

**Big Pharma's Partnership Strategies in Relation to  
Biotech Companies**

**December 1<sup>st</sup> 2011**



## This presentation aims to provide elements to the following four key questions

### *Four Key Questions*

**1** ● **What are the key challenges big-pharma companies are currently facing?**

**2** ● **Why does big-pharma need to partner with biotech companies?**

**3** ● **Will this inflationist trend continue over time?**

**4** ● **Is the rebirth of the mega-deals model sustainable or does the targeted acquisitions model will take the lead?**

Source: Bionest Partners

# The pharmaceutical industry: What is at stake for 2011 – 2015?

## Key Challenges (1/4)

- **How to remain at the forefront of real innovation?**
  - **Offering distinctive innovation rewarded by the market** (e.g. premium prices granted and fast-track approval process...)
  - **Providing long-term competitiveness**
  - **Exploring new avenues:** biotechnology, personalized medicine, cell therapy, etc.
  
- **How to properly manage the strengthening of regulatory requirements?**
  - **Product tolerability profile** is now becoming a crucial element for health authorities concerning **both product launch, extension of product indication as well as marketed products**
  
- **How to compete with increasing part of generics and to a lesser extent biosimilars?**
  - In 2010, **generics represented 12% (\$108Bn) of the pharmaceutical market in value (\$876Bn)**, but **57% in volume**. Some previsions affirm **that the generics market will reach reach \$135Bn in 2014** (17 % of the pharmaceutical market)
  - Over the period 2011-2015 opportunities are significant, **35% of US pharmaceutical sales (=\$75Bn) are at risk with 66 major drugs** that will lose patent or exclusivity protection through 2015
  - **In 2010**, biosimilars generated around **\$311 million** in sales (+ 250% vs 2009), with Sandoz's omnitrope accounting for the vast portion of those sales (33% market share) and some estimates shows that the biosimilar market **will reach \$2.5Bn in 2015**
  - **\$62bn in biologics** will go off-patent by 2015, this space being unlikely to be so competitive as the traditional small molecule generics market, for producers who will meet regulatory and production challenges
  
- **How to demonstrate value for money to payors?**
  - **In Europe, continuous savings sought by payers** everywhere via generics, DRGs, price cuts, promotions cuts, etc...
  - In the US, clouds in 2010-2011 due to **Medicaid, Medicare reform, Drug importation and toughening of FDA**
    - President-elect Obama healthcare reform was approved by the congress on March 2010
    - The so called "Medicare Donut Hole" close up will cost \$80Bn to the pharma industry (but the volume increases could offset the loss)
    - Biosimilars will have an easier FDA approval
    - However, secondarily to democrats' defeat at mid-term elections, it is too early to predict to what extent the reform will be reconsidered

Sources: Bionest Partners, Cowen, Société General, Scrip, News Analyzer, Afssaps, IMS

## The pharmaceutical industry: What is at stake for 2011 – 2015? (Cont'd)

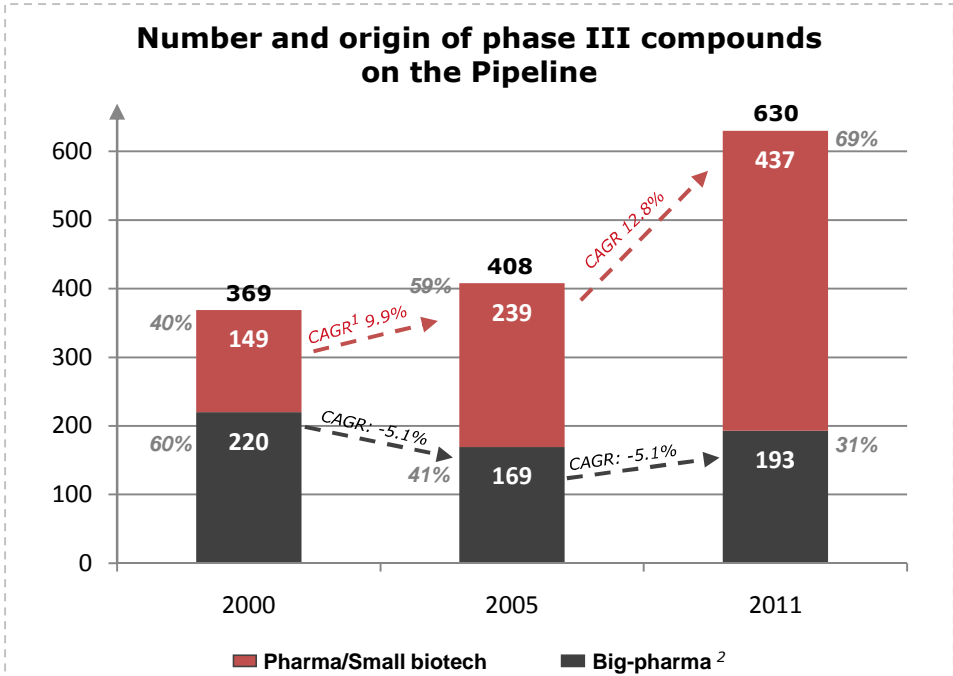
### Key Challenges (2/4)

- **Big-pharma companies have traditionally developed their business on chemical drugs...**
  - **Small and Middle structures-derived products are increasingly playing an important part of the global Pharma market**
    - In 2008, it is estimated that 68% of the 676 phase II and III compounds in the oncology area were of small pharma and biotech origin. In 2009 this figure reached 73% of 829 compounds
    - Between 2003 and 2008, within the 100 world's top drugs, the percentage of sales of biotechnology products (bioengineered vaccines + biologics), grew from 11% to 28%. This figure could reach 50% in 2014.
  - **For the moment, biotechnology products attract high prices ... but this may change in the next five years (see Bionest Report 2007 : "Up or out In oncology?")**
    - J&J Velcade® - Multiple myeloma – Case with the NICE (Sept. 2007)
    - Roche Tarceva® - Lung cancer – "Interim" price decrease to be included in NICE guidelines (Oct. 2007)
    - The UK's National Institute for Health and Clinical Excellence (NICE) has made a preliminary ruling in mid-2008 stating that Avastin®, Nexavar®, Sutent® and Torisel® are not effective enough to warrant their high cost and shouldn't be prescribed to new patients in Britain
- **Big-pharma needs to bolster its R&D productivity...**
  - **Capitalize on Clinical Development know-how**
  - **Drastically change its innovation and discovery processes**
- **...most Biotech Research is highly innovative**
  - **First-in-class**
  - **Complex and intellectual property ring-fenced manufacturing processes**

Sources: EvaluatePharma, PharmaProjects, Cowen, News Analyzer, Bionest Partners

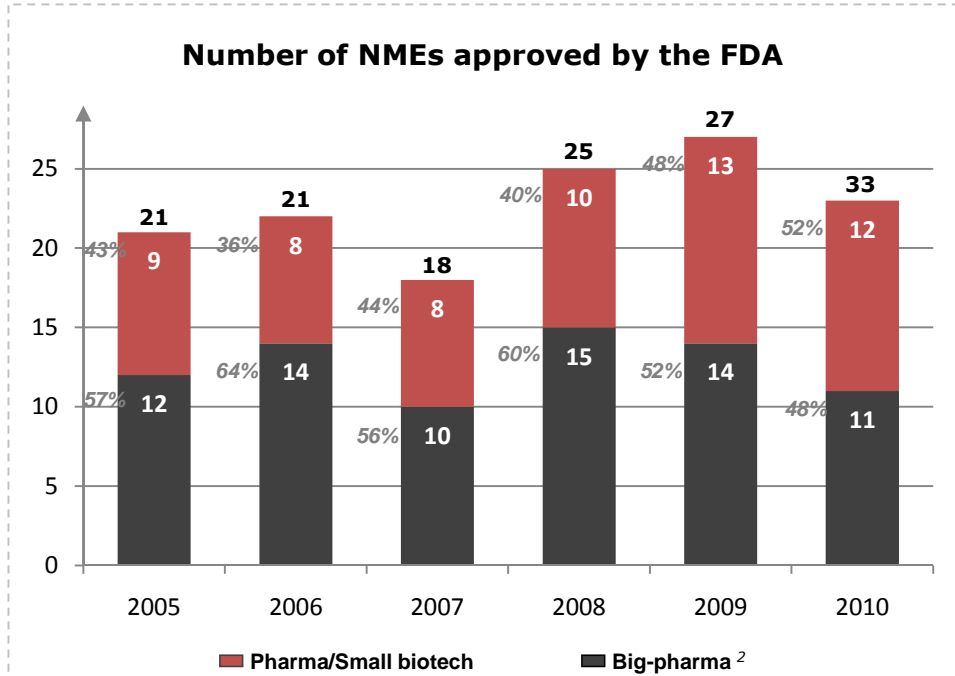
# The changing balance of productivity in favor of biotech, but successful approvals remain the spearhead of big-pharma companies

## Number and origin of Phase III Compounds



- Small biotech/pharma companies gained higher R&D productivity in comparison with big pharma companies
  - From 40% in 2000 to 69% in 2011 of total Phase III compounds were of small biotech/pharma origin

## FDA Approvals of NMEs<sup>2</sup>



- In 2007, the FDA changed the way it assesses benefits and risks for new products approval, it was extremely concerning to biotech industry...
- ... the outcome of this effort was an increase of registration length which caused the biotech rebound in terms of NMEs approved since 2008

Sources: PharmaProject, Windhover's Strategic Intelligence Systems and Bionest Partners

