



# Global Trends in the Life Science Industry

## Challenges of the financial crisis

Fourth Hanseatic India Colloquium

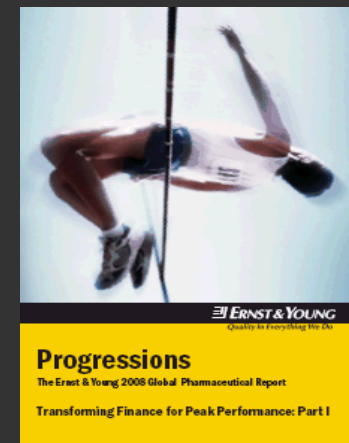
Hamburg, October 30, 2009

# Agenda

- Finance Transformation and Financing Gaps
- Path to Sustainability
- Re-Invention of the Life Science Industry



Ernst & Young  
Industry Reports



# Finance transformation and financing gaps

## Impact of financial crisis – the pharma perspective

i² yª | y> ~y<y>  
 fy+ 'kS fiçc fª } 6  
 {'ª { } <ª | < } yff. ª' S "y{fi  
 yfiyffª  
 @yª | < } t o ffi. D [ ] g \_kcD  
 ^ª yª { fyf1S } >D  
 KI g {fi' z } < JHHPA

io } ? } > 'S } t çyfi S S flª } ² lç } 'ª f  
 | 6y " " ' 6ffis } ofi çy> z } }ª fiç } | yª  
 >fi' { ¥ " <ç } Fa t yfi { ç fiç } >fi' { ¥ yª | a  
 fiçª ¥ t } ? } t ' fiç S fl { ç D S fl { ç S ' < } F  
 ðiz <ª ; > fi } y < > fi' S . } . } >ª  
 @byS } > [ 'ª } fl. D [ ] g Ze kD  
 Zfl >ª } > > o } } ¥DKH g {fi' z } < JHHPA

if 'z' | . 6 S S flª } ² szlfliu  
 " } ' " f } { ' ofiª fl } fi' ª } } |  
 S } | çª } > yª | fiç } yfiS } ofiª fl ç } .  
 t ffi-y fl } fiç ' > } fiçyfi " < ' -ç } ; ' ' |  
 S } | ç yfz } ª } -fiª Fa | 'ª fi > } } fiçyfi  
 { ç yª ; ª ; ª @b } ~ < } . cª | f } < D [ ] g  
 h -ª } < DZfl >ª } > > o } } ¥D  
 KH g {fi' z } < JHHPA

: lç } ª | ç } { fi } ~ } { fi } ' ~ fiç 6  
 flª " < } { } | } ofi | } ffi yfiª ª  
 y < } > fi ffi flª { f } y < yª | fi 6  
 | ç - ç fl fi fi' " < } | ç fi fiç } ç  
 S "y{fiª  
 \y -ç | z < } ª yª D [ ] g  
 Y > fi ç yª } ª } { yDk { çª D  
 Q g {fi' z } < JHHPA

if '-y ç fiª Y\_ t ffi yfiª fiª : > fiç 'ª ;  
 { y > ç } ~ t ? fi' S yª }  
 y { ç fl ç fiª ª > D fi yª ; y | -yª fi y ; }  
 ' ~ zª fi } { çª ' f ; . { ' S "yª ç } > ?  
 ç yz ffi. fi' ç y } { y " fi y fi  
 @ \yª ç f n y } } ffi DZ f ' S z } < ; D  
 JI g {fi' z } < JHHPA

i² S yffl < } yª | z fl } { çª zª fi } { ç { ' S "yª ç } >  
 t ffi | ' fl > fi -ª } >ª { } fiç } . ç y - } " f } ofi. ' ~  
 { y > ç D " < ' | fl { fi < } - } ofl } > fiç } yS > D > fiç 'ª ;  
 "ª } ª } > yª | zª " ç y < S y " y çª } < > Fa fi ç fiç }  
 fy < ; } flª ç } < > } ' ~ > S yff " flz fiç { ' S "yª ç } > D  
 yª | " < ç yfi } { ' S "yª ç } > t ffi ~ } } ffiç } S ' > fi  
 "yªª  
 @kfi } - } ª Zfl < çª D [ ] g Zfl < çª } [ ' S "yª . D  
 L f ' - } S z } < JHHPA

