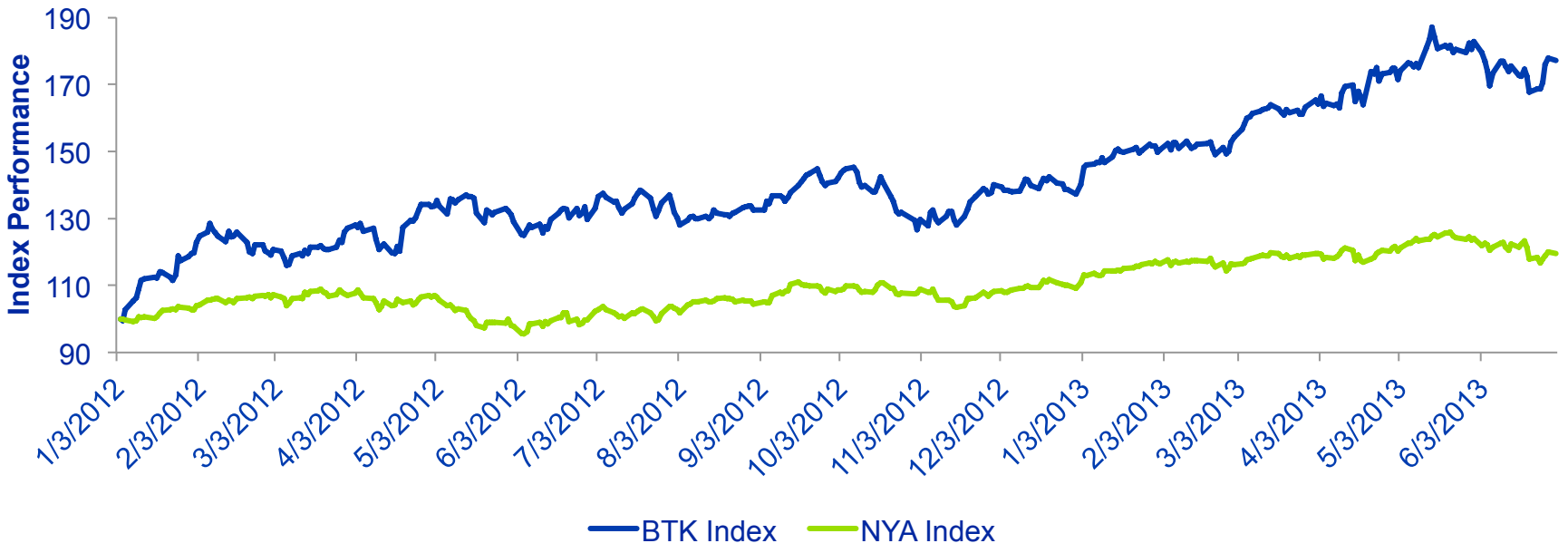
Source: EvaluatePharma - World Preview 2018 *Biostrategy Analytics Analysis*

1. Global Pharmaceuticals Market

1.2 Pharmaceutical Sector (Financial) Performance

- **Diagram** 1.4 shows the NASDAQ Biotechnology Index (BTK) vs. the NASDAQ Composite Index (NYA). The value of each index at 03/01/2012 was used as a reference BTK includes companies classified as Biotechnology or Pharmaceuticals listed on NASDAQ. In addition, companies under the BTK index have a market capitalisation of at least USD 200 mn. and average daily traded shares of 100,000. Instead, the NASDAQ Composite index includes all common stocks listed on the NYSE. According to Diagram 1.4, the biotechnology sector seems to have significantly outperformed other industries. A potential explanation is that biotechnology companies are high growth companies that provide with high returns when they succeed in bringing a product in the market. Finally, the biotechnology sector has recovered faster from the global financial crisis .

Diagram 1.4: Capital Market Performance of the Biotechnology Sector (Jan. 2012 - Jul. 2013)



Source: Bloomberg
For the complete list of companies listed under the BTK index see http://finance.yahoo.com/q/cp?s=%5ENBI

1. Global Pharmaceuticals Market

1.3 Pharmaceutical Industry's Growth Drivers

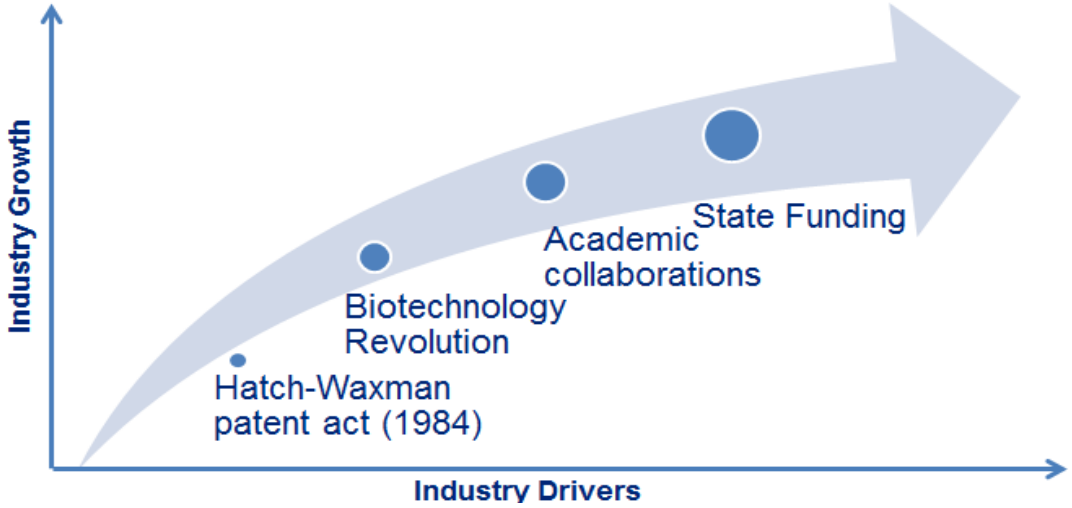
- *Patent exclusivity:* the Hatch-Waxman patent act enabled pharmaceutical companies to have the exclusivity of selling their drugs for a specific period of time in order to recover R&D costs and gain profit. The aim was to boost incentives for drug discovery and development.

- *Biotechnology revolution:* Biotechnology significantly transformed the field of Medicine when Genentech, in 1978 succeeded in manufacturing the first genetically engineered human insulin. In terms of drug discovery, biotechnology companies rationalised target identification by identifying the gene coded to understand whether it is a good target or not (instead of trial and error).

- *Academic activity*: universities and research laboratories play a crucial role in drug discovery. It has been estimated that 1/3 of the drugs discovered come from academic institutions.

- *State funding*: The average annual increase in of the R&D budget of the National Institutes of Health (NIH) has been ~6.5%. NIH R&D budget is approximately 50% of the pharmaceutical industry's global R&D spending. In 2013, it is expected that the NIH R&D budget will be reduced by 5% as an effort to restrain the budget's upward trend and reduce U.S.'s high debt levels.

Diagram 1.5: Global Pharmaceutical Industry Growth & Drivers



Source: Biostrategy Analytics Analysis

1. Global Pharmaceuticals Market

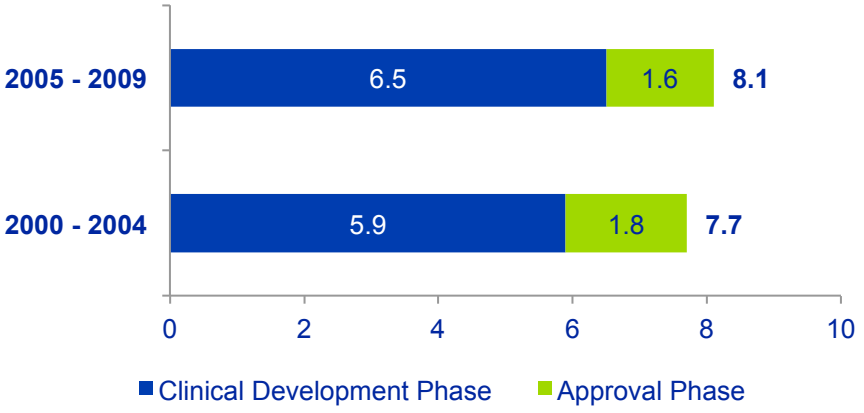
1.3 Pharmaceutical Industry's Grand Challenges

- *Tighter FDA regulations:* development time frames have increased for standard-priority drugs by 0.6 years while the approval phase has decreased slightly (0.2 years) (**Diagram 1.6)**

- *Patent expiries*: Patent expiries during the period 2010 - 2011 have put approximately USD 55 bn of potential sales at risk and according to IMS Health, USD 120 bn. in total for the period 2011 - 2014. (**Diagram 1.7)**

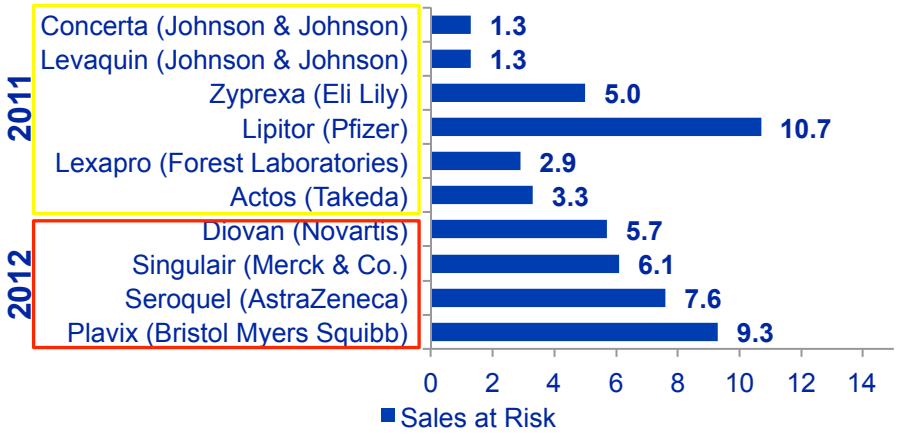
- *Follow-on drugs competition*: has negatively affected first-in class inventors especially in areas where "switch" is easier, such as statins. The effect of follow-on drugs depends however, on the order of entry (2nd, 3rd etc.), the timing of the entry (i.e. number of years after first-in class entry) and the product profile of the entrant relative to the first-in class entrant (safety, efficacy and quality).

Diagram 1.6: Clinical Development Time-Frames



Source: DiMasi, J.A. (2013), Biostrategy Analytics Analaysis

Diagram 1.7: Sales at Risk (USD bn.) due to Patent expiries (2011 - 2012)



Source: EvaluatePharma - World Preview 2018, Biostrategy Analytics Analysis

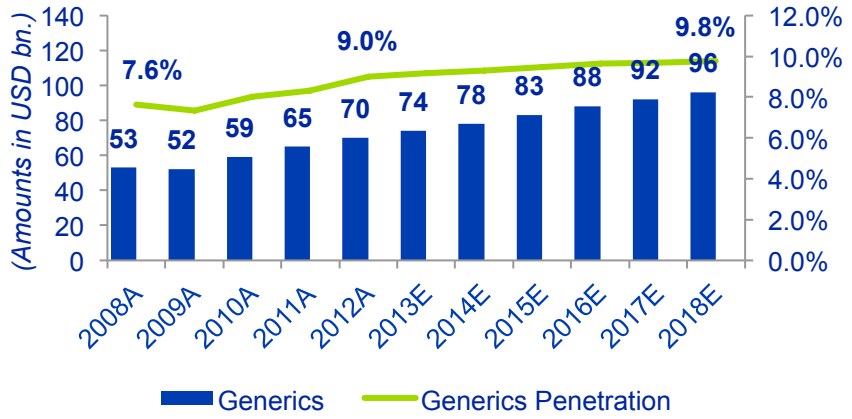
1. Global Pharmaceuticals Market

1.3 Pharmaceutical Industry's Grand Challenges

- *Generics*: Generics sales captured 9% of the global drug sales in 2012, up from a 7.6% share in 2008, expecting to reach a 10% share by 2018. However, as sales is not an adequate indicator for generics (due to their low pricing), number of prescriptions would be a more accurate metric to measure generic erosion. Indeed, more than 50% of the prescribed drugs are generics. (**Diagram 1.8, Diagram 1.9**)

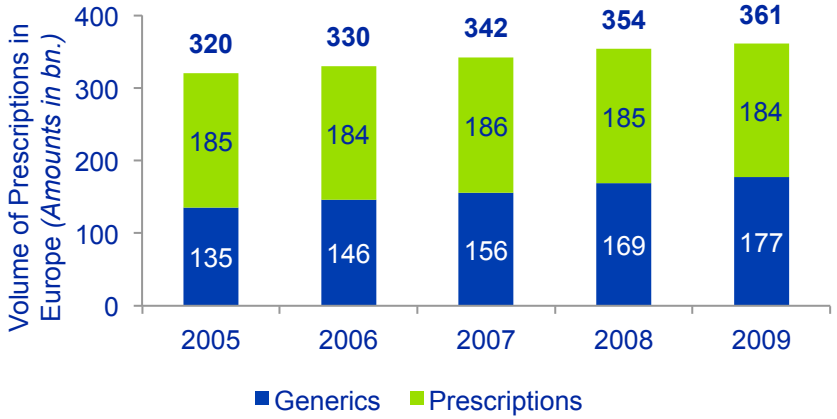
- *Organisational structure and size:* communication between employees and managers and the degree in which employees are participating in the decision-making process can impact the "innovation culture" of a company. Size can also affect innovation as small firms are be able to capitalise on their patents more efficiently compared to large firms, as small firms are able to focus more effectively on a small number of products and receive higher management attention. Communication is also easier in small firms the hierarchy is less strict and a bottom-up approach is, in many cases, promoted.