<sup>1</sup> Compound Annual Growth Rate

<sup>2</sup> The top 50 companies by 2008 sales

## The pharmaceutical industry: What is at stake for 2011 – 2015? (Cont'd)

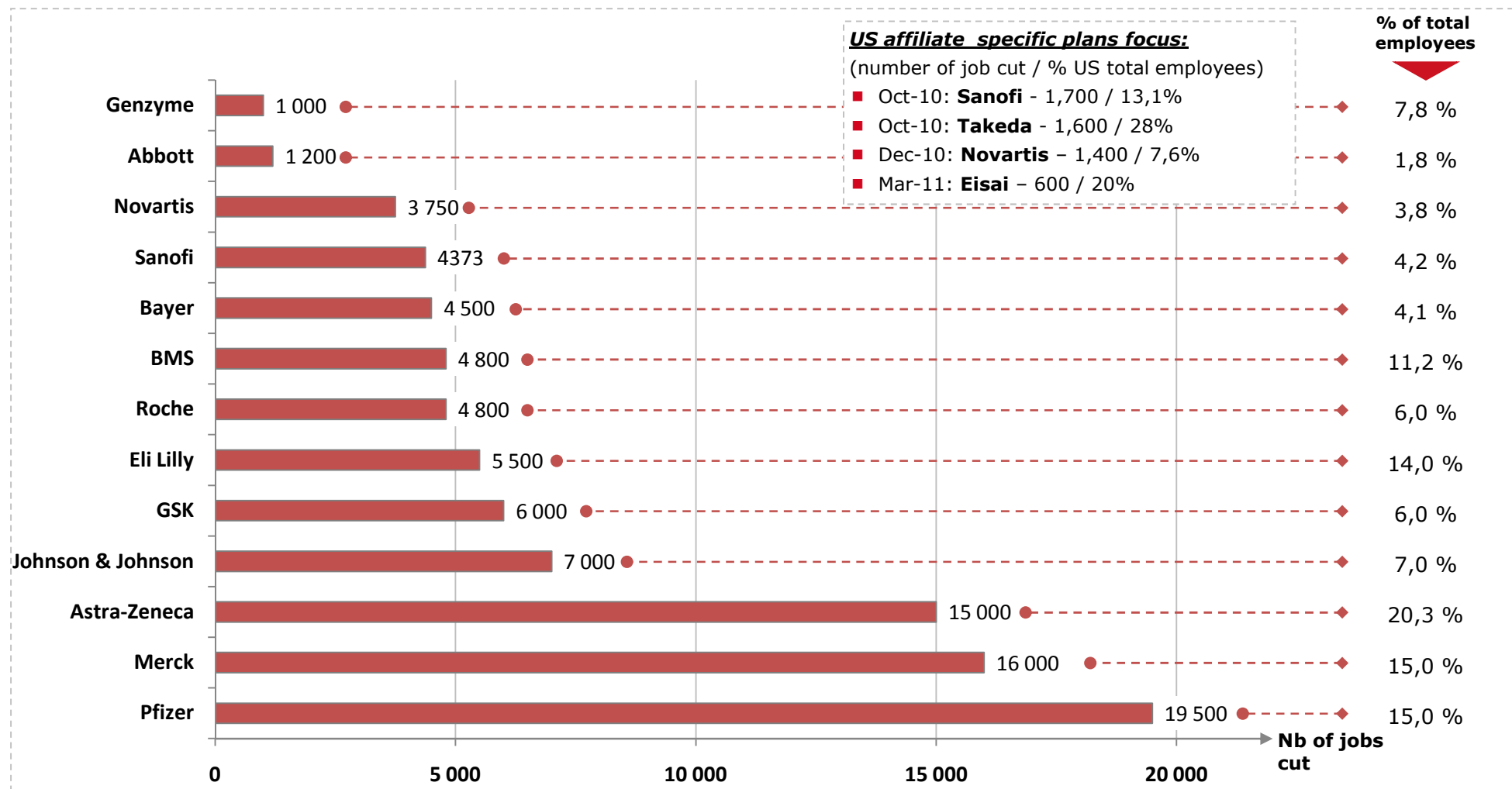
### Key Challenges (3/4)

- **How to reengineer internal organization for more productivity?**
  - **R&D productivity**
    - **Pfizer has focused its worldwide oncology and ophthalmology R&D activities in a single site (fully integrated R&D campus located in La Jolla-California)**
    - **Sanofi has modify his R&D model**
      - **R&D teams have been restructured in dynamic units (biotech model)**
      - **R&D projects will be built over consumers unmeet needs**
      - **Development of exploratory structure to set collaborations with outside entities**
  - **How to remain focused on high added-value activities?**
    - **AstraZeneca aims at outsourcing all its drug manufacturing activities within ten years and externalize the HR functions**
      - In Europe, out of five plants, three plants will be closed and the other two will decrease their production by 2013
      - Meanwhile, AstraZeneca have rose its investments in Wuxi (China)
      - Attempt in march 2010 of externalization of the HR functions to Argentina, Philippines, Spain and Poland
    - **In France, the industry is expected to cut workforce in production by 30% between 2005 and 2015.**
      - Since 2005, seven manufacturing plants have been sold by pharmaceutical companies: Pfizer (2), Abbott, Schering Plough, Boehringer-Ingelheim, AstraZeneca, GSK and other three are on sale
      - Other production sites have been restructured (e.g. Vitry-sur-Seine Sanofi Aventis plant, in which 350 jobs will be shed)
  - **ROI of promotional expenditure**
    - **Sales force down-sizing**
      - **The LEEM expects a cut from 6,000 to 7,000 of the actual 21,800 sales reps jobs in France by 2014**
    - **Improving external stakeholder management such as Health Authorities, payers, patient associations, medical societies...**

Sources: News Analyzer, LEEM, Company press releases, Bionest Partners

## Deep restructuring projects announced by the top pharmaceutical companies

### Job cut plans announced between 2008 and early 2011 by big-pharmas



Source: Bionest Partners

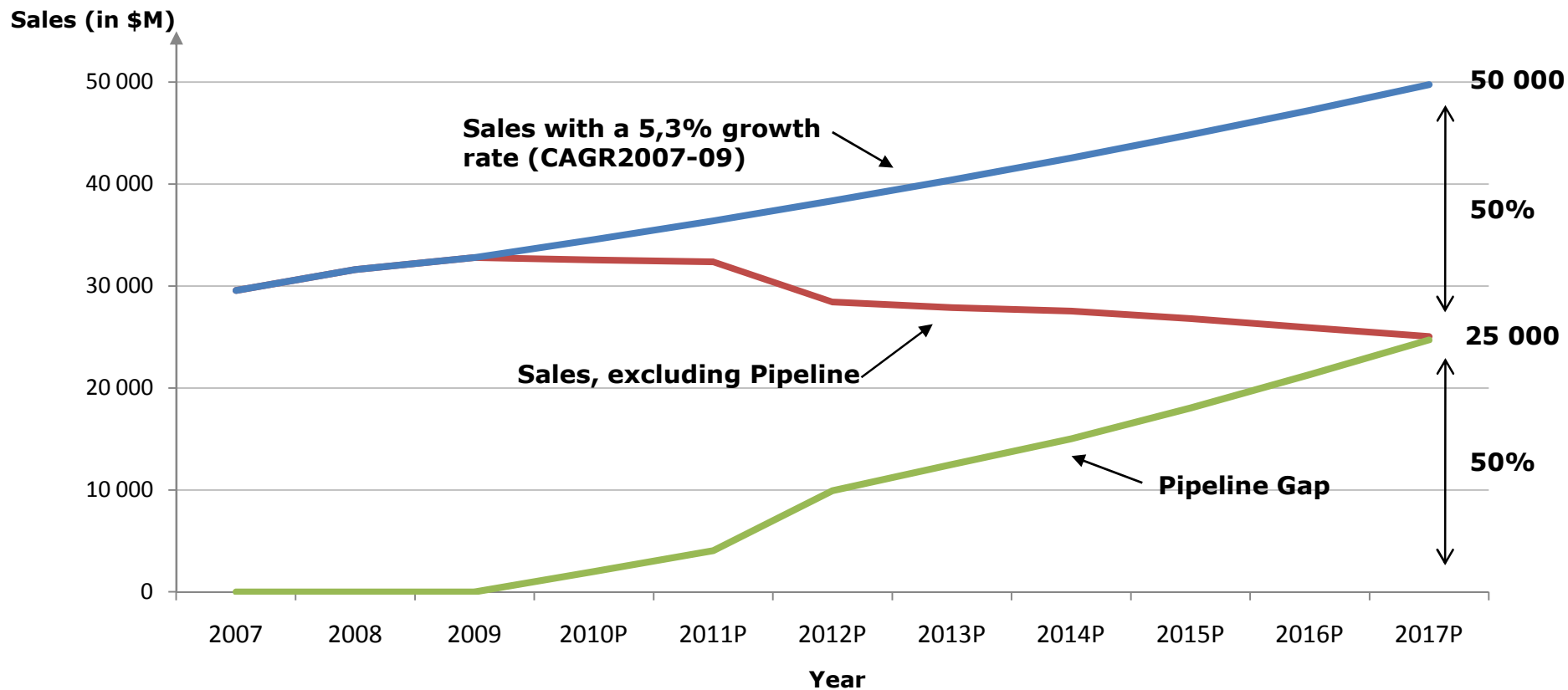
## How to integrate innovation within the current pharmaceutical industry paradigm shift ?

### *Key Challenges (4/4)*

- How to integrate innovation within the current pharmaceutical industry paradigm shift ?
  - Ability to roll out new promotional models (e.g. sales force hybrid approach)
  - Moving from sponsoring to partnering with patients associations
  - Moving from free services favoring differentiation to fee value-added services
  - Ability to leverage NTIC opportunities
  - Moving from drug marketing to patient health management
  - Affordability of innovative drugs in emerging countries

# Astra Zeneca's patent time bomb: A paradigm applicable to many other pharma companies

**Sales from New Products Needed to Achieve 5% Sales Growth (i.e. top-line related)**



Source: Cowen, Bionest Partners

## AstraZeneca: Partnership activity since end-2005

### AstraZeneca Partnership activity – December 2005 to end 2010 (1/2)

- **27 major deals signed since dec. 2005 : \$1Bn for upfront payments and at up to \$8.1Bn for milestones**
  - **20 deals are related to New Chemical Entities (NCEs), 2 on life-cycle management initiatives and 5 on technologies**