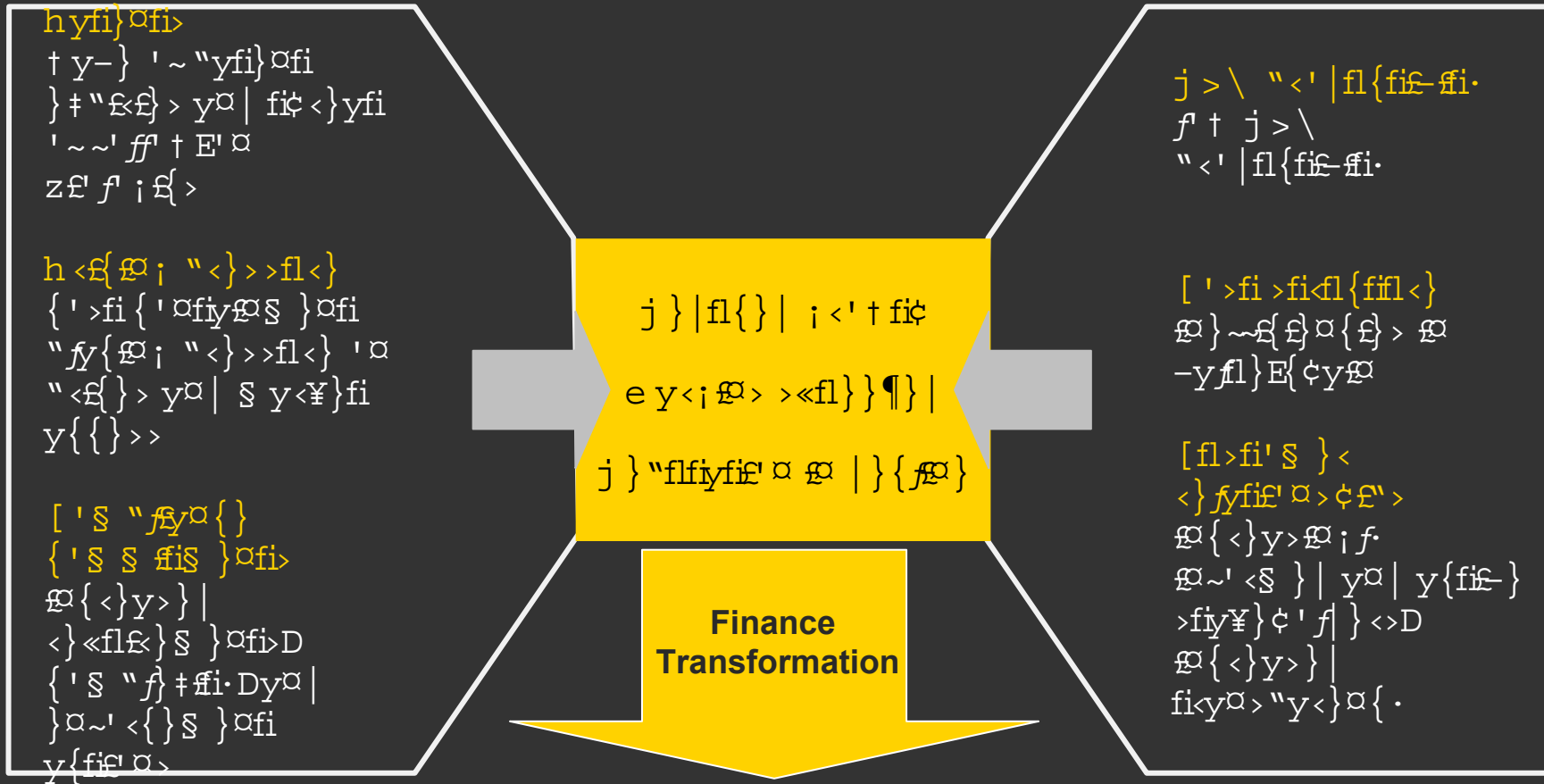
Zª } > fi S yfi } > fiçyfi IKP " flz fiç  
 { ' S "yª ç } > D ' < LH " } < { } ofi ' ~ mª k F  
 " flz fiç zª fi } { ç D ç y - } f } > > fiç yª y . } y < >  
 ' " } < yfiª ; { y > ç f } - fi g ~ fiç ' > } DQN ç y - }  
 f } > > fiç yª > f S ' ofiç >  
 ' ~ { y > çª @ lç } k yª ^ ç yª { ç } ' }  
 [ ç < ' ª ç f } D  
 IN f ' - } S z } < JHHPA