Diagram 1.8: Global Generics Market Size



Source: EvaluatePharma - World Preview 2018, Biostrategy Analytics Analysis
A: Actual, E: Estimates

Diagram 1.9: Volume of European Generics Prescriptions



Source: IMS Health, 2009

2. Solutions to Challenges

2.1 Is M&A Still a Viable Model?

- **Diagram 2.1** presents the number of deals (disclosed and undisclosed) as well as the total value of (disclosed deals) by year for the period 2003 – YTD 2013. A major M&A spike in terms of deal value can be observed in 2009, primarily driven by megadeals. More specifically, in 2009 Genentech was acquired by Roche for USD 46.8 bn., Schering Plough was acquired by Merck & Co. for USD 41 bn. and Wyeth was acquired by Pfizer for USD 68 bn. Other megadeals include: Sanofi merger with Aventis (2004, USD 63.0 bn), Genentech acquisition by Roche (2009, $US 46.8 bn) and Pharmacia acquisition by Pfizer (2003, USD 60.0 bn). A minor spike is observed in 2011 driven from the acquisition of Takeda from Nycomed (USD 13.1 bn.) and Cephalon acquisition by Teva (USD 6.8 bn.)

Diagram 2.1: Volume and Value of M&A deals in the Pharmaceutical Industry

Source: Alacra.com, Biostrategy Analytics Analysis

2. Solutions to Challenges

2.1 Is M&A Still a Viable Model?

- **Diagram 2.2** presents the major features that determines the success of an M&A deal. Success is defined based on the drivers and objectives behind the deal. Transaction specific characteristics relate to the premium paid by the bidder to the target company and the type of the deal. A high premium drains the cash of the acquiring firm in a cash transaction (if not financed with debt) or dilutes the bidder's equity in a stock transaction causing financing/debt issues in the post-M&A period. Target characteristics are also of particular importance and more specifically strategic fit and complementarity of the target's portfolio of products (e.g. the target's products may overlap with that of the bidder's but a care shall be taken to avoid killing existing products). Finally, absorption and preservation (leaving the target firm to grow without absorbing it to the core business) are the main post-M&A integration techniques used. In the recent M&A deals, absorption is usually avoided as it involves complex M&A planning and it carries high risks in execution. Instead, preservation is commonly used particularly in small biotech acquisitions where the scientists' know-how and expertise are the firm's most valuable assets that might be "lost" or not adequately exploited in a large pharmaceutical company.

Diagram 2.2: M&A Success Determinants

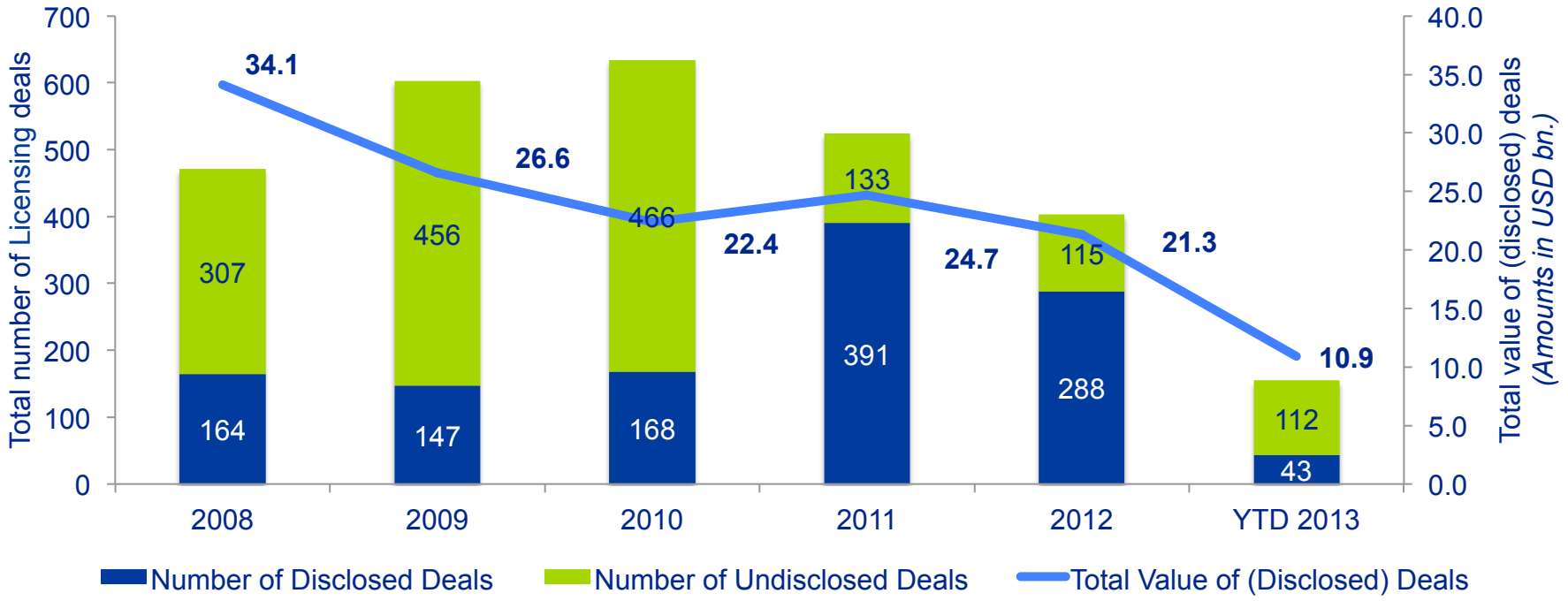
Source: Biostrategy Analytics Analysis

2. Solutions to Challenges

2.2 Licensing Deals: A better alternative?

- **Diagram 2.3** presents the number & value of disclosed deals. Although the number of deals has a slightly decreasing trend from 2010 onwards, the total deal value has been fairly stable mainly driven by the focus of large pharmaceutical companies to sustain their growth through risk and value sharing deals with smaller companies that need to ensure their survival and potentially complete their exit strategy.

Diagram 2.3: Number & Value of Licensing Deals by Year (2008 – YTD 2013)



Source: Biostrategy Analytics Analysis, FierceBiotech, FiercePharma

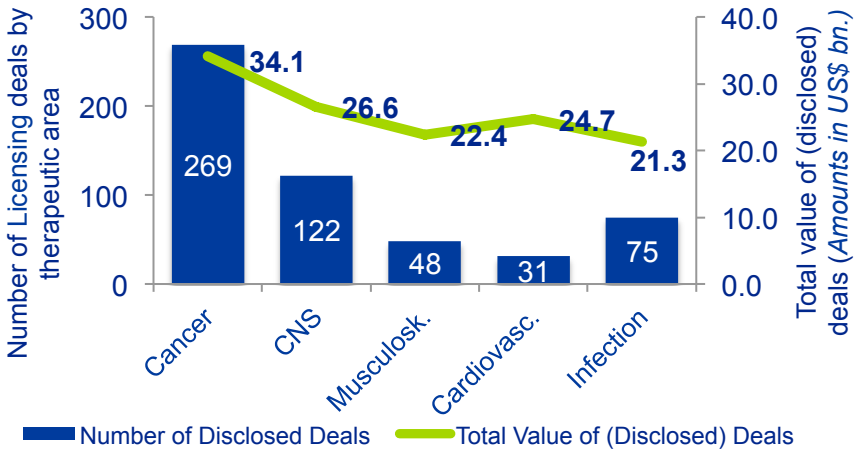
2. Solutions to Challenges

2.2 Licensing Deals: A better alternative?

- A great focus has been given to cancer deals both in terms of number of deals. 269 were cancer deals which represent approx. 50% of the total number of deals. Cancer deals are valued at USD 34.1 bn. and represent 25% of the total value of all deals (**Diagram 2.4).**

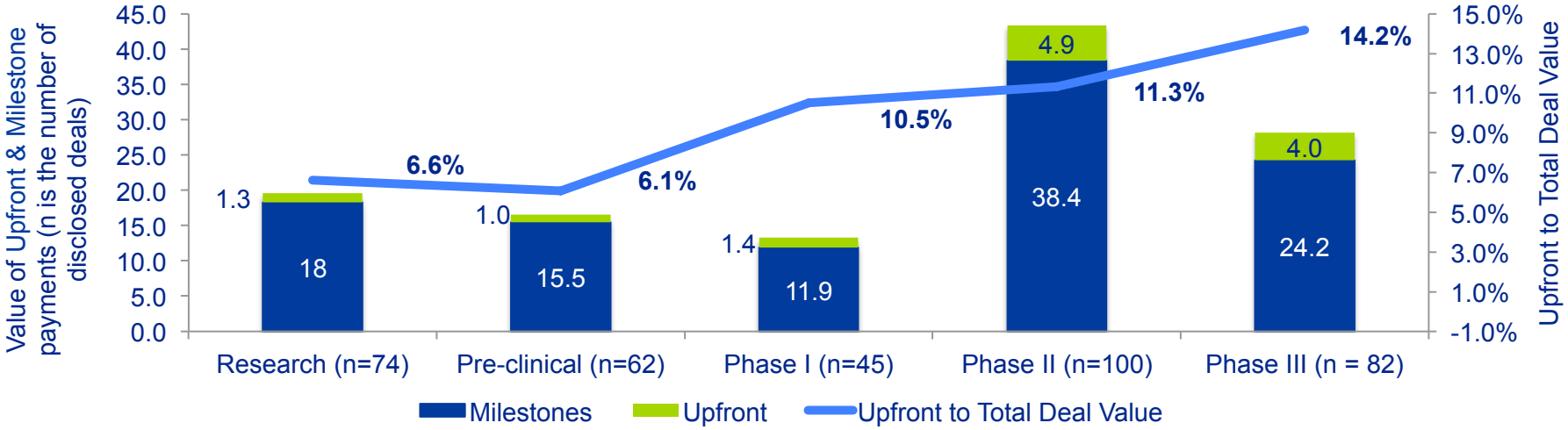
- **Diagram 2.5** presents the value of upfront and milestone payments by phase. It can be seen that there is an emphasis on late stage deals where the total risk of failure lower is less compared to earlier stages. This is also a potential explanation of why the share of upfront payments to total deal value increases from early to late stages of clinical development.