Date	Company	Product	Area	Phase	Upfront	Milestones	Royalties	Deal
Mar. 10	<b>Xenome Limited</b>	Xdiscover(TM) venom peptide library	Drug Screening	-			Undisclosed signing fees	Global rights
Feb. 10	<b>Rigel Pharma</b>	Fostamatinib Disodium (R788)	Arthritis	Phase II	<b>100</b>	<b>1145</b>	Stepped double-digit	Global rights
Jan. 10	<b>CrystalGenomics</b>	Discovery programs	Infectious	Discovery			Undisclosed signing fees	Research collab.
Jan.10	<b>Dako</b>	Diagnostics tests companion	Oncology	BioMarkers			Undisclosed signing fees	Co-Dev
Dec. 09	<b>Biovitrium</b>	Leptin modulator programme	Obesity	Preclinical	<b>6</b>	<b>180</b>	-	Global rights
Dec. 09	<b>Targacept</b>	TC-5214	MDD <sup>4</sup>	Phase II	<b>200</b>	<b>1040</b>	Stepped double-digit	Global rights
Sep. 09	<b>Nektar</b>	NKTR-118, NKTR-119	Gastrointestinal	Phase III	<b>125</b>	<b>375</b>	-	Global rights
Aug. 09	<b>Forest Laboratories</b>	Ceftaroline	Infection	Pre reg.			Undisclosed signing fees	Co-Dev./ Co-Prom. <sup>1</sup>
Dec. 08	<b>MAP Pharmaceuticals</b>	Unit Dose Budesonide	Paediatric Asthma	Phase III	<b>40</b>	<b>275</b>	-	Co-Dev./ Co-Prom.
Jun. 08	<b>Columbia Univ. Med.</b>	Novel therapeutics	Type 2 Diabetes	Discovery			Undisclosed signing fees	Co-Development
Mar. 08	<b>Cancer Research UK</b>	AZD0424 - Tyrosine Kinase Inhib.	Oncology	Discovery			Undisclosed signing fees	Charity clinical dev.
Dec. 07	<b>Compendia Bioscience</b>	Gene expression profiles & tools	Oncology	Discovery			Undisclosed signing fees	Global rights
Sep. 07	<b>Verus Pharmaceuticals</b>	Pediatric programs	Asthma	Discovery	<b>30</b>	<b>280</b>	-	Global rights
Aug. 07	<b>Biofocus</b>	Discovery programs	Infectious	Discovery		<b>938</b>	-	Co-Development
Jul. 07	<b>Silence Therapeutics</b>	RNAi therapeutics	Respiratory	Discovery	<b>15</b>	<b>400</b>	-	Global rights
May 07	<b>EpiStem</b>	Biomarkers technology	Oncology	Discovery	-	-	-	-
Feb. 07	<b>Regeneron</b>	Velocimmune techn.	HMA <sup>2</sup>	Discovery	<b>20</b>	<b>100</b>	Mid-single digit royalty	Co-Development
Jan. 07	<b>Palatin Technologies</b>	Melanocortin receptor	Obesity	Discovery	<b>10</b>	<b>300</b>	Stepped royalties	Co-Dev./ Co-Prom.
Jan. 07	<b>BMS</b>	Saxagliptin / Dapagliflozin	Type 2 Diabetes	Phase III	<b>100</b>	<b>650</b>	Up to \$300M per product	Co-Dev./ Co-Prom.
Jan. 07	<b>Argenta Discovery</b>	Bronchodilators	COPD	Discovery	<b>21</b>	<b>500</b>	-	Co-Development
Sep. 06	<b>Dynavax</b>	TLR-9 agonist	Asthma/COPD	Discovery	<b>10</b>	<b>na</b>	na	Co-Development
Aug. 06	<b>Pozen</b>	Nexium+Naproxen <sup>3</sup>	Pain	Phase III	<b>40</b>	<b>335</b>	5-15%	Co-Development
Jul. 06	<b>Abbott</b>	Crestor+Fenofibrate <sup>3</sup>	Cholesterol	Phase III	<b>na</b>	<b>na</b>	na	Co-Dev./ Co-Prom.
Apr. 06	<b>Abraxis Bioscience</b>	Abraxane	Breast Cancer	Launched	<b>200</b>	<b>na</b>	AZN get 22%	US Co-Promotion
Dec. 05	<b>TargaCept</b>	Isproncline	Alzheimer	Phase II	<b>10</b>	<b>300</b>	Stepped double-digit	Global rights
Dec. 05	<b>Protherics</b>	CytoFab	Sepsis	Phase II	<b>30</b>	<b>300</b>	20%	Global rights
Dec. 05	<b>AtheroGenics</b>	AGI 1067	Cardiovascular	Phase III	<b>50</b>	<b>950</b>	Stepped royalties	Global rights

<sup>1</sup> in all markets outside the United States, Canada and Japan

<sup>2</sup> Human Monoclonal Antibodies

<sup>3</sup> Life-cycle management initiatives

<sup>4</sup> Major Depressive Disorder

Values in US\$ million

Sources: Recap, Bioworld snapshot, In Vivo, AZ press releases and Bionest Partners

## AstraZeneca: Partnership activity since end-2005 (Cont'd)

### AstraZeneca Partnership activity – December 2005 to end 2010 (2/2)

#### ■ 5 acquisitions over the last years : \$17.2 Bn cash investment

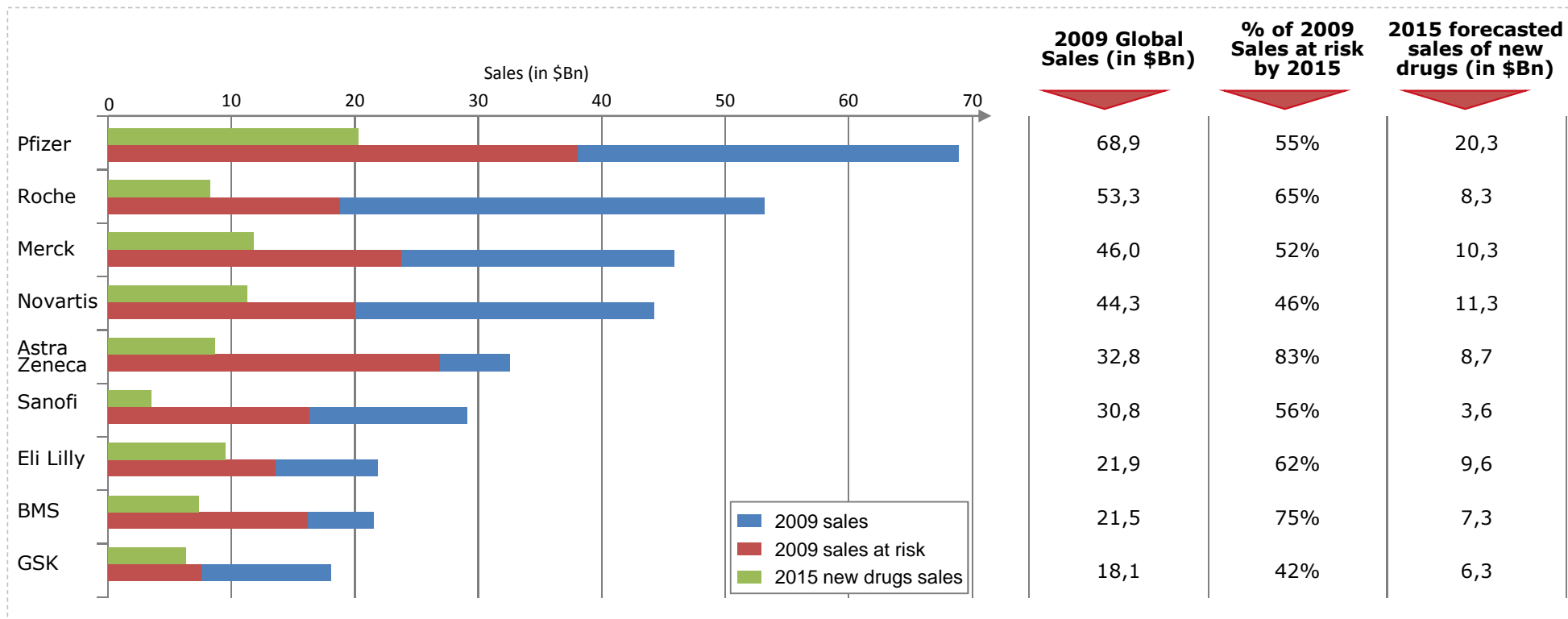
- **December 2005: Acquisition of KuDOS<sup>1</sup> for US\$ 210 M**
  - **Area:** Cancer / DNA repair platform
  - **Lead product:** Patrin® (DNA repair inhibitor), Phase II in solid tumors
- **May 2006: Acquisition of Cambridge Antibody Technology (CAT) for US\$1,200 M**
  - **Area:** Biologics platform
  - **Lead products:** Royalty stream on Humira®, other products in Phase II
  - **Price paid** = 67% premium to last stock price
- **February 2007: Acquisition of Arrow Therapeutics<sup>1</sup> for US\$150 M**
  - **Area:** Anti-virals platform
  - **Lead products:** Two anti-Hepatitis C Virus compounds (HCV) in Phase I and one oral anti-Respiratory Syncytial Virus (RSV) in Phase II
- **May 2007: Acquisition of Medimmune for US\$15,2 Bn**
  - **Area:** Oncology, infectious and inflammation diseases
  - **Lead products:** Synagis® (palivizumab), Ethyol® (amifostine), and FluMist® (Influenza Virus Vaccine Live, Intranasal), with 45 additional products in clinical testing
  - **Price paid** = 53.3% premium to last stock price
- **Jan 2010: Acquisition of Novexel for US\$425 M**
  - **Area:** Resistant infectious diseases
  - **Lead products:** ceftazidime/NXL-104 (CAZ104) and ceftaroline/NXL-104 (CEF104) in late-stage development

Sources: Bioworld snapshot, In Vivo, AZ press releases and Bionest Partners analyses

<sup>1</sup> Privately owned biotechnology company

# Most big-pharma companies will see a substantial proportion of their 2009 sales jeopardized by 2015 due to the lost of blockbusters patent exclusivity