gª | } yf t fiç zª fi } { çª ' f ; .  
 { ' S "yª ç } > R i² fi t ffiª ' fi z } y  
 ICIUJ @ { ' S zª yfiª ª A ' <  
 ICIUK @ > . ª } < ; . A z fl fi y  
 ICIUH Mª  
 @kfi } - } ª Zfl < çª D [ ] g Zfl < çª }  
 [ ' S "yª . D IJ byª fly < . JHHQA

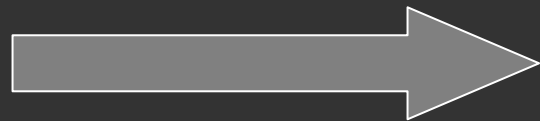
iZ ç h ç y < S y yª | zª zª fi } { ç² t ffi  
 ç y - } fiç } fl + fl < . ' ~ > ffiª ; zy { ¥ yª |  
 t y ffiª ; ~ < fiç } ç ç fi ' " " < flª fi. yª |  
 fiç } ª y { ç fl ç } zª fi } { ç { ' S "yª ç } > yfi  
 t ç yfi < } " < } > } ofi IQQH " < ç } >ª  
 @kfi } - } ª Zfl < çª D [ ] g Zfl < çª }  
 [ ' S "yª . D  
 IJ byª fly < . JHHQA