Diagram 2.4: Total Number & Value of Disclosed Licensing Deals by therapeutic area (2008 – YTD 2013)



Source: Biostrategy Analytics Analysis, , FierceBiotech, FiercePharma

Diagram 2.5: Total Value of Upfront & Milestone Payments in Disclosed Licensing Deals by Phase (2008 – YTD 2013)



Source: Biostrategy Analytics Analysis, FierceBiotech, FiercePharma

2. Solutions to Challenges

2.3 Journey to the Unknown (Stem Cells & Regenerative Medicine)

- **Diagram 2.6** and **Diagram 2.7** present the breakdown of the global stem cell market in 2011 and 2016, respectively. In 2011 the global stem cell market was valued at USD 5.3 bn. and is estimated to reach USD 8.9 bn. in 2016, representing a CAGR of 10.9%, driven mainly from stem cell therapies (individual CAGR of 11.7%) and stem cell banking (individual CAGR of 13.3%). The first stem cell drug was approved by the FDA in May 2012 (Prochymal by Osiris Pharmaceuticals) targeted for patients with acute Graft-vs-Host disease. Stem cell market is a fast growing market that expects to further draw the attention of large pharmaceutical companies.

Diagram 2.6: Breakdown of Global Stem Cell Market (2011)

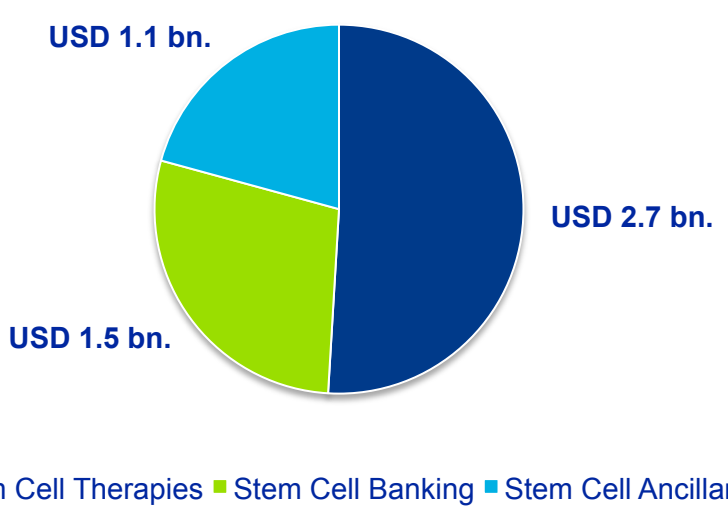
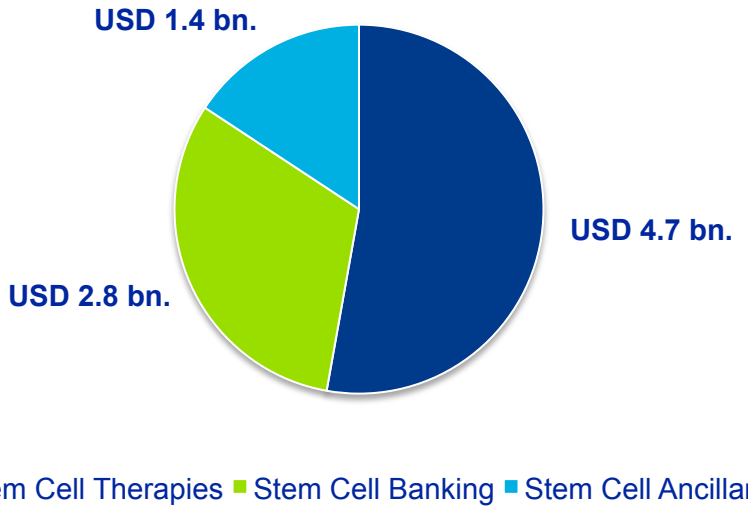


Diagram 2.7: Breakdown of Global Stem Cell Market (2016)



Source: Nature Reviews Drug Discovery 12 (185-186), Visiongain, Biostrategy Analytics Analysis

2. Solutions to Challenges

2.3 Journey to the Unknown (Stem Cells & Regenerative Medicine)

- The 2x2 Matrix below presents the market drivers and challenges as well as the research & development drivers and challenges of the stem cell & regenerative medicine market.

Market Drivers	Pressure for lower health-care costs Demand for organs Interest of major pharmaceutical companies	High R&D costs Cost for the patient Ethics & Regulation
Science Drivers	Ageing Population Chronic Diseases Innovation in other areas (e.g. nanotechnology) Academic research activity	Large scale and mass production complexities High uncertainty and risk (e.g. isolating homogeneous populations of cells, maintaining expansion potential of terminal cells)

	Market Challenges
	Scientific Challenges

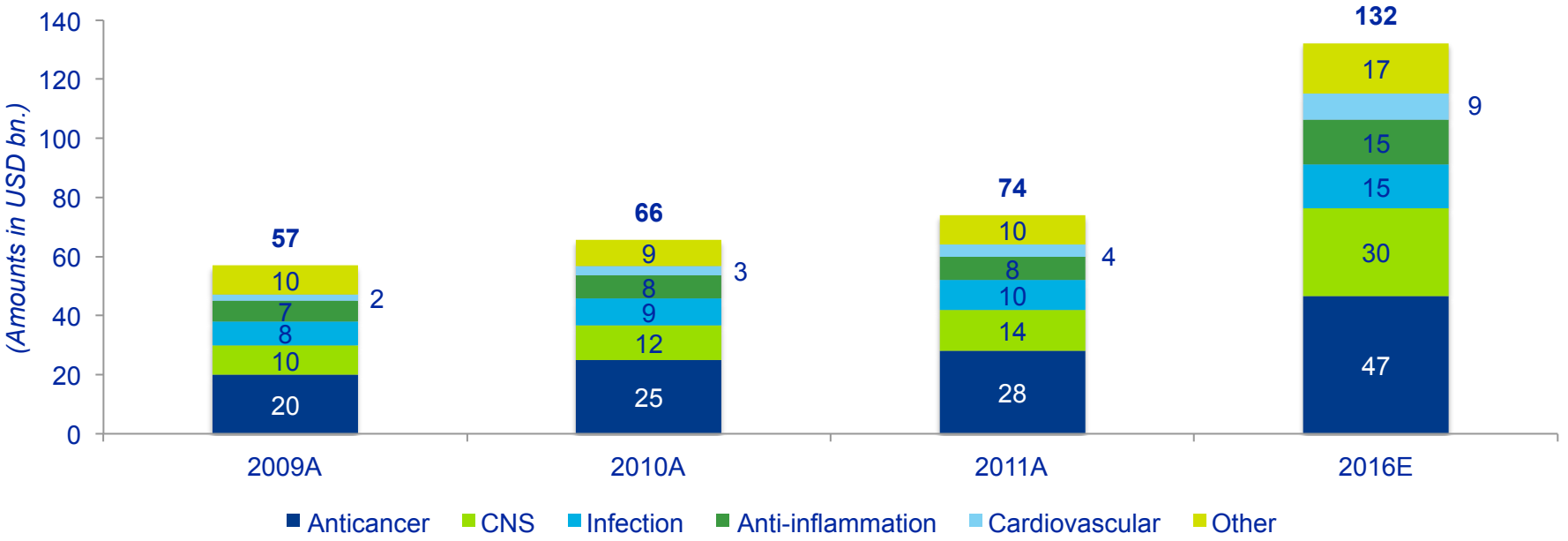
Source: Biostrategy Analytics Analysis

2. Solutions to Challenges

2.3 Journey to the Unknown (Nano-medicine)

- **Diagram 3.1** presents shows the breakdown of the global nanomedicine market by therapeutic area by year. The global nanomedicine market has grown from USD 57 bn. in 2009 to USD 74 bn. in 2011 corresponding to a CAGR of 13.9% and is expected to further grow to USD 132 bn. at a CAGR of 12.2%. The Anti-cancer segment segments captured the highest share of the global nanomedicine market in 2011 (37.8%) followed by CNS (18.9%), Infection (13.5%), Anti-inflammation (10.8%), Cardiovascular (5.4%) and Other (13.5%). According to projections all segments will be approx. double in value by 2016 compared to 2011, apart from the Infection segment (50% increase).

Diagram 3.1: Breakdown of the Global Nanomedicine Market by Therapeutic Area by Year (2009 – 2011, 2016)

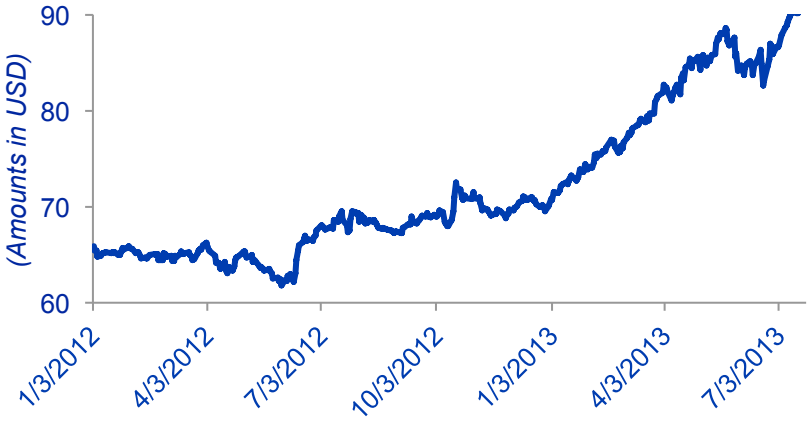


Source: BCC Research, "Nanotechnology in Medical Applications: The Global Market" (2012)
A: Actual, E: Estimates

3. Global Players

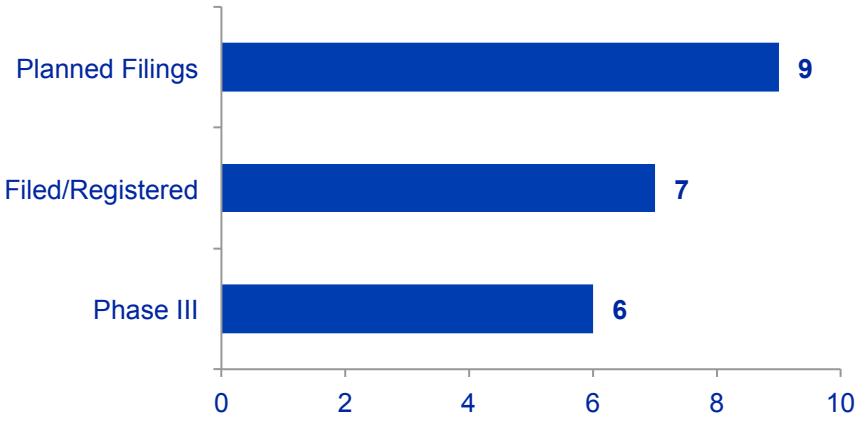
3.1 Johnson & Johnson - Key Metrics

Diagram 3.1: Stock Performance



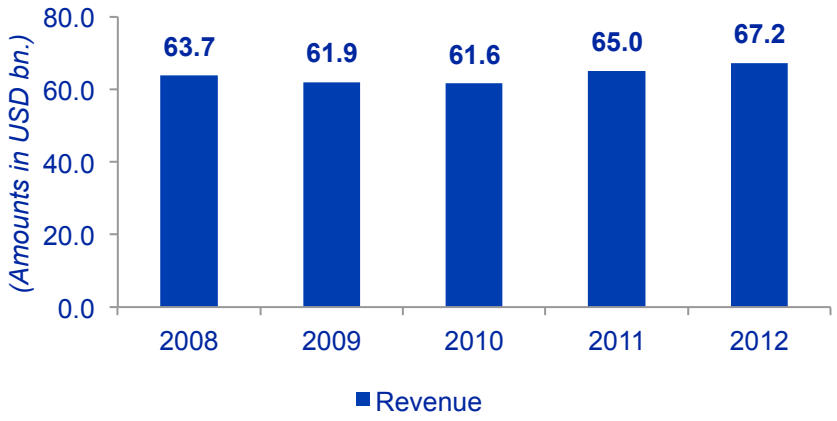
Source: Yahoo! Finance

Diagram 3.2: Pipeline (Late Stage – As of July 2013)