## Coverage of Generic threat between 2009 and 2015 (1/2)



### Major products at risk by 2015

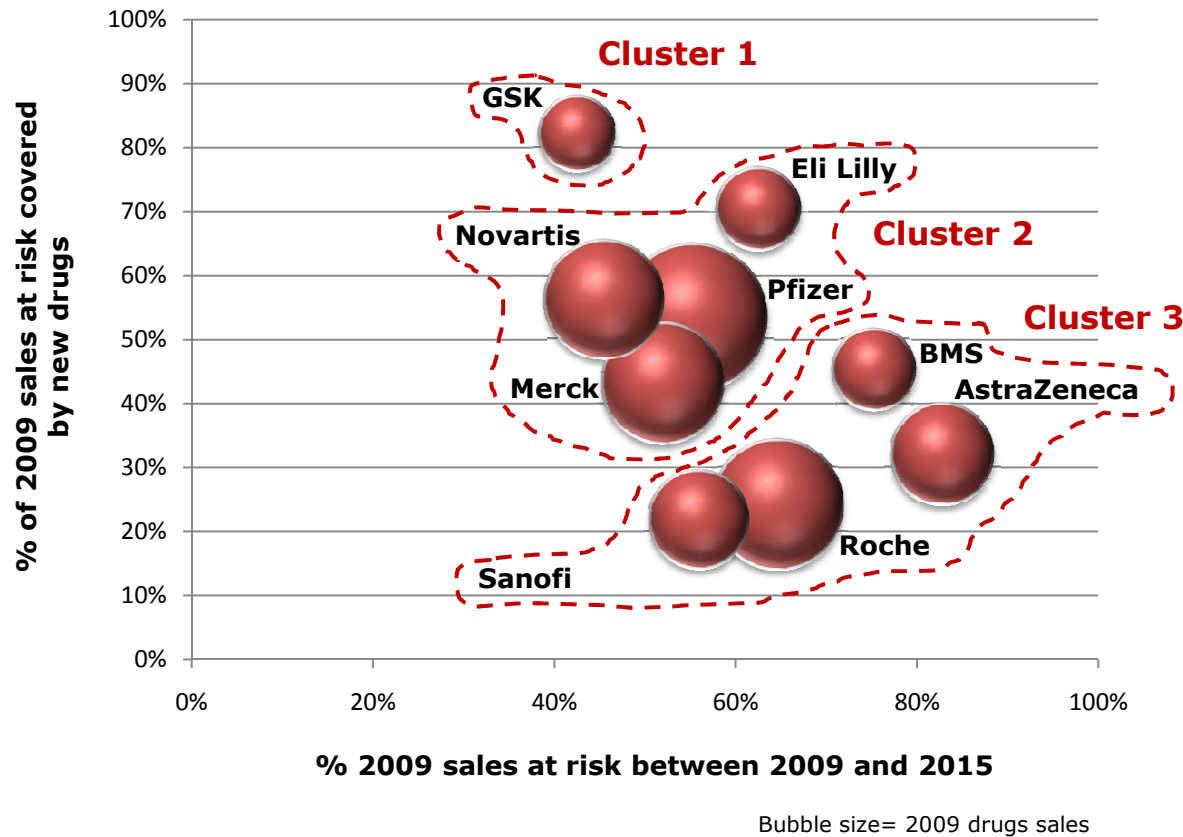
Company	Drug	2009 sales (in \$Bn)	Company	Drug	2009 sales (in \$Bn)	Company	Drug	2009 sales (in \$Bn)	Company	Drug	2009 sales (in \$Bn)
Pfizer	Lipitor®	11,4	AZ	Nexium®	5,0	Eli Lilly	Zyprexa®	4,9	BMS	Plavix®	6,1
	Effexor®	3,2		Seroquel®	4,9		Cymbalta®	3,1		Abilify®	2,6
	Enbrel®	6,3		Crestor®	4,5		Humalog®	2,0		Avapro®	1,3
	Celebrex®	2,4		Symbicort®	2,3		Gemzar®	1,4		Atripla®/Sustiva®	1,3
	Viagra®	1,9		Arimidex®	1,9		Evista®	1,0		Baraclude®	0,7

Sources: Cowen, Bionest Partners

**For many big-pharma companies, forecasted sales of the incoming pipeline will not be sufficient to manage the risk pending over a high proportion of their sales**

**Coverage of Generic threat between 2009 and 2015 (2/2)**

**Coverage of generic threat between 2009 and 2015**



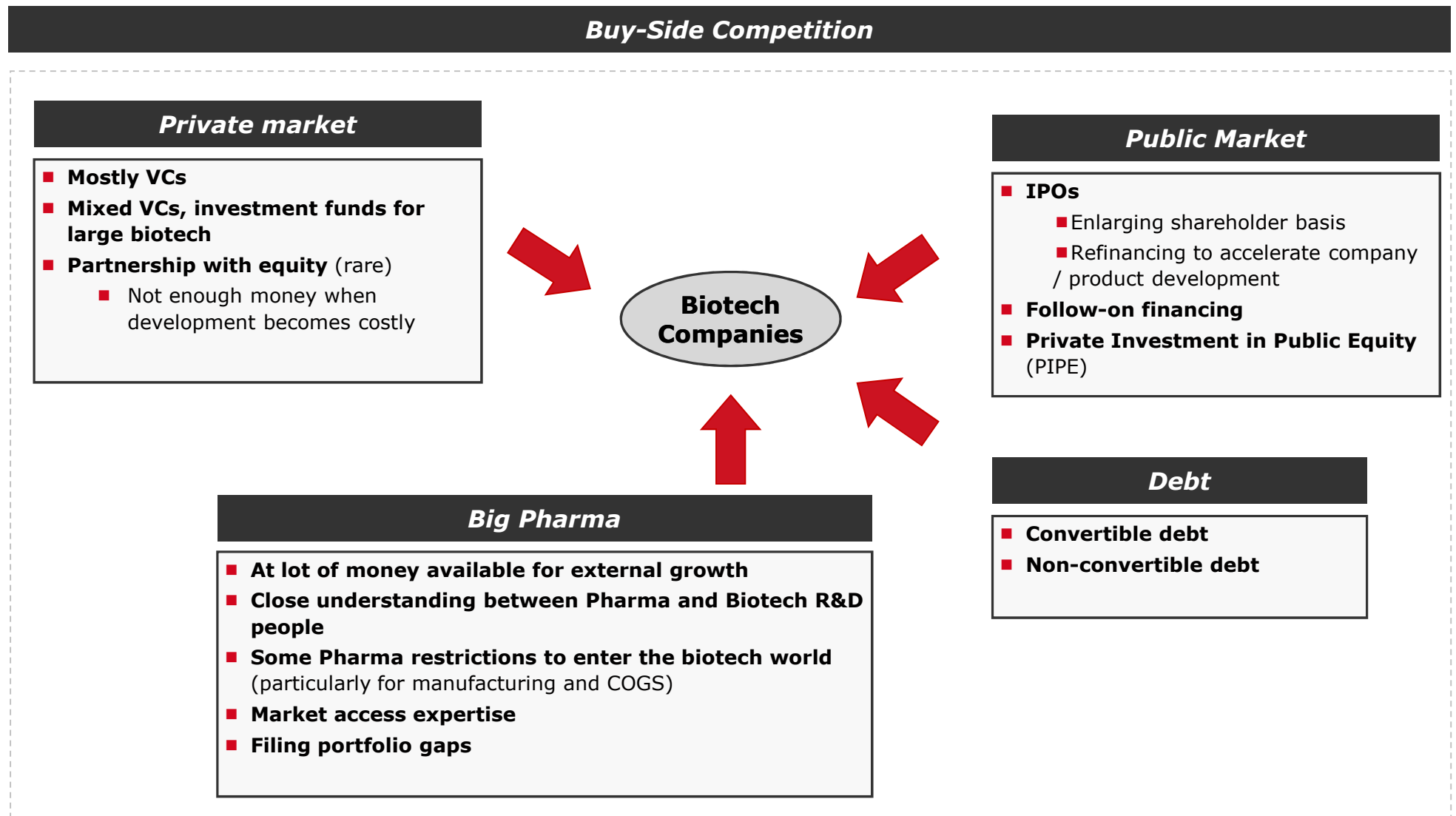
■ **Cluster 1:** Pharmaceutical company with new products sales that is close to encompass the generic threat

■ **Cluster 2:** Pharmaceutical companies facing intermediate generic threat, but which manage that risk with a fairly promising pipeline

■ **Cluster 3:** Pharmaceutical companies dealing with high proportion of their 2009 sales under generic threat by 2015 and which have difficulties to manage that risk with their own pipeline

Sources: Cowen, Bionest Partners

# Who is competing to partner / buy biotech companies?



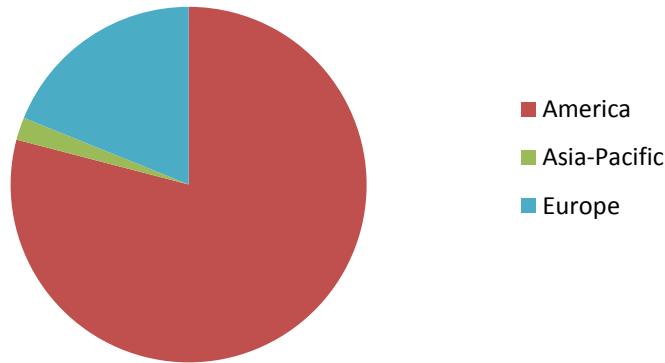
Source: Bionest Partners

# Fundings of biotech companies have strongly rose during the last decade, with the US being the "golden region"

## Biotech funding sources

### Spilt per country

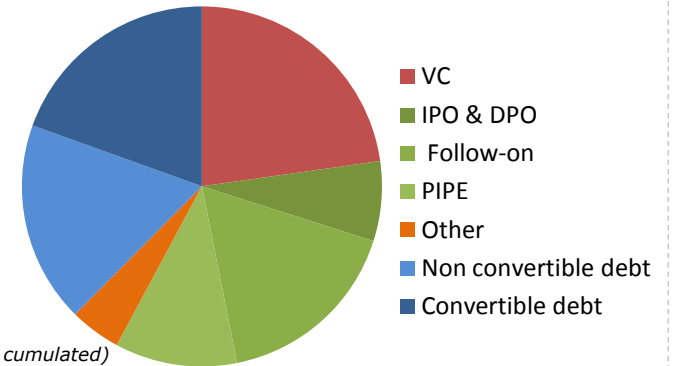
Raised funds split per Biotech companies location<sup>1</sup>



1- Total: \$ 227,7Md(2001-10 cumulated)