# Finance transformation and financing gaps

Cash rich pharma challenged by more complex issues



top line growth



bottom line returns

# Finance transformation and financing gaps

## Short term fixes vs. sustainable solutions

Selected job reduction announcements by large drug companies

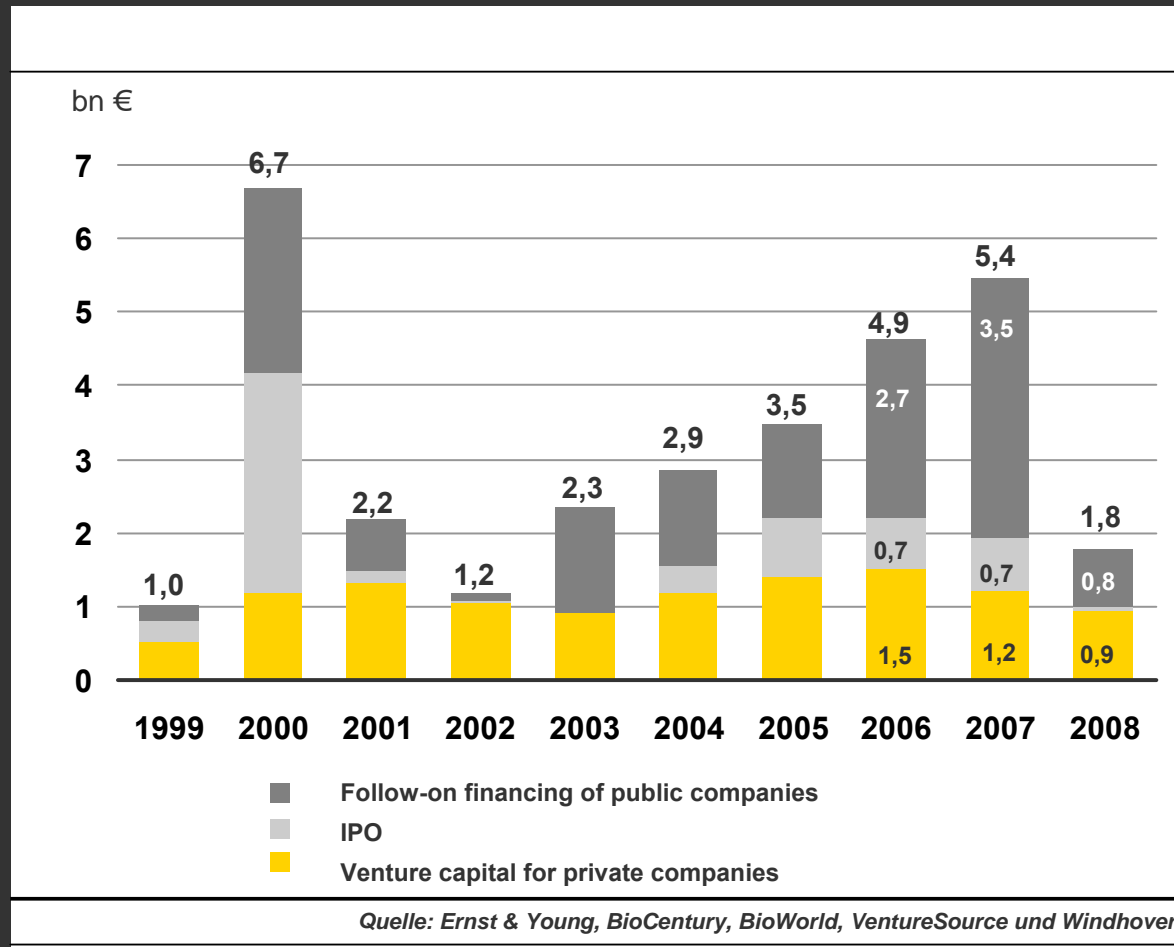
Company	Job reductions announced	Anticipated cost savings
Pfizer	10,000	US\$2 billion
AstraZeneca	7,600	US\$ 900 million
Merck & Co.	7,000	US\$2.3 billion
Bristol-Myers Squibb	4,300	US\$1.5 billion
Johnson & Johnson	3,600-4,800	US\$1.3 - 1.6 billion
Novartis	3,760	US\$1.6 billion
GlaxoSmithKline	Not disclosed	US\$ 1.4 billion
Amgen	2,200-2,600	US\$1 - 1.3 billion
Schering-Plough	1,100	US\$100 million

Source: Ernst & Young and company announcements

**Path to sustainability**  **„Re-invention“ of the industry**

# Finance transformation and financing gaps

## Impact of financial crisis – the biotech perspective



- ▶ **European equity financing drop by 68%**
  - ▶ **Public follow-on financing minus 79%**
  - ▶ **No IPOs**
  - ▶ **Venture Capital reduced by 20%**
- Economic crisis – hedge funds not investing – big contributor to public markets
  - Public valuations significantly depressed for all but large cap biotech
  - VCs always cautious, now resource-constrained; prioritising existing portfolio companies.

# Finance transformation and financing gaps

Impact of financial crisis – consequences for biotech companies

---

- ▶ **“The Venture Capital financing model is dead”**
- ▶ **“Has the biotech business model failed?”**
- ▶ **“Major consolidation expected”**
- ▶ **“Greater 50% of the companies will die”**



# Path to Sustainability

Perspectives biotech companies

Big pharma companies announce layoffs, restructurings

Stock buybacks ▶ Velcade gives NICE an unprecedented

▶ **Creative Financing** safety net with out of money-back guarantee

product sales FDA NME approvals Product safety

Creative deal ▶ fall to lowest level in incidents in the

▶ **Partnering** structures R ??? over 25 years rising China market

\$ ▶ & ? more pricing

▶ D pressures

€ M&A π? emerging

▶ ▶ ▶

¥ The Biotech companies

▶ mega 8% retain more

£ deal... rights in deals

is back ▶ ▶

F  
D  
A  
A  
A  
▶  
R  
E  
M  
S  
▶  
F  
I  
P  
N  
E  
T  
S

Big pharma's search for pipeline productivity propels a

booming deal environment ▶ Government negotiation of

▶ drug prices under MMA returns to public policy debate

# Path to Sustainability

Pressure generates creativity - companies will be different

---

## Quality company formation

- Professionalising Tech Transfer
- GoBio Program
- IMI Program (early Collaboration Biotech / Pharma / Academia)
- High Tech Gründer Fonds
- Leveraging Programs (e.g. KfW)