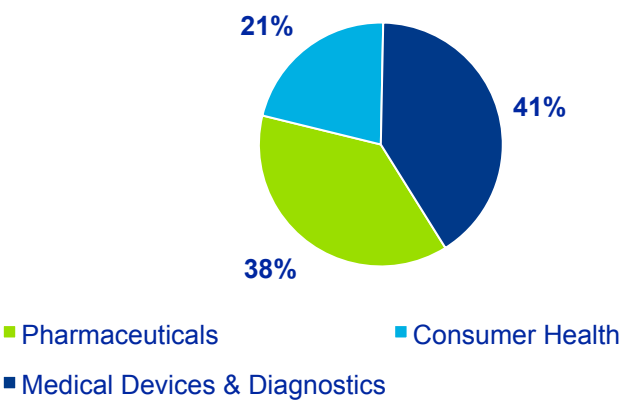
Source: Company's website

Diagram 3.3: Revenue by Year (2008 - 2012)



Source: Company's Annual reports

Diagram 3.4: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.1 Johnson & Johnson - Benchmarking Analysis

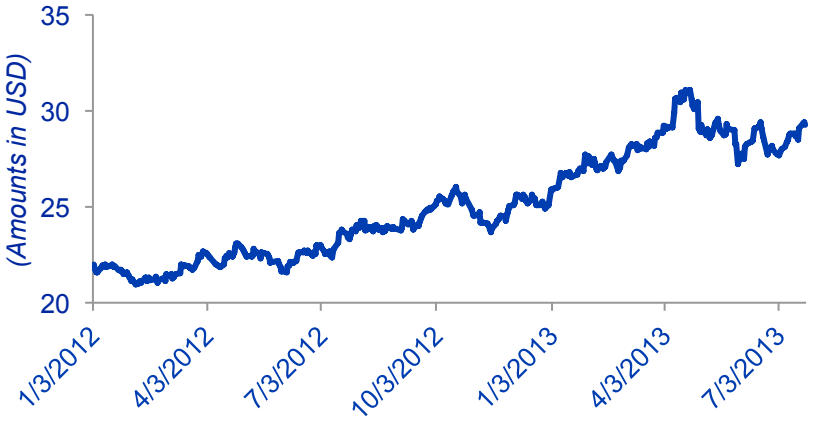
(Amounts in USD mn.)					
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008
Revenue	67,224	65,030	61,587	61,897	63,747
Gross Profit	45,566	44,670	42,795	43,563	45,236
Gross Profit Margin	***67.8%***	***68.7%***	***69.5%***	***70.4%***	***71.0%***
EBIT - Earnings Before Interest and Taxes	17,032	16,153	16,527	16,776	16,169
EBIT Margin	***25.3%***	***24.8%***	***26.8%***	***27.1%***	***25.4%***
EBITDA - EBIT before Deprec./Amort (EBITDA)	20,698	19,311	19,466	19,550	19,001
EBITDA Margin	***30.8%***	***29.7%***	***31.6%***	***31.6%***	***29.8%***
R&D expenditures	7,665	7,548	6,844	6,986	7,577
R&D / Sales	***11.4%***	***11.6%***	***11.1%***	***11.3%***	***11.9%***
EAT – Earnings before Taxes	10,853	9,672	13,334	12,266	12,949
EAT Margin	***16.1%***	***14.9%***	***21.7%***	***19.8%***	***20.3%***
Total Assets	121,347	113,644	102,908	94,682	84,912
Return on Assets	***9.2%***	***8.9%***	***13.5%***	***13.7%***	***15.6%***
S/H Equity	64,826	57,080	56,579	50,588	42,511
Return on Equity	***17.8%***	***17.0%***	***24.9%***	***26.4%***	***30.2%***
Total Debt	16,165	19,627	16,773	14,541	11,852

Source: Company's Annual reports

3. Global Players

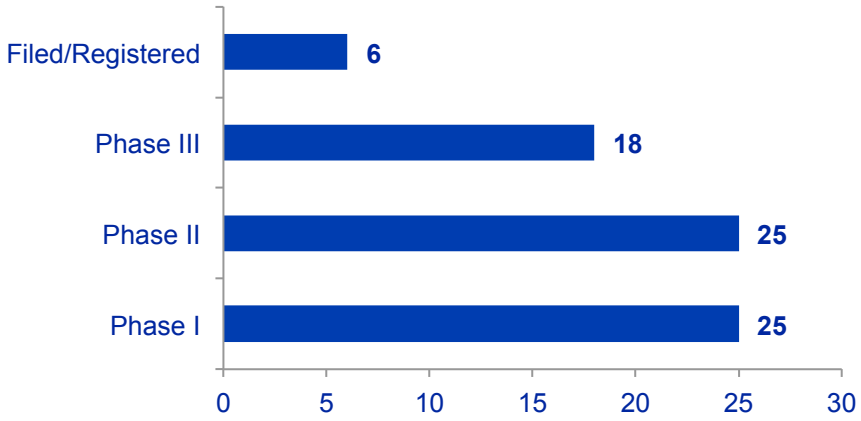
3.2 Pfizer - Key Metrics

Diagram 3.5: Stock Performance



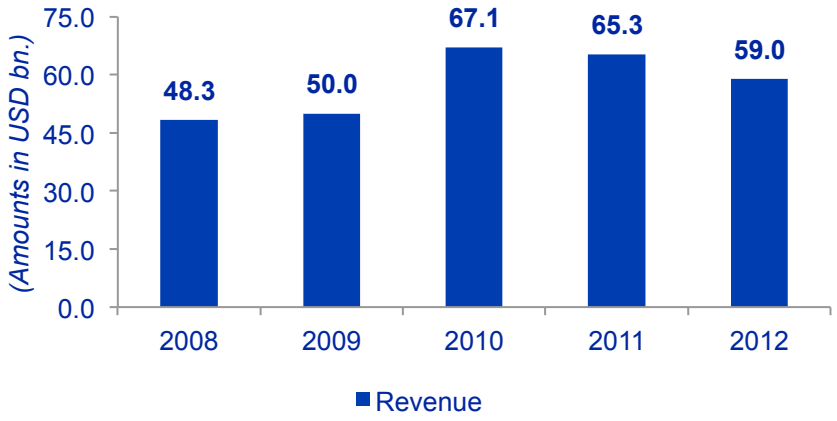
Source: Yahoo! Finance

Diagram 3.6: Pipeline (As of February 2013)



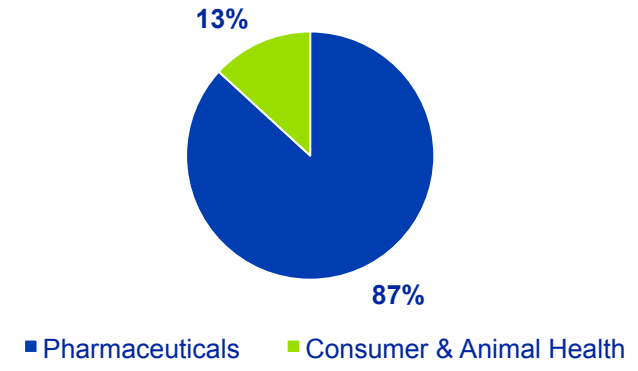
Source: Company's website

Diagram 3.7: Revenue by Year (2008 - 2012)



Source: Company's Annual reports

Diagram 3.8: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.2 Pfizer - Benchmarking Analysis

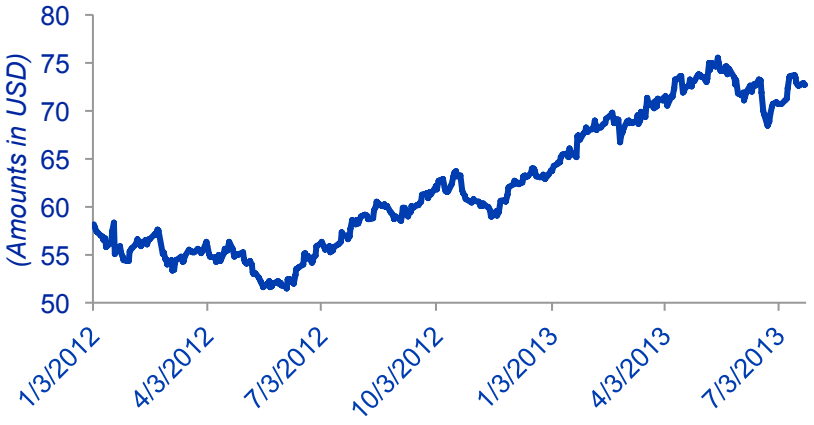
(Amounts in USD mn.)						
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008	FY 2007
Revenue	58,986	65,259	67,057	50,009	48,296	48,418
Gross Profit	47,992	53,225	54,878	42,336	41,256	40,673
Gross Profit Margin	***81.4%***	***81.6%***	***81.8%***	***84.7%***	***85.4%***	***84.0%***
EBIT	19,659	21,130	20,832	17,053	17,056	14,780
EBIT Margin	***33.3%***	***32.4%***	***31.1%***	***34.1%***	***35.3%***	***30.5%***
EBITDA	27,270	30,037	29,319	21,810	22,146	19,980
EBITDA Margin	***46.2%***	***46.0%***	***43.7%***	***43.6%***	***45.9%***	***41.3%***
R&D expenditures	7,870	9,074	9,392	7,845	7,945	8,089
R&D / Sales	***13.3%***	***13.9%***	***14.0%***	***15.7%***	***16.5%***	***16.7%***
Earnings after Tax (EAT)	14,570	10,009	8,257	8,635	8,104	8,144
EAT Margin	***24.7%***	***15.3%***	***12.3%***	***17.3%***	***16.8%***	***16.8%***
Total Assets	185,798	188,002	195,014	212,949	111,148	115,268
Return on Assets	***7.8%***	***5.2%***	***4.0%***	***5.3%***	***7.2%***	***7.1%***
S/H Equity	81,678	82,621	88,265	90,446	57,740	65,124
Return on Equity	***17.8%***	***11.8%***	***9.3%***	***11.7%***	***13.2%***	***12.0%***
Total Debt	37,460	38,942	44,013	48,662	17,283	13,139

Source: Company's Annual reports

3. Global Players

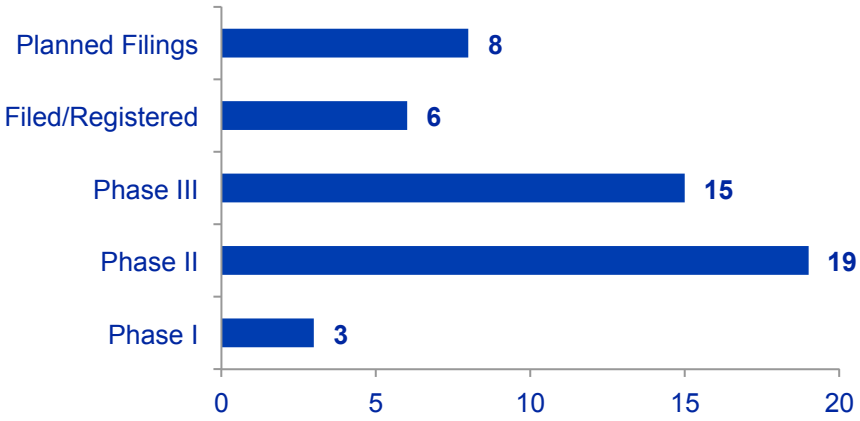
3.3 Novartis - Key Metrics

Diagram 3.9: Stock Performance



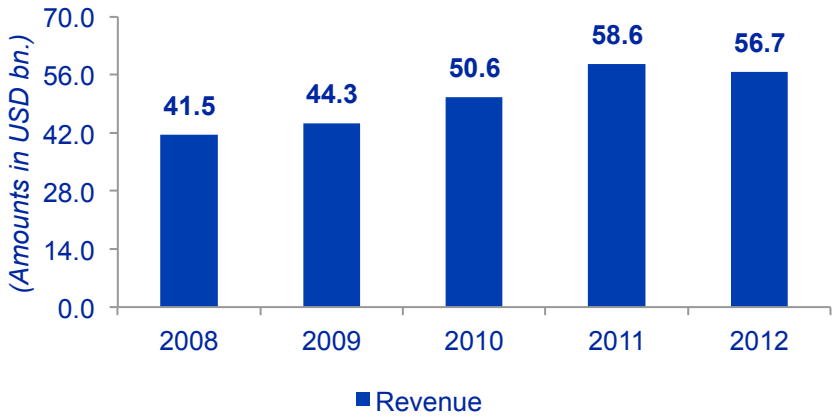
Source: Yahoo! Finance

Diagram 3.10: Pipeline (As of December 2012)