### Split per financing type

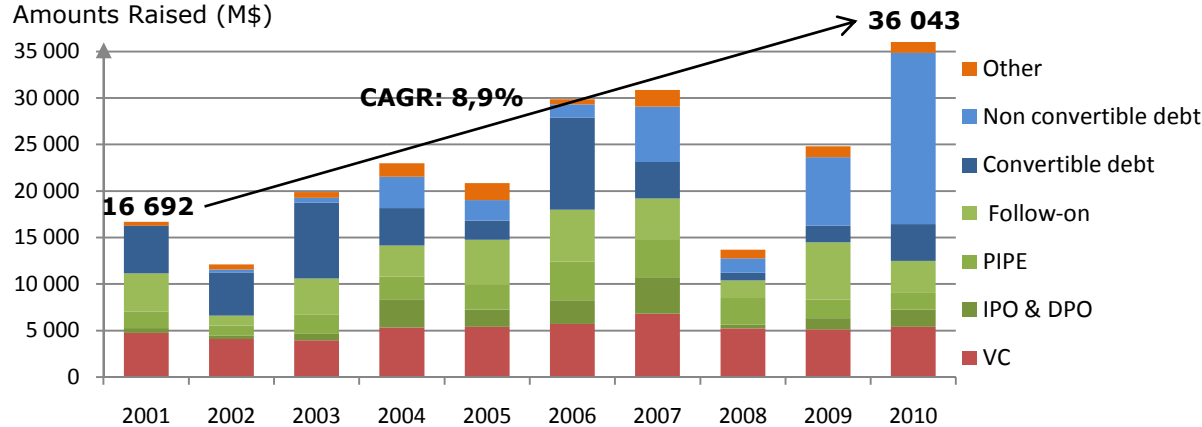
Biotech companies funding sources<sup>1</sup>



1- Total: \$ 227,7Md(2001-10 cumulated)  
 VC: Venture Capital; IPO: Initial Public Offering;  
 DPO: Direct Public Offering; Follow-on: Follow-on financing PIPE (Private Investment in Public Equity)

## Biotech funding sources throughout years

Amounts Raised (M\$)

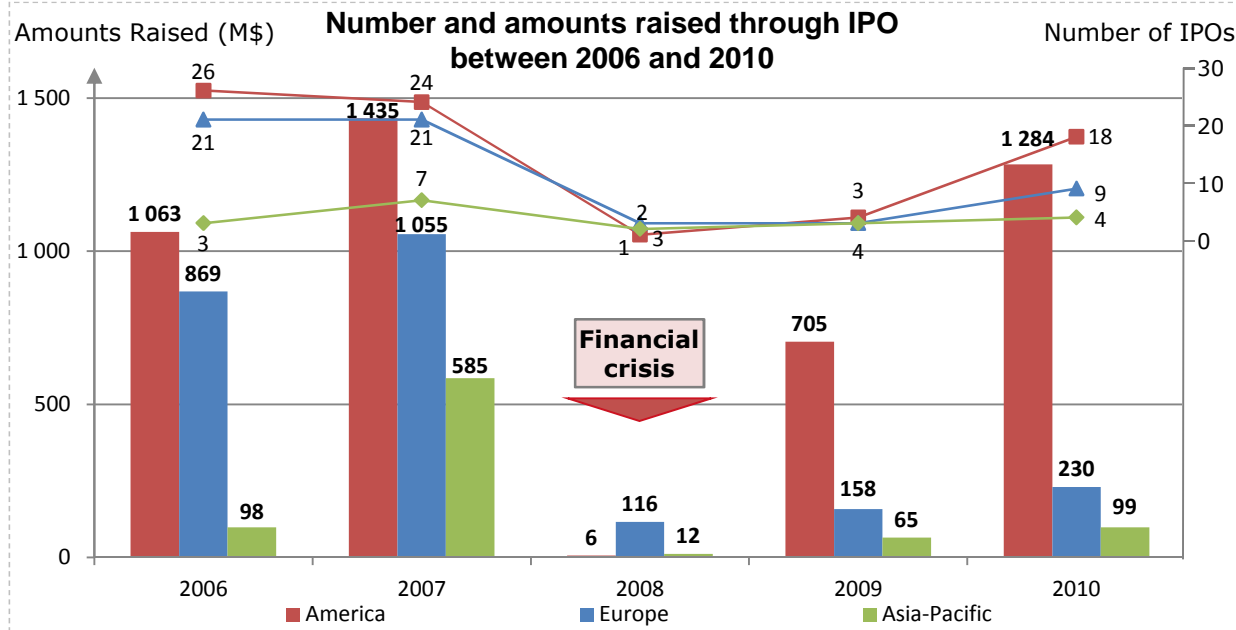


- Biotech funding has rosed during the last 10 years
- The US are the "golden region"
- The 2002 and 2008 crises have strongly impacted biotech companies but fundings have since recovered

Sources: BCIQ and Bionest Partners

# The biotech initial public offering (IPO) market recovered slightly since the 2008 crisis, mainly driven by the USA

## Biotech IPOs between 2006 and 2010



## Comments

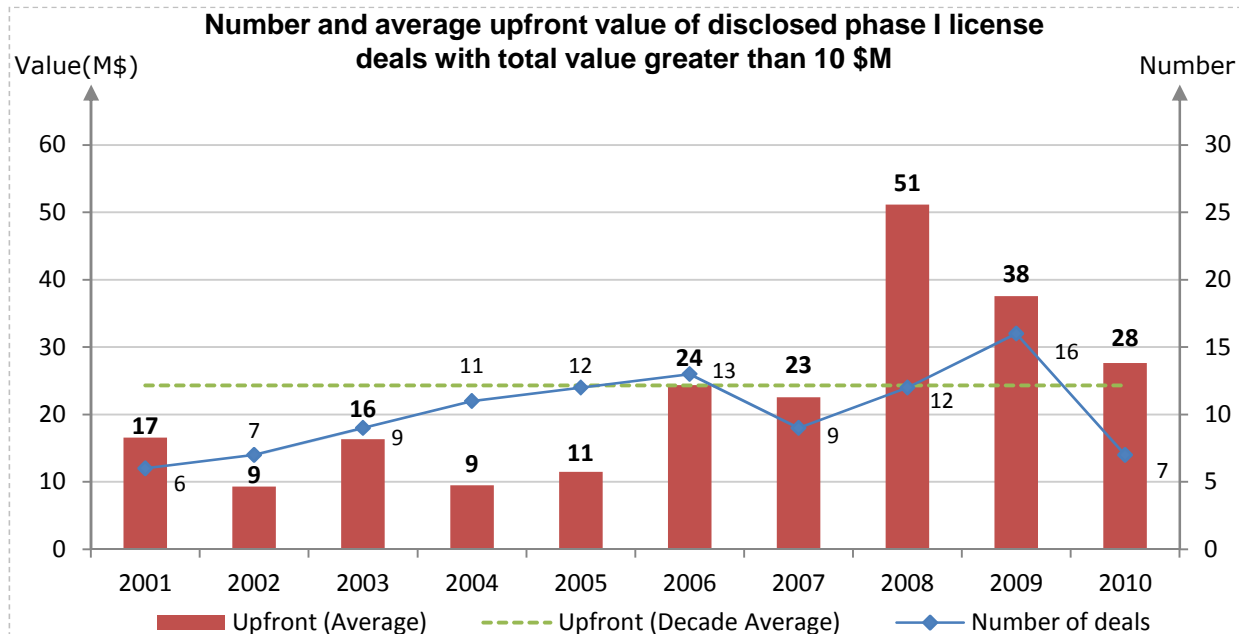
- **After having reach records in 2007 (\$3Bn of cumulative amounts raised), the IPO window collapsed in 2008 (\$0,1Bn)**
  - Since, a rebirth occur heterogeneously between regions
  - The US IPO market has rebound while it still close in Europe and Asia
- **The same dynamics has been observed in terms of number of IPOs conducted**
- **Nevertheless, the average amount raised through IPO mechanism has slightly increased from \$41M in 2006 to \$52M in 2010**

- **2010 US IPOs market was bolstered by two majors IPOs > \$200M:**
- **Ironwood Pharmaceuticals:**
  - \$215,6M raised through IPO
  - More than \$300 million since it was formed in 1998.
  - Doesn't have any product on the market, but has completed two pivotal trials for its lead drug, linaclotide, for chronic constipation.
- **Pacific Biosciences:**
  - \$200,0M raised through IPO
  - \$370M already garnered in venture funds
  - Makes genetic analysis technology focused on helping researchers investigating biochemical processes with an initial focus in the DNA sequencing market.
  - Had \$135 million in revenue in 2009 but has yet to turn a profit.