## Diversification of business models

- focus on product delivering technology platforms as a more sustainable model with greater stability in financial crisis?
- hibernating with service type models?
- greater sense for reality – solid financial basis before start of in-house drug development


# Path to Sustainability

Pressure generates creativity - financial investors with new ideas

---

## Venture Capital Risk Diversification

### Early stage funding

- Single Asset companies
- Project Funding
- Fast, focused, lean  cheap move to data-supported decision point
  - move forward as a company / asset deal / stop

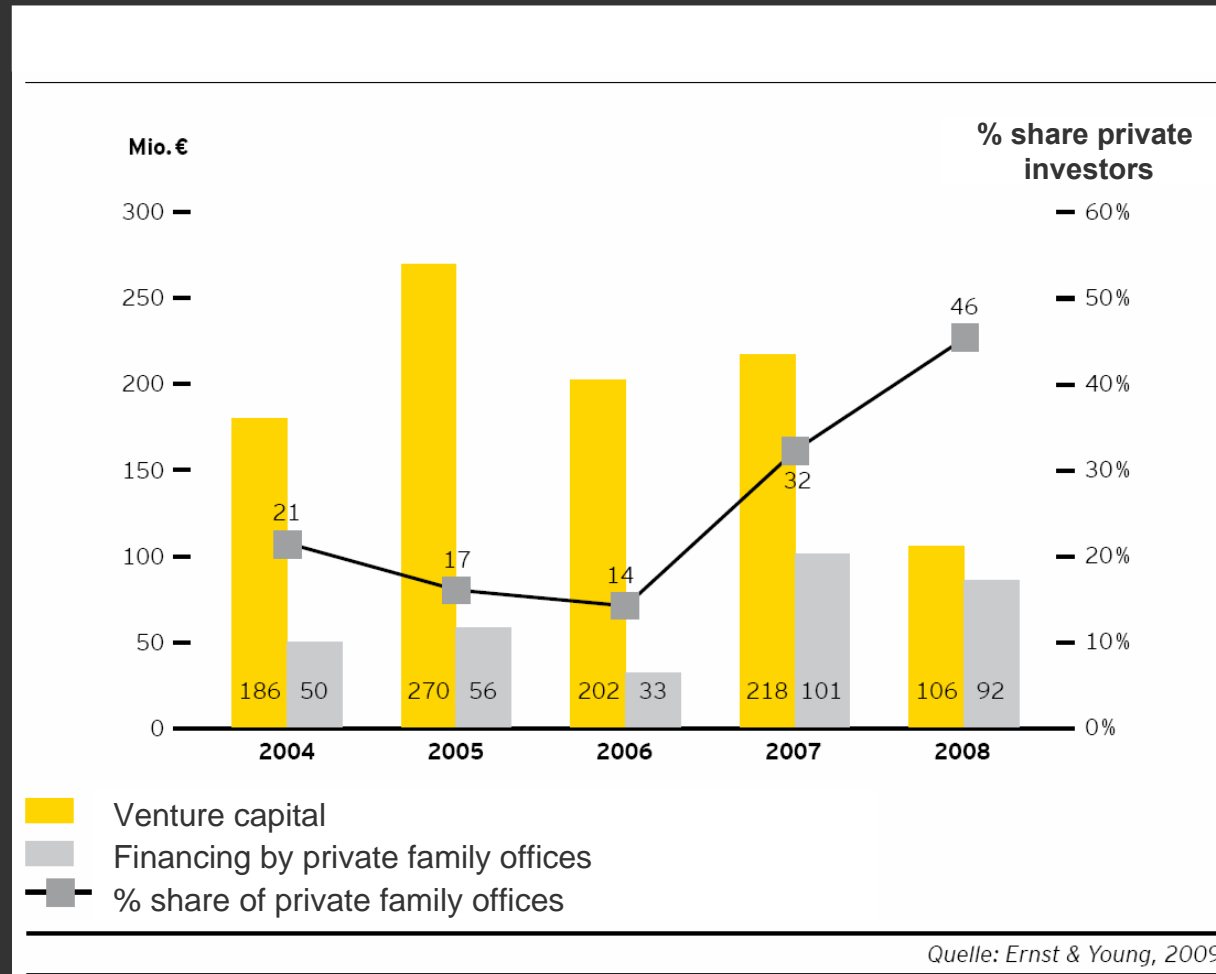
### Growth capital

- Equity investments into mature companies – new growth story based on solid business (e.g. TVM / Riemser)