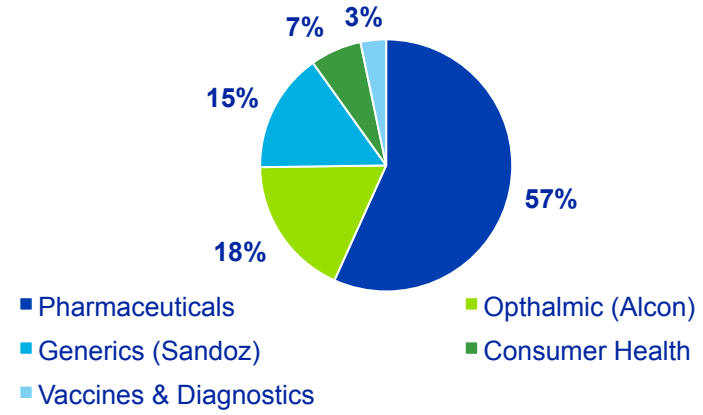
Source: Company's Annual Report

Diagram 3.11: Revenue by Year (2008 - 2012)



Source: Company's Annual reports

Diagram 3.12: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.3 Novartis - Benchmarking Analysis

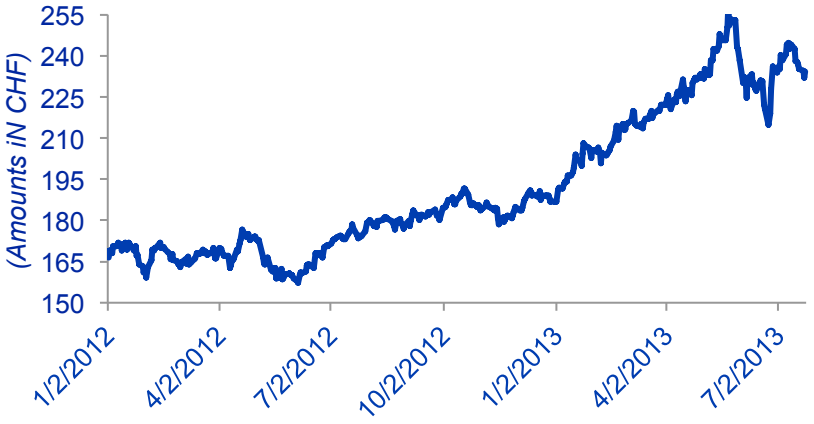
(Amounts in USD mn.)						
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008	FY 2007
Revenue	56,673	58,566	50,624	44,267	41,459	38,072
Gross Profit	37,917	39,583	36,136	32,088	30,020	27,040
Gross Profit Margin	***66.9%***	***67.6%***	***71.4%***	***72.5%***	***72.4%***	***71.0%***
EBIT	11,794	12,030	12,447	10,017	9,439	7,263
EBIT Margin	***20.8%***	***20.5%***	***24.6%***	***22.6%***	***22.8%***	***19.1%***
EBITDA	16,714	17,818	15,866	12,318	12,109	10,121
EBITDA Margin	***29.5%***	***30.4%***	***31.3%***	***27.8%***	***29.2%***	***26.6%***
R&D expenditures	9,332	9,583	9,070	7,469	7,217	6,430
R&D / Sales	***16.5%***	***16.4%***	***17.9%***	***16.9%***	***17.4%***	***16.9%***
EAT	9,505	9,113	9,794	8,400	8,195	11,946
EAT Margin	***16.8%***	***15.6%***	***19.3%***	***19.0%***	***19.8%***	***31.4%***
Total Assets	124,216	117,496	123,318	95,505	78,299	75,452
Return on Assets	***7.9%***	***7.6%***	***9.0%***	***9.7%***	***10.7%***	***16.7%***
S/H Equity	69,219	65,940	69,769	57,462	50,437	49,396
Return on Equity	***14.1%***	***14.1%***	***16.2%***	***15.6%***	***16.5%***	***26.4%***
Total Debt	19,726	20,229	22,987	13,988	7,364	5,794

Source: Company's Annual reports

3. Global Players

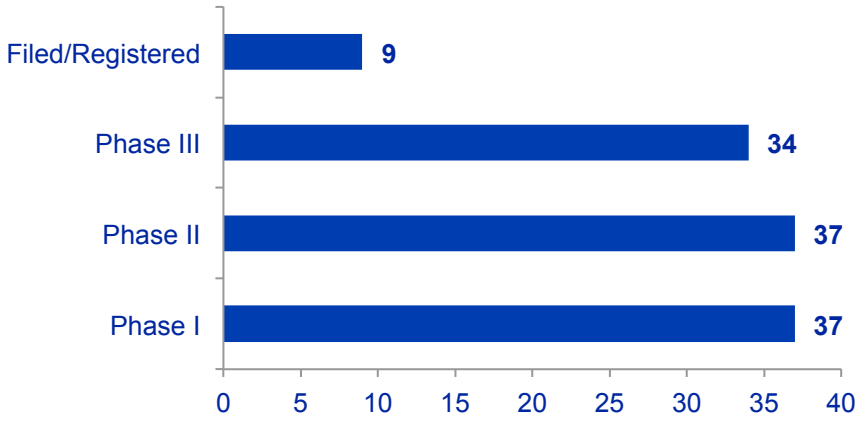
3.4 Roche - Key Metrics

Diagram 3.13: Stock Performance



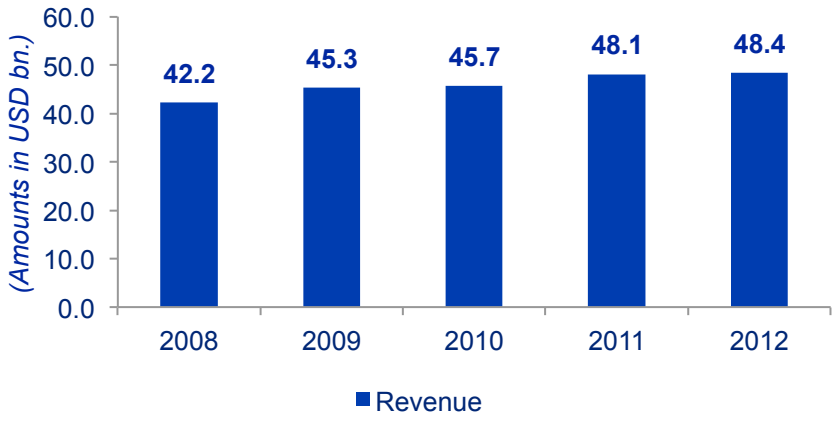
Source: Yahoo! Finance

Diagram 3.14: Pipeline (As of July 2013)



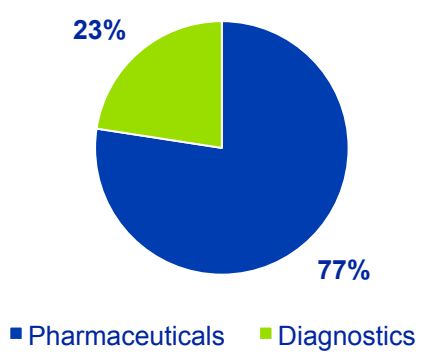
Source: Company's website

Diagram 3.15: Revenue by Year (2008 - 2012)



Source: Company's Annual reports

Diagram 3.16: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.4 Roche - Benchmarking Analysis

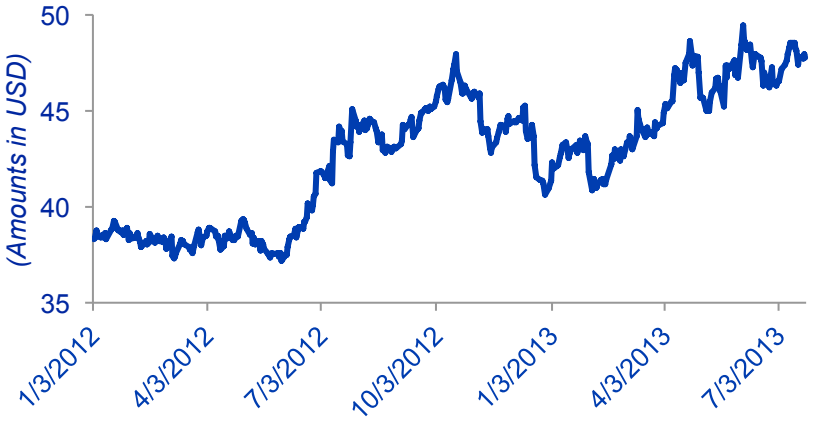
(Amounts in USD mn.)						
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008	FY 2007
Revenue	48,544	48,153	45,672	45,306	42,255	38,479
Gross Profit	35,814	35,003	32,883	31,807	29,601	27,016
Gross Profit Margin	***73.8%***	***72.7%***	***72.0%***	***70.2%***	***70.1%***	***70.2%***
EBIT	18,115	17,579	15,206	15,003	12,994	12,068
EBIT Margin	***37.3%***	***36.5%***	***33.3%***	***33.1%***	***30.8%***	***31.4%***
EBITDA	20,698	20,260	17,662	17,490	15,444	14,183
EBITDA Margin	***42.6%***	***42.1%***	***38.7%***	***38.6%***	***36.6%***	***36.9%***
R&D expenditures	10,191	9,427	9,646	9,120	8,193	6,994
R&D / Sales	***21.0%***	***19.6%***	***21.1%***	***20.1%***	***19.4%***	***18.2%***
EAT	10,177	10,578	8,337	7,190	8,308	8,142
EAT Margin	***21.0%***	***22.0%***	***18.3%***	***15.9%***	***19.7%***	***21.2%***
Total Assets	70,856	65,597	65,339	72,064	71,191	68,823
Return on Assets	***15.1%***	***15.2%***	***12.8%***	***10.3%***	***11.6%***	***12.8%***
S/H Equity	18,290	15,428	12,487	9,098	50,357	46,925
Return on Equity	***71.8%***	***86.7%***	***103.0%***	***30.0%***	***20.0%***	***23.0%***
Total Debt	26,886	28,607	32,185	40,994	3,826	6,044

Source: Company's Annual reports

3. Global Players

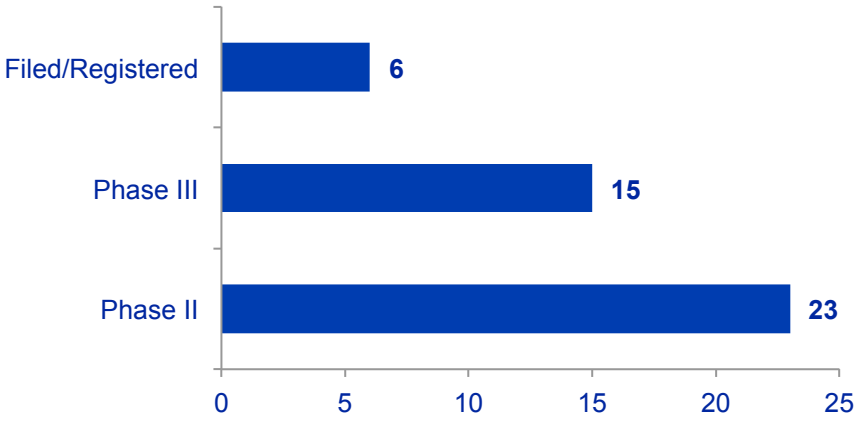
3.5 Merck & Co. - Key Metrics

Diagram 3.17: Stock Performance



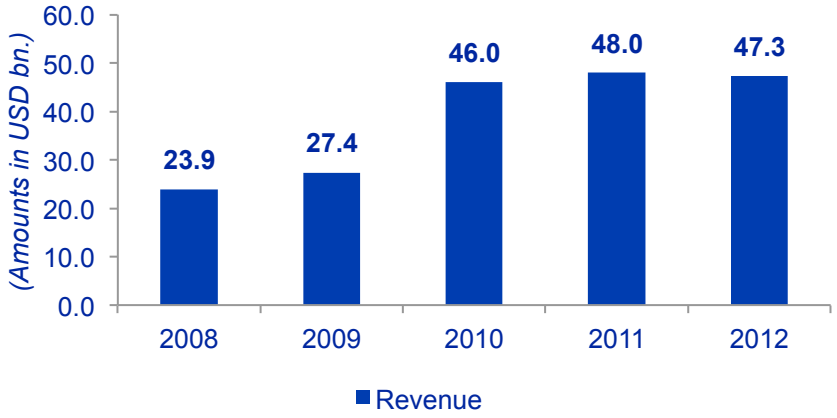
Source: Yahoo! Finance

Diagram 3.18: Pipeline (As of May 2013)