Sources: BCIQ and Bionest Partners

## Phase I licensing deals have steadily grown both in number and value across the last decade

### Phase I deals



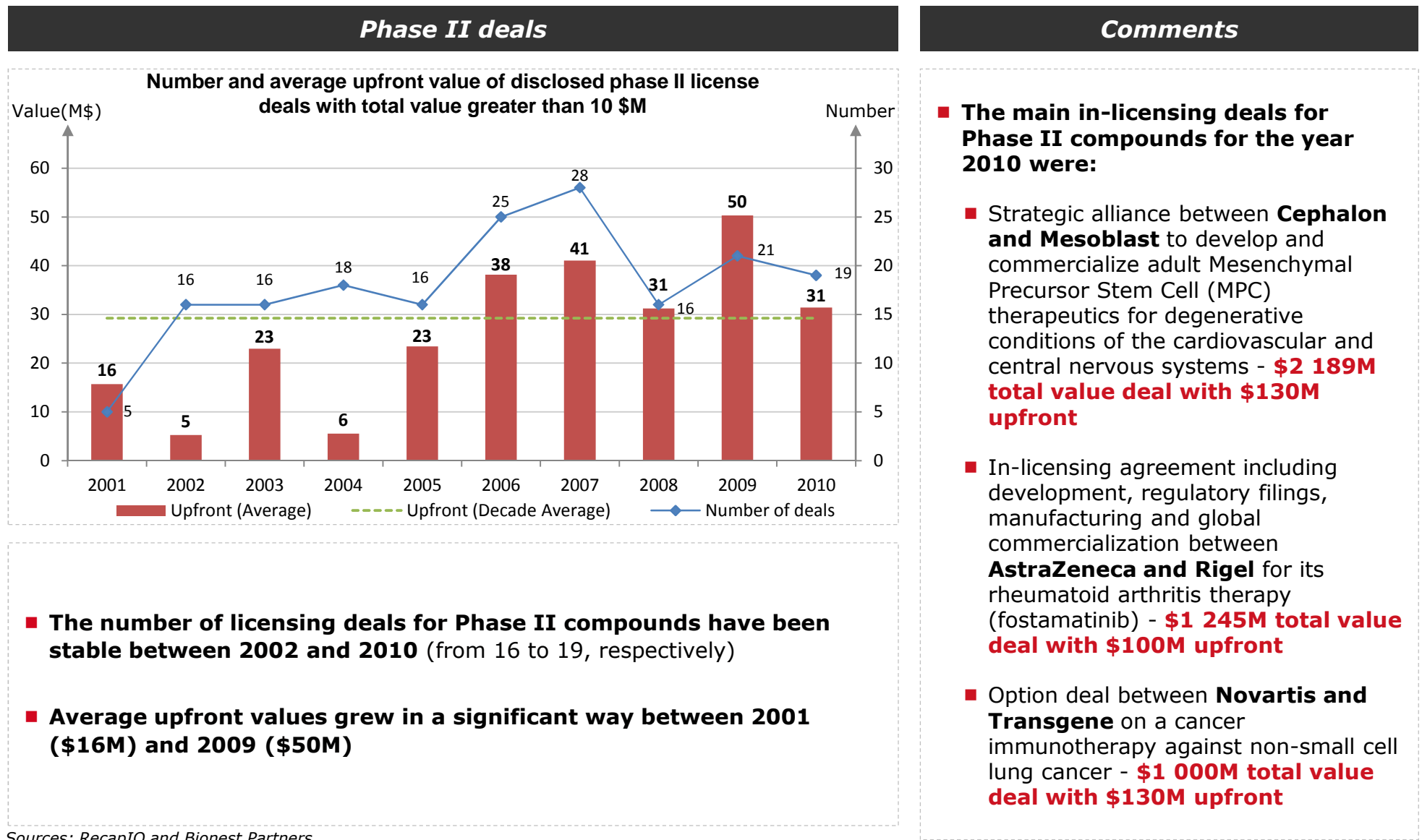
- The number of licensing deals for Phase I compounds has substantially increased between 2001 and 2009 (i.e. x2.6, from 6 to 16 respectively)
- The average upfront value has steadily grown with a peak that occurred in 2008 (\$51M)

Sources: RecapIQ and Bionest Partners

### Comments

- The main in-licensing deals for Phase I compounds for the years 2009/10 were:
  - In-licensing an development agreement between **Forest and TransTech** on early-stage diabetes meds (TTP399 in Phase I and other early-stage products) - **\$1 105M total value deal with \$50M upfront**
  - In-licensing, co-development and research agreement between **Sanofi and Exelixis** for three oncology inhibitors (XL147, XL765 & PI3K) - **\$1 161M total value deal with \$140M upfront**
  - Global collaboration between **Bristol-Myers Squibb and ZymoGenetics** for a novel type 3 interferon (PEG-Interferon lambda) in Phase Ib for the treatment of Hepatitis C, and its related development program - **\$1 107,0M total value deal with \$105M upfront**

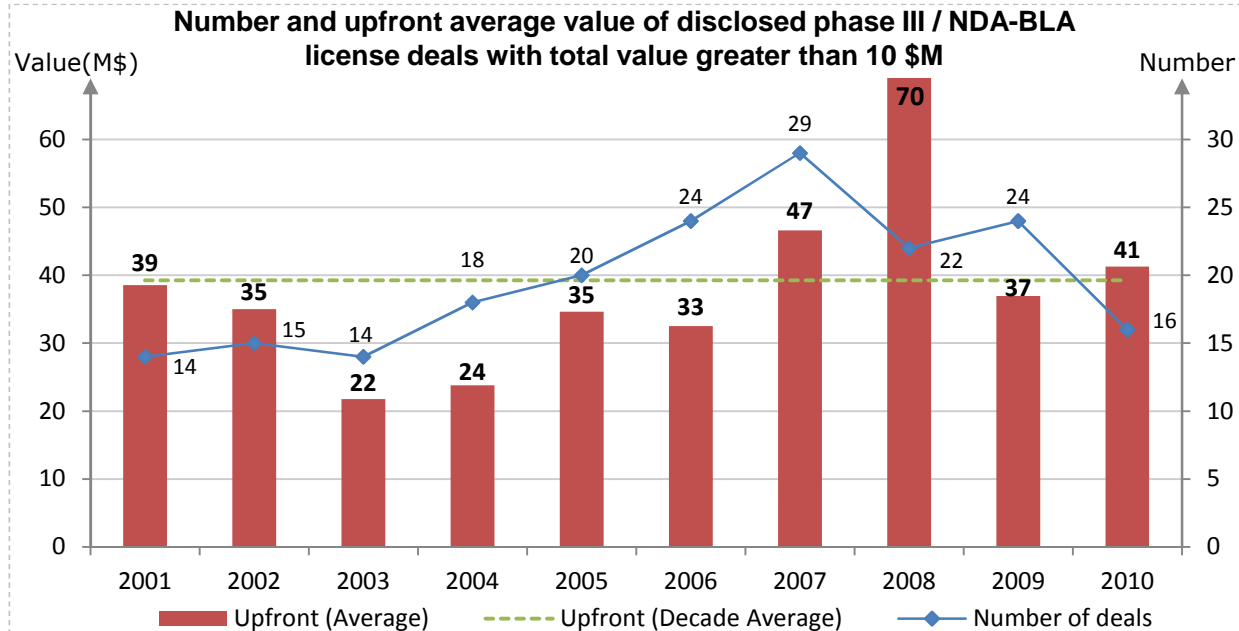
## The number of phase II licensing deals has strongly increased until 2007, with average upfront values that are stable since 2006



Sources: RecapIQ and Bionest Partners

## The number of phase III deals increased until 2007 while average upfront values has strongly fluctuated with a peak that occurred in 2008

### Phase III / NDA - BLA deals



### Comments

■ **The main in-licensing deals for Phase III compounds for the years 2009/10 were:**

- Marketing and supply agreement between **Arena and Eisai** on lorcaserin (5-HT<sub>2C</sub> serotonin receptor agonists, first in class) for obesity and weight management in the USA following FDA approval - **\$1 370M total value deal with \$50M upfront and royalty rate of 31.5%**
- North american co-promotion deal between **Takeda and Orexigen** on its weight-loss drug Contrave® (naltrexone SR and bupropion SR combination), that was about four months away from the final FDA approval decision - **\$1 050M total value deal with \$50M upfront and co-promotion rights**
- Double in-licensing deal between **Novartis and Incyte**, including the ex-US rights for a Phase III JAK inhibitor first-in-class treatment (INCB18424) for myelofibrosis and global rights for an early-stage cMET inhibitor (INCB28060) targeting tumor invasion and drug resistance in certain cancers - **\$1 310M total value with \$210M upfront and royalties**

- **The number of licensing deals for Phase III compounds has doubled between 2001 and 2007 with a jump from 14 to 29.** A steadily decreased occurred until 2010 (16 deals)
- **Upfront values have fluctuated during the last decade with a peak reached in 2008 at \$70M**

Sources: RecapIQ and Bionest Partners

## Big-pharma in-licensing strategies – Key learnings

### Key learnings from licensing dynamic

Stage	Number of deals	
	2001	2010
Phase I <sup>1</sup>	6	7
Phase II	5	19
Phase III/NDA-BLA	14	16
<b>Total</b>	<b>25</b>	<b>42</b>

Historical trend
→
↗ ↘
→
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Stage	Average upfront value	
	2001	2010
Phase I <sup>1</sup>	16,6	27,6
Phase II	15,7	31,4
Phase III/NDA-BLA	38,5	41,3
<b>Total</b>	<b>28,7</b>	<b>34,5</b>

Historical trend
↗
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Stage	Average total value	
	2001	2010
Phase I <sup>1</sup>	76,1	411,2
Phase II	122,5	464,2
Phase III/NDA-BLA	193,5	393,2
<b>Total</b>	<b>151,1</b>	<b>428,3</b>

Historical trend
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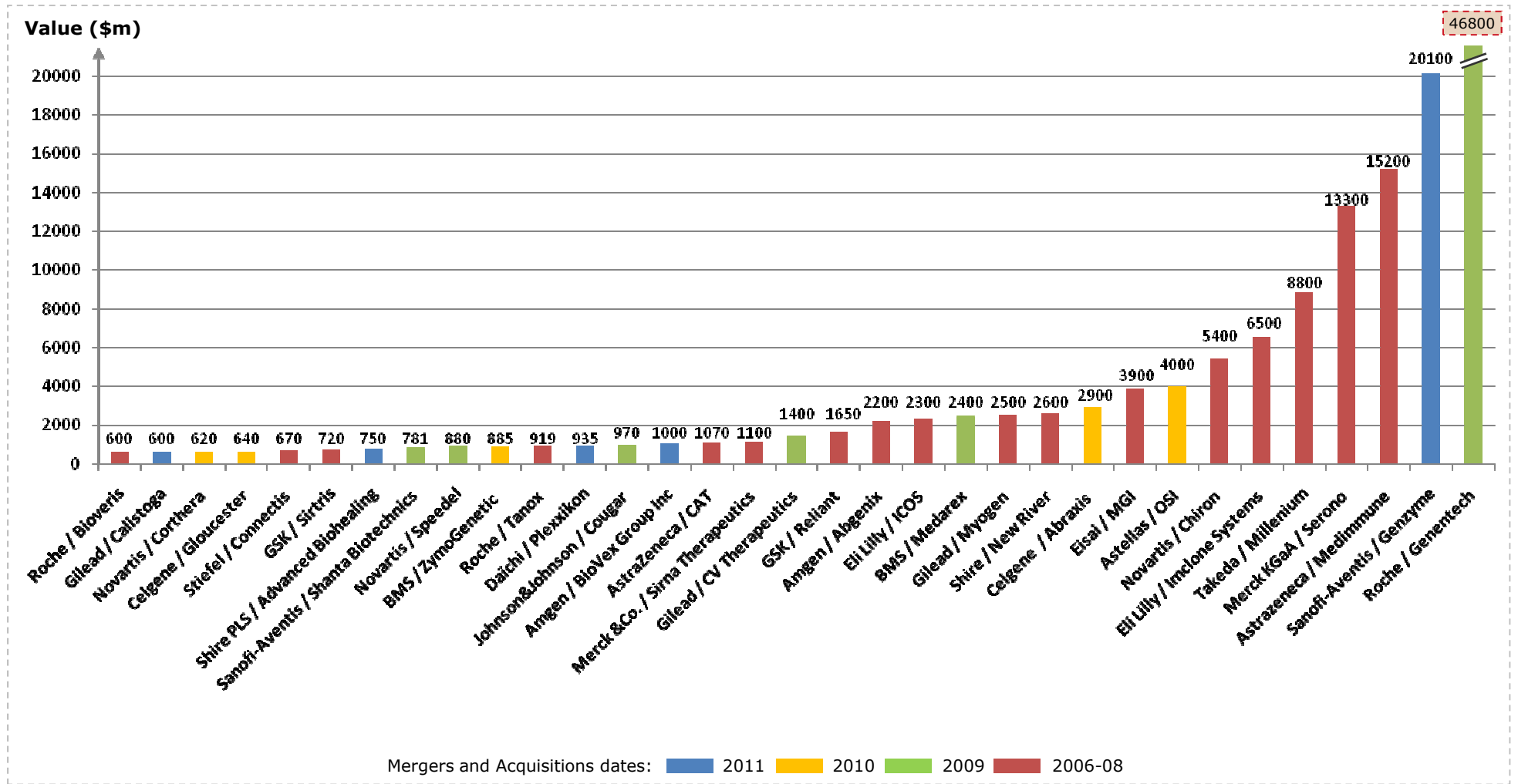
- **Strong increase of the number of licensing deals**
  - From 25 in 2001 to 42 in 2010
  - Deals mainly occurred for phase II compounds
- **Important increase of average upfront values at any development stage**
  - Phase III / NDA-BLA stage products are 50% and 30% more expensive than Phase I and phase II ones, respectively
- **Very strong increase of total deal values** (x2.8, from \$151,1M in 2001 to \$428,3M in 2010)
- **High potential drugs are transacted at early development stages**, explaining higher total values for phase II products
  - Phase III compounds have however more expensive upfronts, due to closer access to the market and more R&D costs already engaged