# Path to Sustainability

Pressure generates creativity – new investors entering the field

Private family offices increase their share



## Company Building by Private Investors?

- different risk acceptance
- different return needs (time, multiples)
- more independent from complex consortia
- more dedicated to company building ?

# Path to Sustainability

Pressure generates creativity – new investors entering the field

---

## CROs: Service for Equity

- Buying early assets and create value ( pre-clin. / clin development)
- Single asset companies
- Team with VCs (e.g. Focus, Quintiles)

## Alliance vs Venture Capital

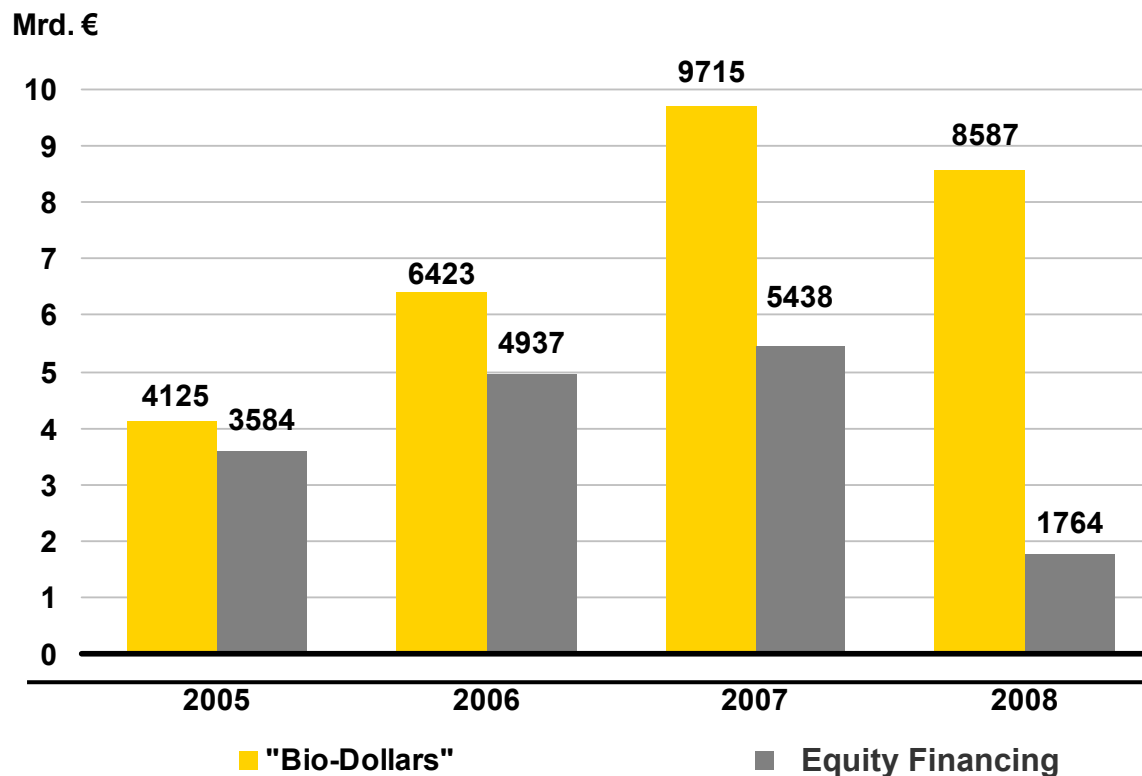
- Neurimmune approach (K. Henco)
  - identify promising project
  - finance very lean, focused and fast towards POC
  - emphasis on BD
  - early big deal with pharma / big biotech (Biogen Idec , > 300 m US\$)
  - HS Life Sciences.com