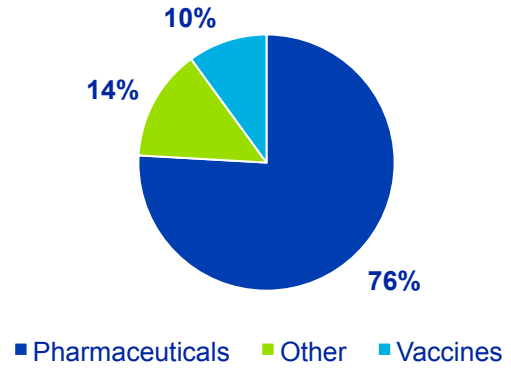
Source: Company's website

Diagram 3.19: Revenue by Year (2008 - 2012)



Source: Company's Annual reports

Diagram 3.20: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.5 Merck & Co. - Benchmarking Analysis

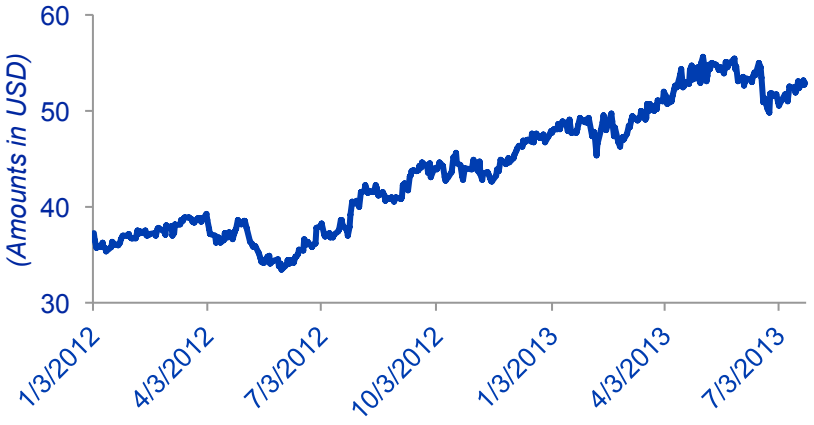
(Amounts in USD mn.)						
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008	FY 2007
Revenue	47,267	48,047	45,987	27,428	23,850	24,198
Gross Profit	30,821	31,524	28,021	18,525	18,391	18,540
Gross Profit Margin	***65.2%***	***65.6%***	***60.9%***	***67.5%***	***77.1%***	***76.6%***
EBIT	9,877	10,446	4,735	4,739	6,439	5,971
EBIT Margin	***20.9%***	***21.7%***	***10.3%***	***17.3%***	***27.0%***	***24.7%***
EBITDA	16,855	17,873	12,116	7,315	8,070	7,959
EBITDA Margin	***35.7%***	***37.2%***	***26.3%***	***26.7%***	***33.8%***	***32.9%***
R&D expenditures	8,168	8,467	10,991	5,845	4,805	4,883
R&D / Sales	***17.3%***	***17.6%***	***23.9%***	***21.3%***	***20.1%***	***20.2%***
EAT	6,168	6,272	861	12,901	7,808	3,275
EAT Margin	***13.0%***	***13.1%***	***1.9%***	***47.0%***	***32.7%***	***13.5%***
Total Assets	106,132	105,128	105,781	112,090	47,196	48,351
Return on Assets	***5.8%***	***5.9%***	***0.8%***	***16.2%***	***16.3%***	***7.0%***
S/H Equity	55,463	56,943	56,805	61,493	21,167	20,591
Return on Equity	***11.5%***	***11.5%***	***1.5%***	***33.2%***	***42.3%***	***18.3%***
Total Debt	20,569	17,515	17,882	17,661	6,240	5,739

Source: Company's Annual reports

3. Global Players

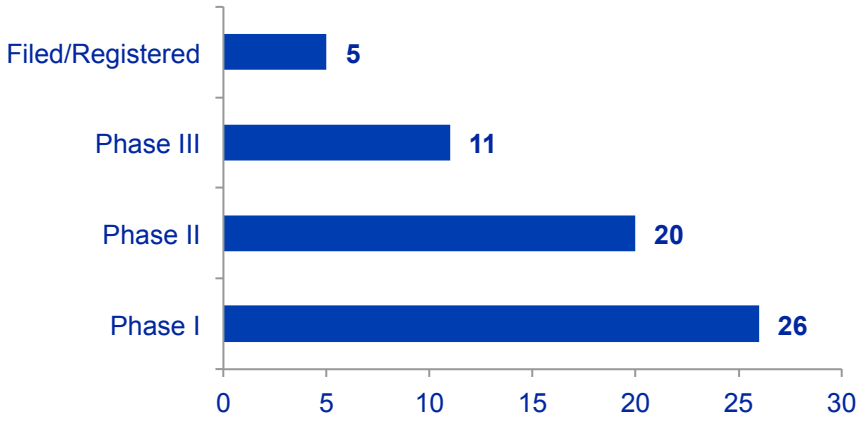
3.6 Sanofi - Key Metrics

Diagram 3.21: Stock Performance



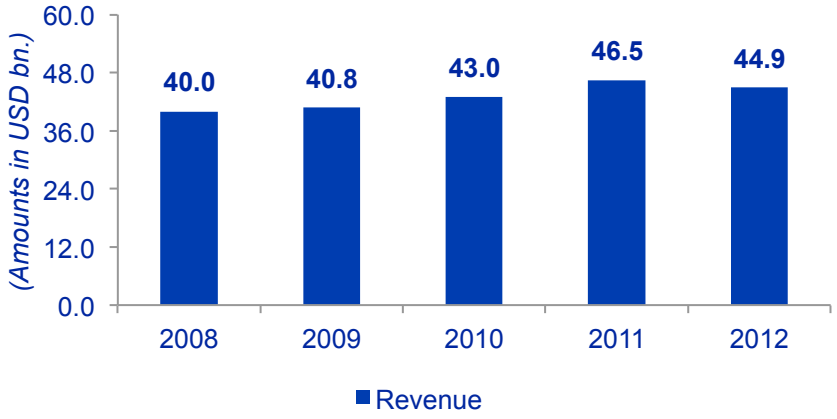
Source: Yahoo! Finance

Diagram 3.22: Pipeline (As of May 2013)



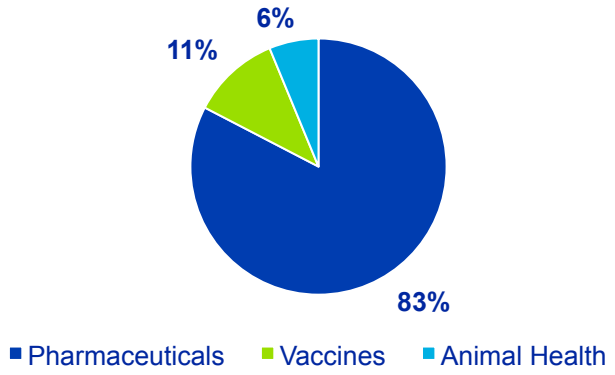
Source: Company's website

Diagram 3.23: Revenue by Year (2008 - 2012)



Source: Company's Annual reports

Diagram 3.24: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.6 Sanofi - Benchmarking Analysis

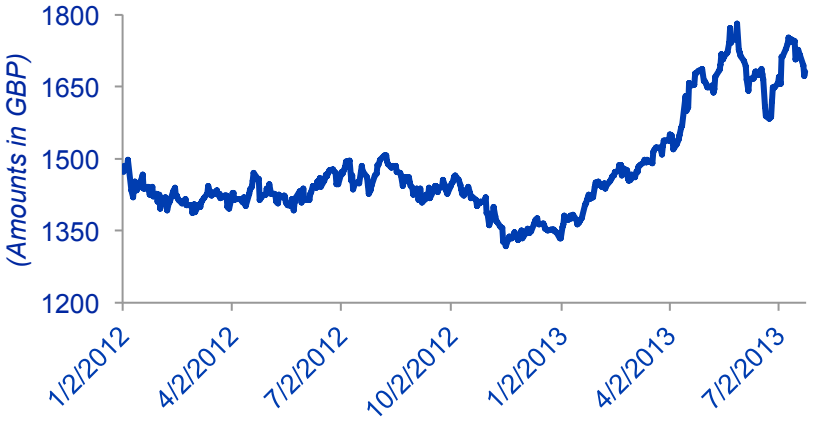
(Amounts in USD mn.)						
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008	FY 2007
Revenue	44,937	46,491	42,939	40,866	40,550	38,454
Gross Profit	30,641	31,311	30,471	29,877	29,758	28,075
Gross Profit Margin	***68.2%***	***67.3%***	***71.0%***	***73.1%***	***73.4%***	***73.0%***
EBIT	10,013	10,442	11,263	10,902	9,498	8,370
EBIT Margin	***22.3%***	***22.5%***	***26.2%***	***26.7%***	***23.4%***	***21.8%***
EBITDA	15,924	17,535	17,453	17,856	14,621	14,599
EBITDA Margin	***35.4%***	***37.7%***	***40.6%***	***43.7%***	***36.1%***	***38.0%***
R&D expenditures	6,329	6,699	6,032	6,391	6,729	6,219
R&D / Sales	***14.1%***	***14.4%***	***14.0%***	***15.6%***	***16.6%***	***16.2%***
EAT	6,387	7,927	7,253	7,342	5,664	7,215
EAT Margin	***14.2%***	***17.1%***	***16.9%***	***18.0%***	***14.0%***	***18.8%***
Total Assets	132,507	130,466	113,964	114,718	100,443	104,872
Return on Assets	***4.9%***	***6.1%***	***6.6%***	***6.9%***	***5.4%***	***7.0%***
S/H Equity	75,846	73,059	71,225	69,428	62,888	65,214
Return on Equity	***8.7%***	***10.4%***	***10.8%***	***11.3%***	***8.6%***	***11.7%***
Total Debt	19,177	20,009	11,040	12,650	8,380	8,664

Source: Company's Annual reports

3. Global Players

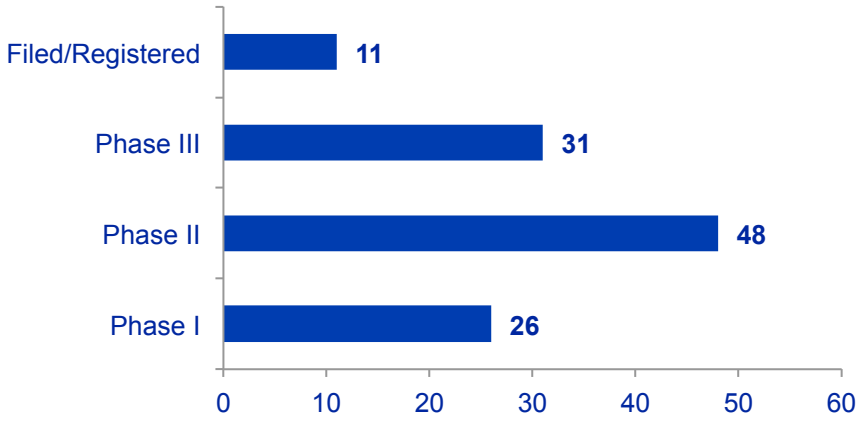
3.7 GlaxoSmithKline - Key Metrics

Diagram 3.25: Stock Performance



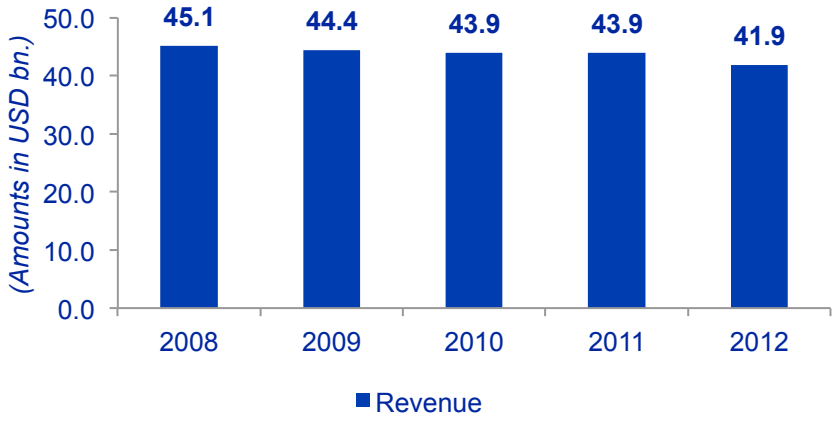
Source: Yahoo! Finance

Diagram 3.26: Pipeline (As of February 2013)