Sources: Recombinant Capital, Bionest Partners

<sup>1</sup> Disclosed deals with size greater than 10 \$Md

# Big-pharma biotech acquisition strategies: About 33 M&A deals over \$600M were completed from Jan. 06 to Sept. 11, with 20 deals exceeding \$1Bn

Major pharma M&A of biotech companies from January 2006 to September 2011 (>\$600M, Buyer/ Target)



Sources: MergerMarket and Bionest Partners

## How does big-pharma partnering activity work?

### How Does big-pharma partnering activity work?

**1** — Is demand way above offers (qualitatively and quantitatively)?



Yes

**2** — Is price always a real issue?



No

**3** — Are greed and jealousy drivers of some partnering transactions?



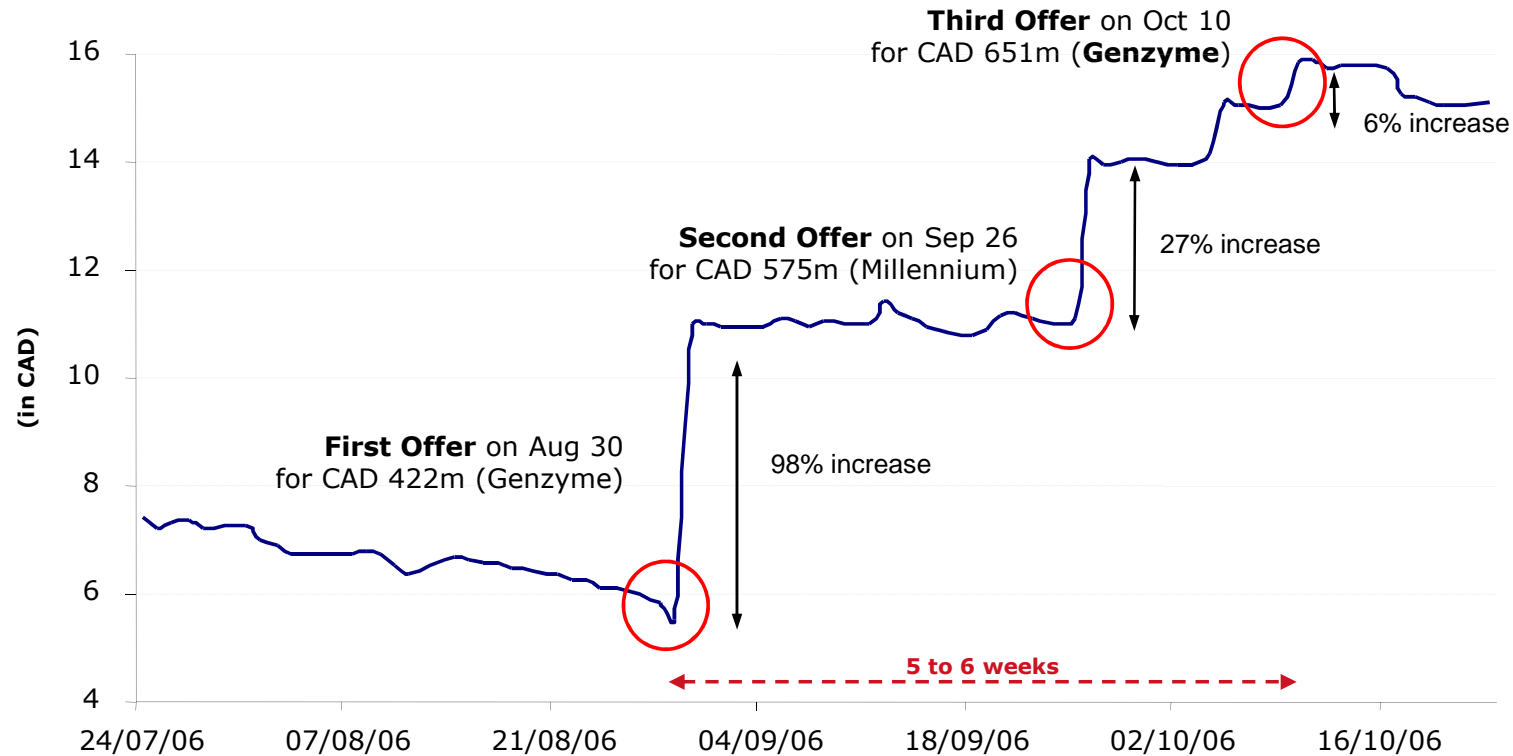
Yes

Source: Bionest Partners

# Case Study: AnorMED Acquisition



## Case Study: AnorMED Acquisition



Market Cap (CAD m)	231 → 458	231 → 581	231 → 662
Mkt Cap compared to Aug 29	2.0x	2.5x	2.9x

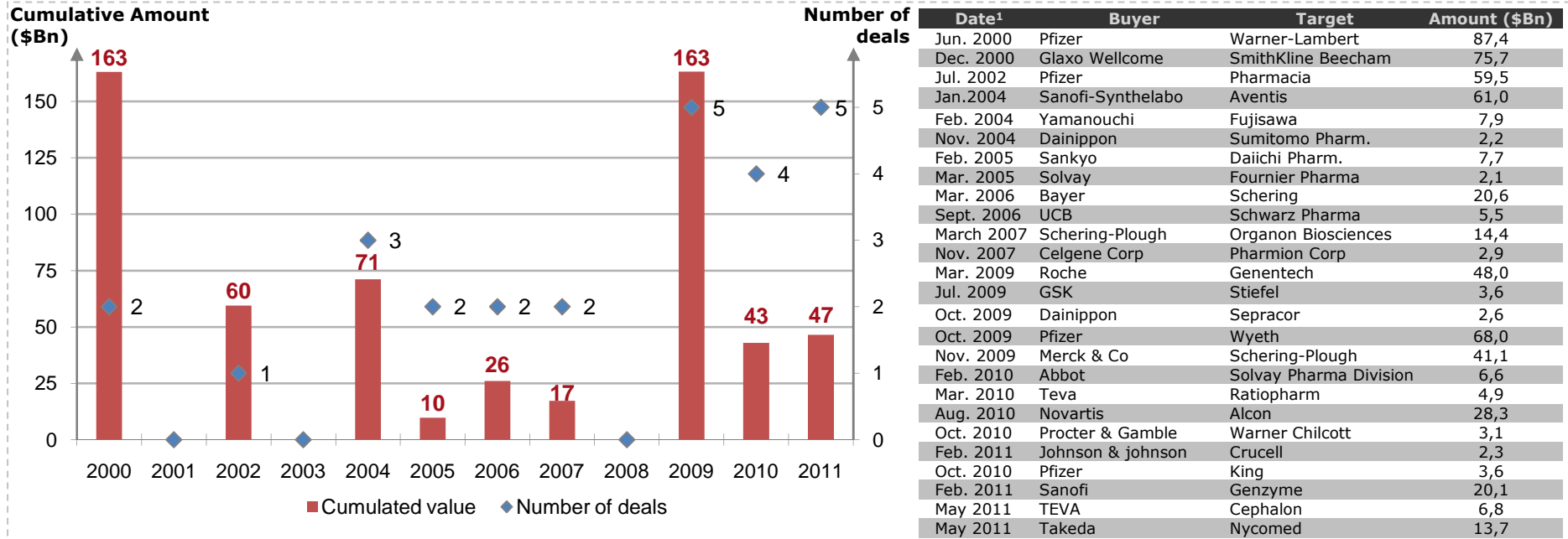
Sources: Thomson One Banker, Company and Bionest Partners



Confidential – December 1<sup>st</sup> 2011 – Bionest, Formation Les Echos

# Through the past decade, the pharmaceutical sector shape shifted across various acquisitions between big-pharma companies, for a total of \$553Bn