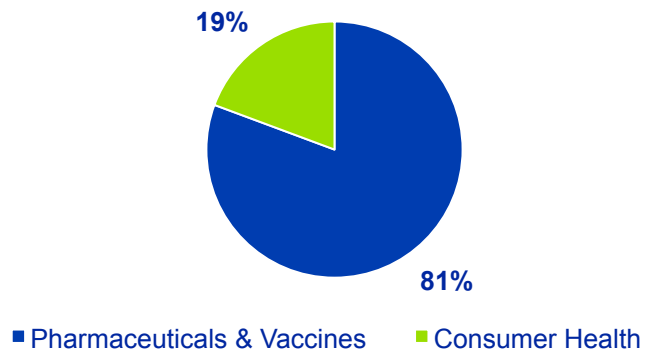
Source: Company's website

Diagram 3.27: Revenue by Year (2008 - 2012)



Source: Company's Annual reports

Diagram 3.28: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.7 GlaxoSmithKline - Benchmarking Analysis

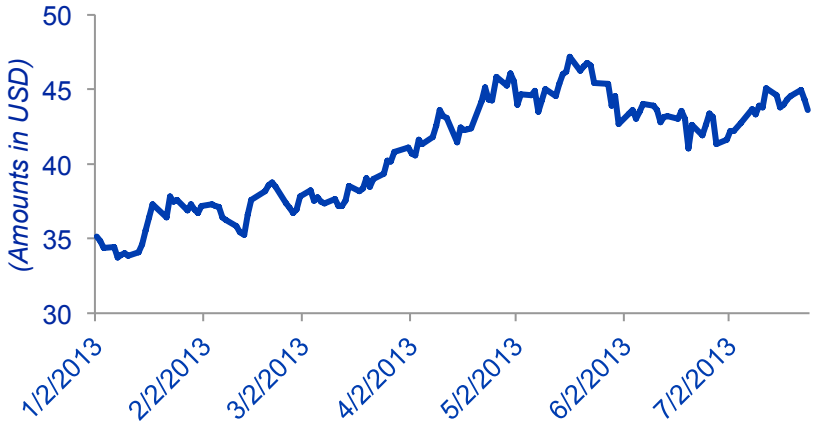
(Amounts in USD mn.)						
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008	FY 2007
Revenue	41,895	43,925	43,886	44,422	45,097	45,450
Gross Profit	30,075	31,795	32,440	33,312	34,401	35,034
Gross Profit Margin	***71.8%***	***72.4%***	***73.9%***	***75.0%***	***76.3%***	***77.1%***
EBIT	14,536	13,785	8,120	14,962	14,600	15,396
EBIT Margin	***34.7%***	***31.4%***	***18.5%***	***33.7%***	***32.4%***	***33.9%***
EBITDA	16,826	16,067	10,715	17,408	16,880	17,441
EBITDA Margin	***40.2%***	***36.6%***	***24.4%***	***39.2%***	***37.4%***	***38.4%***
R&D expenditures	6,290	6,430	6,127	6,187	6,493	6,477
R&D / Sales	***15.0%***	***14.6%***	***14.0%***	***13.9%***	***14.4%***	***14.2%***
EAT	7,236	8,438	2,526	8,661	8,522	10,432
EAT Margin	***17.3%***	***19.2%***	***5.8%***	***19.5%***	***18.9%***	***23.0%***
Total Assets	67,364	63,711	65,841	69,214	57,415	61,470
Return on Assets	***11.1%***	***12.6%***	***3.8%***	***13.4%***	***13.1%***	***18.4%***
S/H Equity	10,958	13,690	15,193	17,346	12,123	19,649
Return on Equity	***66.0%***	***62.2%***	***17.3%***	***61.7%***	***52.5%***	***54.9%***
Total Debt	29,726	23,110	23,542	26,252	23,593	20,959

Source: Company's Annual reports

3. Global Players

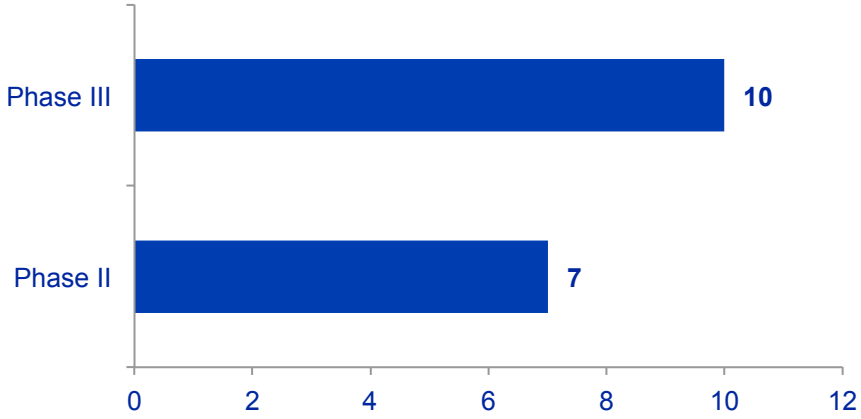
3.8 Abbott (AbbVie) - Key Metrics

Diagram 3.29: Stock Performance



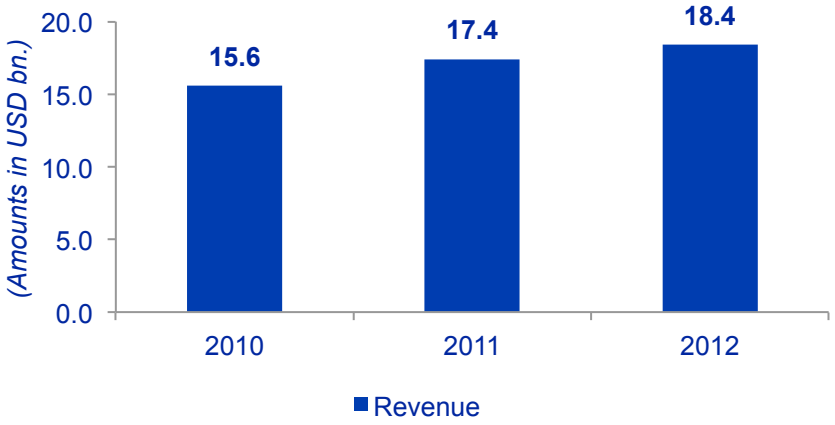
Source: Yahoo! Finance

Diagram 3.30: Pipeline (Late Stage - As of January 2013)



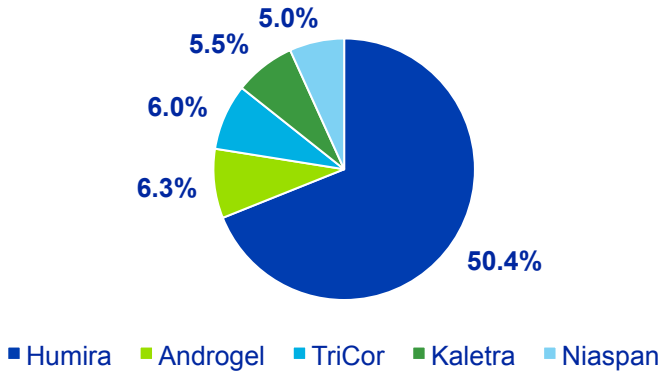
Source: Company's website

Diagram 3.31: Revenue by Year (2010 - 2012)



Source: Company's Annual reports

Diagram 3.32: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.8 Abbott (AbbVie)* - Benchmarking Analysis

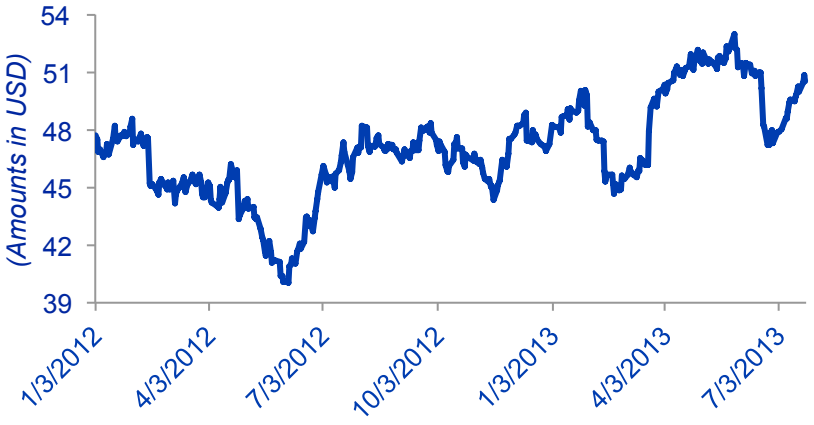
(Amounts in USD mn.)						
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008	FY 2007
Revenue	21,494	38,851	35,167	30,765	29,528	25,914
Gross Profit	11,677	23,311	20,502	17,555	17,262	14,492
Gross Profit Margin	***54.3%***	***60.0%***	***58.3%***	***57.1%***	***58.5%***	***55.9%***
EBIT	1,894	6,424	6,401	6,406	6,477	4,579
EBIT Margin	***8.8%***	***16.5%***	***18.2%***	***20.8%***	***21.9%***	***17.7%***
EBITDA	n/a	9,468	9,025	8,495	8,316	6,433
EBITDA Margin	***n/a***	***24.4%***	***25.7%***	***27.6%***	***28.2%***	***24.8%***
R&D expenditures	1,544	4,129	3,724	2,744	2,689	2,506
R&D / Sales	***7.2%***	***10.6%***	***10.6%***	***8.9%***	***9.1%***	***9.7%***
EAT	579	4,728	4,626	5,746	4,881	3,606
EAT Margin	***2.7%***	***12.2%***	***13.2%***	***18.7%***	***16.5%***	***13.9%***
Total Assets	67,235	60,277	60,574	52,417	42,419	39,714
Return on Assets	***0.9%***	***7.8%***	***8.2%***	***12.1%***	***11.9%***	***9.5%***
S/H Equity	26,813	24,526	22,765	22,899	17,480	17,779
Return on Equity	***2.3%***	***20.1%***	***20.3%***	***28.5%***	***27.7%***	***22.7%***
Total Debt	20,476	15,415	18,918	16,456	11,445	12,214

Source: Company's Annual reports
**Benchmarking has been applied to Abbott Group as financial statements of AbbVie were not available.*

3. Global Players

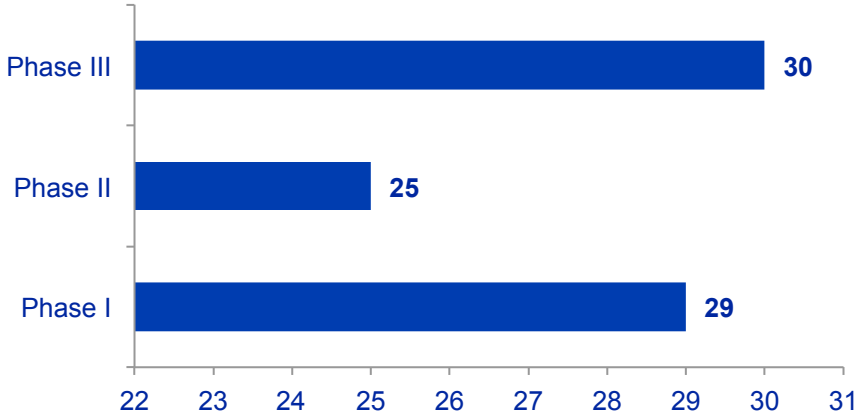
3.9 AstraZeneca - Key Metrics

Diagram 3.33: Stock Performance



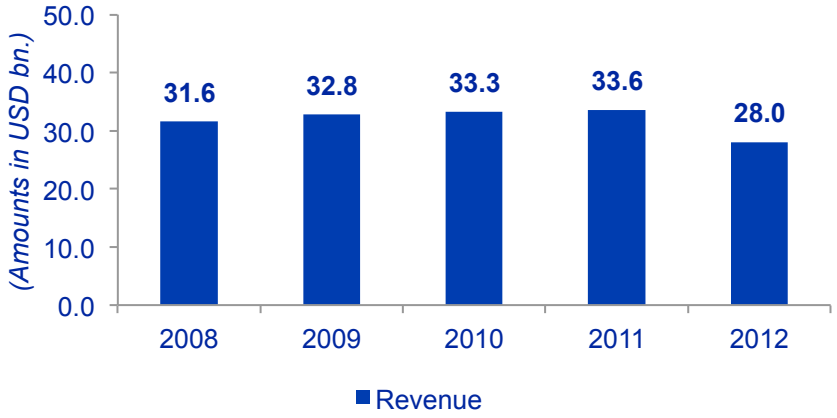
Source: Yahoo! Finance

Diagram 3.34: Pipeline (As of June 2013)



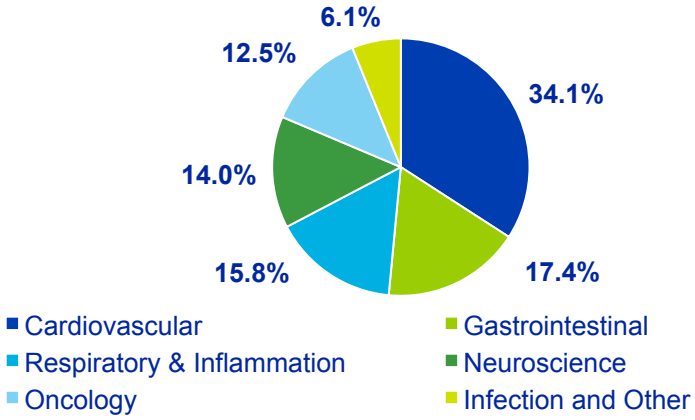
Source: Company's website

Diagram 3.35: Revenue by Year (2008 - 2012)



Source: Company's Annual reports

Diagram 3.36: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.9 AstraZeneca - Benchmarking Analysis

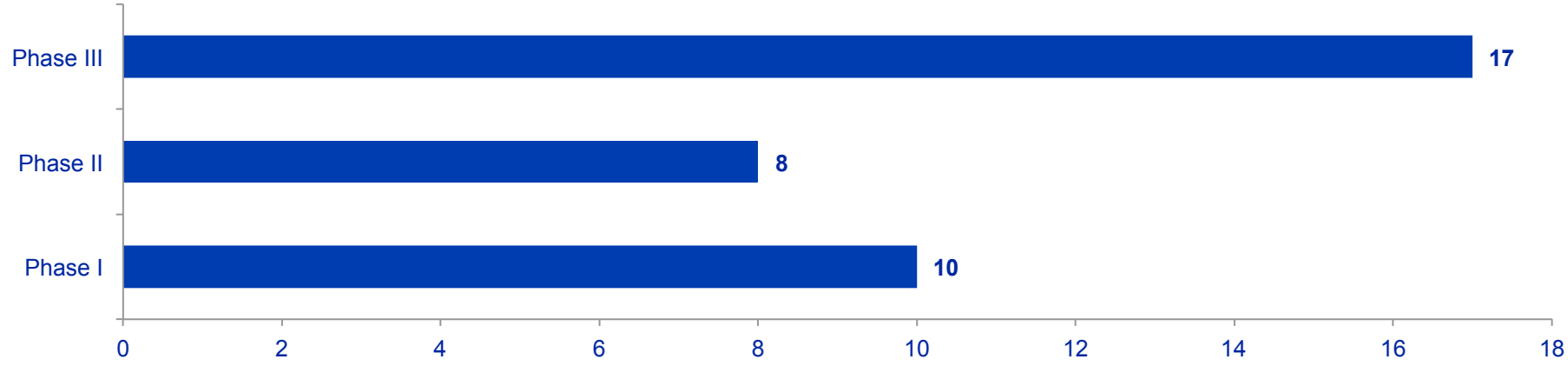
(Amounts in USD mn.)						
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008	FY 2007
Revenue	27,973	33,591	33,269	32,804	31,601	29,559
Gross Profit	22,580	27,565	26,880	27,029	25,003	23,140
Gross Profit Margin	***80.7%***	***82.1%***	***80.8%***	***82.4%***	***79.1%***	***78.3%***
EBIT	8,140	11,279	11,429	11,148	9,037	9,060
EBIT Margin	***29.1%***	***33.6%***	***34.4%***	***34.0%***	***28.6%***	***30.7%***
EBITDA	10,658	13,276	14,170	13,235	11,657	10,916
EBITDA Margin	***38.1%***	***39.5%***	***42.6%***	***40.3%***	***36.9%***	***36.9%***
R&D expenditures	5,243	5,523	5,318	4,409	5,179	5,162
R&D / Sales	***18.7%***	***16.4%***	***16.0%***	***13.4%***	***16.4%***	***17.5%***
EAT	6,297	9,983	8,053	7,521	6,101	5,595
EAT Margin	***22.5%***	***29.7%***	***24.2%***	***22.9%***	***19.3%***	***18.9%***
Total Assets	53,534	52,830	56,127	54,920	46,784	47,957
Return on Assets	***11.8%***	***18.3%***	***14.5%***	***14.8%***	***12.9%***	***14.4%***
S/H Equity	23,952	23,472	23,410	20,821	16,060	14,915
Return on Equity	***26.8%***	***43.0%***	***36.7%***	***41.1%***	***39.8%***	***37.2%***
Total Debt	10,310	9,328	9,222	11,063	12,011	15,160

Source: Company's Annual reports

3. Global Players

3.10 Bayer (Healthcare) - Key Metrics

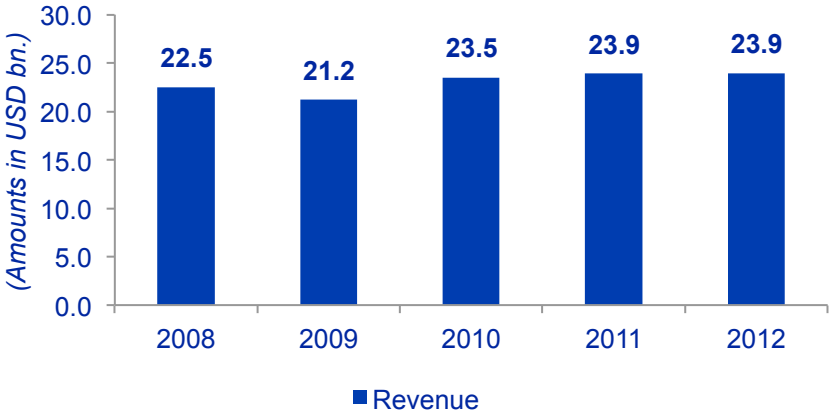
Diagram 3.37: Pipeline (As of April 2013)



Source: Yahoo! Finance

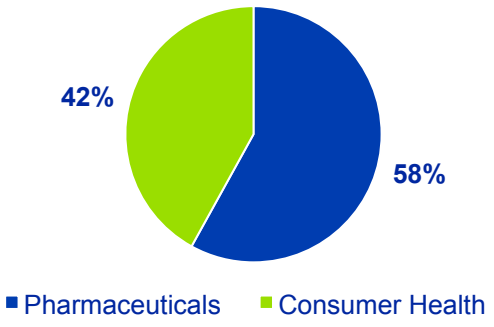
Source: Company's website

Diagram 3.38: Revenue by Year (2008 - 2012)



Source: Company's Annual reports
**Bayer is privately held company and therefore stock information is unavailable*

Diagram 3.39: Revenue Breakdown (2012)



Source: Company's Annual reports

3. Global Players

3.10 Bayer* - Benchmarking Analysis

(Amounts in USD mn.)						
Fiscal Year Ended	FY2012	FY2011	FY2010	FY 2009	FY 2008	FY 2007
Revenue	51,126	50,862	46,548	43,462	48,419	44,393
Gross Profit	26,619	25,833	23,859	22,357	24,214	21,978
Gross Profit Margin	***52.1%***	***50.8%***	***51.3%***	***51.4%***	***50.0%***	***49.5%***
EBIT	7,768	8,625	7,089	6,813	5,854	5,419
EBIT Margin	***15.2%***	***17.0%***	***15.2%***	***15.7%***	***12.1%***	***12.2%***
EBITDA	11,574	12,480	11,807	10,730	9,858	9,136
EBITDA Margin	***22.6%***	***24.5%***	***25.4%***	***24.7%***	***20.4%***	***20.6%***
R&D expenditures	3,874	4,083	4,050	3,829	3,902	3,534
R&D / Sales	***7.6%***	***8.0%***	***8.7%***	***8.8%***	***8.1%***	***8.0%***
EAT	3,145	3,439	1,726	1,895	2,528	6,458
EAT Margin	***6.2%***	***6.8%***	***3.7%***	***4.4%***	***5.2%***	***14.5%***
Total Assets	67,748	68,383	68,843	73,148	73,269	74,925
Return on Assets	***4.7%***	***4.7%***	***2.5%***	***2.6%***	***3.3%***	***8.8%***
S/H Equity	24,506	24,975	25,256	27,159	22,799	24,530
Return on Equity	***13.0%***	***13.0%***	***6.9%***	***7.7%***	***10.4%***	***31.9%***
Total Debt	12,579	15,136	15,816	18,557	23,539	21,024

Source: Company's Annual reports
**Benchmarking has been applied to Bayer Group as financial statements of Bayer (Healthcare) were not available.*

4. Overview of Industry Trends

The pharmaceutical has experienced a slow but steady growth driven by mature (large) pharmaceutical companies that capture a major market share. However, these companies are facing various challenges mainly, (i) **lack of innovation**, (ii) **patent expirations**, (iii) **generics & follow-on competition** and (iv) **reduced state funding**. Instead, the biotechnology sector's challenges are (i) **lack of financing**, (ii) **intense competition for funding** and (iii) **high risks & uncertainties**, since a drug failure has a significant negative effect to an early-stage company with very few projects at hand.

Therefore, the pharmaceutical and biotechnology sectors have found **collaborative solutions** that can cope with these challenges. Three types of solutions have been identified. The first one is through **traditional M&A deals** where target companies complete the exit strategy and the bidder benefits from the (potential) synergies to be realised. The second type of solutions focuses on **new deal structures** where both risk and value sharing is enhanced and both parties can benefit. Finally, the third type of solutions is **long-term investments** made by pharmaceutical companies to new emerging biotechnology companies focusing on areas that may transform healthcare such as nanomedicine, stem cells and regenerative medicine.

Financial performance can be analysed based on stock performance, and profitability ratios. Based on global key players' stock performance, the main conclusion is that stocks have an upward trend. Although investors have realised that they have to wait many years for new and innovative healthcare technologies to see practical applications and therefore receive their expected returns, they also know that it is one of the few ways to maintain and sustain growth of large pharmaceutical companies. In terms of profitability ratios, gross profit margins range between 50% and 80% which is impressive. There is a high deviation in terms of EBIT margins as the lowest is 8.8% (Abbott / AbbVie) and the highest is 37.3% (Roche), although most EBIT margins fall between 20% - 35%. A similar trend is observed when looking at EAT margins – lowest EAT margin is 2.7% (Abbott / AbbVie) and the highest is 24.7% (Pfizer). Finally, the most R&D intensive company is Roche with 21.0% R&D to sales ratio which also has the third highest EAT margin (21.0%).

Finally, in terms of pipeline performance, AstraZeneca seems to have the richest late stage pipeline compared to its (pharmaceutical) market size and its sales while Sanofi seems to have the poorest late stage pipeline based on the same metrics. However, these metrics are quantitative and do not say anything about the quality of pipeline products.