## Main M&A deals between big-pharma from 2000 to 2011 (value >2 \$Bn)



## Why to perform such M&A Activity?

- **To increase market share**
  - Pfizer / Wyeth now owns 11% of the global pharmaceutical market sales
- **To consolidate robust top-line sales by gaining control of a blockbuster drug existing or potential**
  - Through the acquisitions of Warner-Lambert and Pharmacia, Pfizer respectively gained Lipitor® and Celebrex®
- **To gain access into a high growth therapeutic area**
  - With the acquisition of Wyeth, Pfizer stepped in vaccines and autoimmune therapeutic areas
- **To enhance R&D productivity**
  - With the acquisition Schering-Plough, Merck & Co. gained a flourishing pipeline (i.e. 36 phases III, 26 phases II and 26 phases I)
- **To get access to new technology platform**
  - Pfizer gets very large scale biologics manufacturing capabilities through the acquisition of Wyeth
- **To improve management efficiency on a short-term basis**
  - An M&A deal is an idyllic opportunity to proceed an in-depth optimization of the company organization
- **To get greater geographical reach**
  - With the acquisition of Shering-Plough, Merck & Co diminish its dependency on the US market from 56% down to 47% of its sales

Sources: Cowen, Merger Market, Bionest Partners

1- Completed Date

## Case study: 2009-11 mega-deals (1/3)

Pfizer & Wyeth	
Deal Detail	<ul style="list-style-type: none"> <li>■ <b>Date:</b> January 26<sup>th</sup> 2009</li> <li>■ <b>Deal Value:</b> \$68Bn, 15% premium to closing price</li> <li>■ <b>Market cap of the target before deal:</b> \$57.3Bn</li> <li>■ <b>Last annual sales of the target before deal:</b> \$22.4Bn</li> </ul>
Rational of the Deal	<ul style="list-style-type: none"> <li>■ <b>Pfizer faces a major crisis in 2011 when it loses patent exclusivity for Lipitor® (i.e. 08 sales: \$12.4Bn), especially with the drop in 2006 of Lipitor® follow-up (i.e. Torcetrapib)</b></li> <li>■ <b>Concerning other drugs, Norvasc® a \$3Bn drug lost its patent in 2007 and Lyrica® a \$2.6Bn drug will run-out patent in 2013</b></li> </ul>
Upsides	<ul style="list-style-type: none"> <li>■ <b>Provides Pfizer with a vaccine and a biologic arms (i.e. including Enbrel®)</b></li> <li>■ <b>Substantially enrich Pfizer pipeline with 101 active drugs (i.e. 65 NCEs and 23 Biotechnology products)</b></li> <li>■ <b>Allows Pfizer to get very large scale biologics manufacturing capabilities</b></li> <li>■ <b>Becomes number one in animal health field (combination of Pfizer and Fort Dodge animal health)</b></li> <li>■ <b>Leveraging the acquisition, Pfizer expects to create savings of \$4 billion by 2012</b></li> </ul>
Downsides	<ul style="list-style-type: none"> <li>■ <b>Potential monopoly situation in some Animal health segments, which may result in probable divestments</b></li> </ul>



Sources: Companies press releases, Bionest Partners

## Case study: 2009-11 mega-deals (2/3)

<b>Merck &amp; Schering-Plough</b>	
<b>Deal Detail</b>	<ul style="list-style-type: none"> <li>■ <b>Date:</b> March 9<sup>th</sup> 2009</li> <li>■ <b>Deal Value:</b> \$41.1Bn, 34% premium to closing price</li> <li>■ <b>Target market cap (before deal):</b> \$38.3Bn</li> <li>■ <b>Last annual sales the target before the deal:</b> \$12.7Bn</li> </ul>
<b>Rational of the Deal</b>	<ul style="list-style-type: none"> <li>■ <b>This deal is clearly an attempt to address Merck's patent issues</b> <ul style="list-style-type: none"> <li>■ Patents on Merck's Cozaar® and Singulair® will expire in February 2010 and August 2012, exposing \$8.2 billion worth of sales to generic competition (i.e. this equates to about 35% of Merck's forecasted revenue in 2012, vs. 6% for Schering Plough)</li> <li>■ The combined company will have about 21% of forecasted 2012 revenues exposed to patent expirations</li> </ul> </li> <li>■ <b>This deal will also provide Merck &amp; Co. with greater geographical reach</b> <ul style="list-style-type: none"> <li>■ Schering has a significant presence in international markets with about 70% of revenues coming from outside the US vs. 44% for Merck</li> <li>■ The combined entity will have roughly 53% of the sales coming from outside the US</li> </ul> </li> </ul>
<b>Upsides</b>	<ul style="list-style-type: none"> <li>■ <b>This deal enrich Merck &amp; Co. pipeline with 58 active drugs</b> (i.e. 10 drugs in phase III)</li> <li>■ <b>Schering Plough bring to Merck &amp; Co. a successful women's health and urology portfolios it acquired from Organon in 2007</b></li> <li>■ <b>This deal is expected to be significantly accretive, increase efficiencies and result in cost savings of approximately \$3.5Bn annually</b></li> </ul>
<b>Downsides</b>	<ul style="list-style-type: none"> <li>■ <b>There is no significant overlap between the product and research portfolios of Merck &amp; Co. and Schering-Plough, with the exception of animal health offerings</b> <ul style="list-style-type: none"> <li>■ Schering-Plough's animal vaccines conflict with Merck's joint venture with Sanofi, Merial Ltd.</li> </ul> </li> <li>■ <b>A stumbling block might be the arthritis drugs Remicade® and golimumab, for which Schering-Plough acquired the rights to sell it internationally from J&amp;J</b> <ul style="list-style-type: none"> <li>■ Under "change of control" clauses in the companies' partnership agreements, J&amp;J has the opportunity to acquire the full rights to the drugs if Schering-Plough gets taken over<sup>1</sup> (i.e. that's why the deal is structured as a reverse merger, where Schering-Plough will be the surviving company under the Merck name)</li> </ul> </li> </ul>

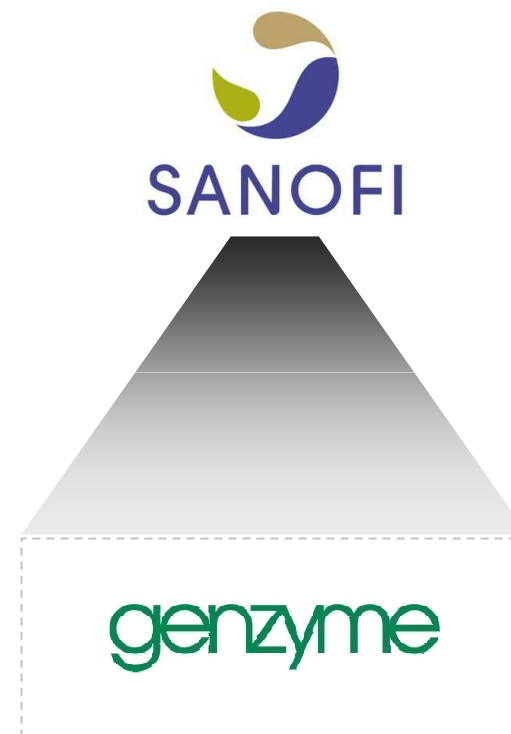


Sources: Companies press releases, Bionest Partners

<sup>1</sup> The co-marketing deal dates back to 1998 when Schering-Plough agreed it with Centocor, just a year before to Johnson & Johnson acquired Centocor

## Case study: 2009-11 mega-deals (3/3)

Sanofi & Genzyme	
Deal Detail	<ul style="list-style-type: none"> <li>■ <b>Date:</b> February 16<sup>th</sup> 2011 (Merger announcement)</li> <li>■ <b>Deal Value:</b> \$20.1Bn (48% premium over Genzyme's price before first rumors)                             <ul style="list-style-type: none"> <li>■ A <b>contingent value right</b> ("CVR") has been added to each share, entitling the holder to receive additional cash payments (total potential of \$14 per share – \$3.8Bn in total) if specified milestones are achieved (mainly related to the key pipeline product: Lemtrada®)</li> </ul> </li> <li>■ <b>Target market cap (before first offer ):</b> \$12.7Bn (on 07/01/10)</li> <li>■ <b>Last annual sales the target before the deal:</b> \$4,0Bn (2010)</li> </ul>
Rational of the Deal	<ul style="list-style-type: none"> <li>■ <b>Combination will enhance Sanofi' sustainable growth strategy by expanding its footprint in biotechnology</b> <ul style="list-style-type: none"> <li>■ Beyond rare diseases, Genzyme has built strong Renal-Endocrinology, Hematology-Oncology and Biosurgery businesses</li> </ul> </li> <li>■ <b>It will reinforce the Sanofi' commitment in the greater Boston area, where it already has a sizeable presence</b></li> </ul>
Upsides	<ul style="list-style-type: none"> <li>■ <b>Strong position in the rare diseases field that is highly scrutinized</b> by the industry leaders                             <ul style="list-style-type: none"> <li>■ Pfizer and GSK have begun to establish a presence in rare diseases</li> </ul> </li> <li>■ <b>Complementary business to Sanofi existing ones</b>, including highly differentiated, market-leading products that provide significant benefit to patients</li> <li>■ <b>Well developed portfolio:</b> <ul style="list-style-type: none"> <li>■ 12 number one products (first-in-class, life-changing therapies and highly treatment cost<sup>1</sup>)</li> <li>■ 2 blockbuster launch opportunities in the 2012-13 timeframe: Lemtrada® in multiple sclerosis and mipomersen against high cholesterol</li> </ul> </li> <li>■ <b>Highly customized niche sales force</b></li> </ul>
Downsides	<ul style="list-style-type: none"> <li>■ <b>Genzyme business has been weighted down by production and regulatory problems</b> <ul style="list-style-type: none"> <li>■ Sanofi has limited expertise in biological manufacturing</li> <li>■ Expected <b>cost savings from Genzyme's manufacturing wouldn't happen soon</b></li> </ul> </li> <li>■ <b>Struggle to see the synergies of a Sanofi-Genzyme combination</b> <ul style="list-style-type: none"> <li>■ Limited marketing synergies: the only ones being late stage drug mipomersen (Cardio-Metabolism) and Lemtrada® (MS)</li> </ul> </li> <li>■ <b>Risk of an over diversified company?</b> <ul style="list-style-type: none"> <li>■ Already dominant position in emerging markets, consolidating vaccines business, recently moved to expand into over-the-counter health-care products...</li> </ul> </li> </ul>



Sources: Companies press releases, Bionest Partners

<sup>1</sup> Average annual treatment cost of \$200,000 for Cerezyme®

# What should be the next big-pharma acquisition strategy?



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