# Path to Sustainability

## Strategic investors driving transactions

### Partnering with Big Pharma becomes critical

#### „Bio-Dollars“ vs. Equity Financing of European Biotech Companies



Quelle: Ernst & Young; „Bio-Dollars“ sind der potenzielle Wert der Allianzen inklusive Vorab- sowie Meilensteinzahlungen für Allianzen, bei denen diese Werte veröffentlicht wurden

Comitted payment by big pharmas for alliances (2005 to 2008, global)

Unternehmen	Mrd. € (max.)
GlaxoSmithKline	17,5
Novartis	6,8
Pfizer	5
Merck & Co.	4,7
AstraZeneca	3,7
Bristol-Myers Squibb	3,4
Roche	2,9
Summe	44

Quelle: Ernst & Young, 2009

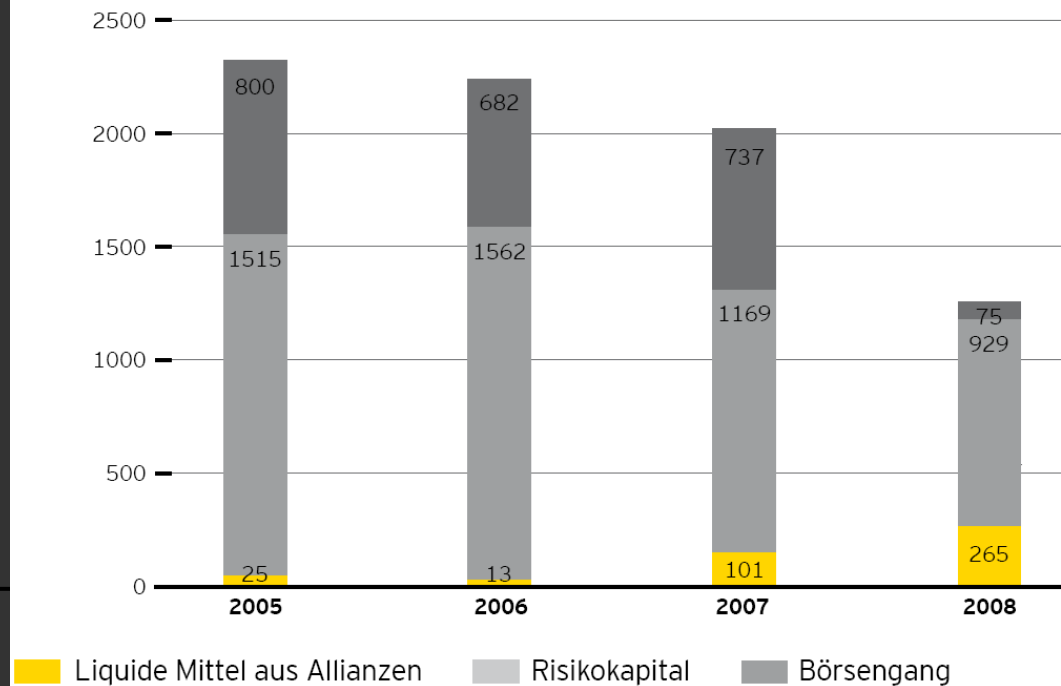
# Path to Sustainability

## Strategic investors driving transactions

Upfront payments help bridging financing gaps

### Financing European biotech companies – cash infusion

Summe (Mio. €)



Quelle: Ernst & Young, 2009

# Path to Sustainability

## Strategic investors driving transactions

---

Corporate Venture Funds in Big Pharma take over more responsibility

- **Merck Serono Corporate Venture Fund (40 m€)**
  - Explicite focus on early stage opportunities – „option financing“
  - Alternative to „come back when you have the data“
  - nuturing early stage ideas to reach further decision point fast
- **Novartis Option Fund (200 m\$) to finance early innovations**
  - investments made in return for options to certain technologies or compounds in its portfolio companies driving transactions
- **Corporate Venture funds cooperate to drive innovation**
  - GlaxoSmithKline (GSK), Novartis (NVS) Venture Fund, Lilly Ventures (LLY) and Roche Venture Fund to support Aileron Therapeutics (40 m\$) to develop new class of drugs (stapled peptides)
- **Biogen and Pfizer Inc. launched incubator programs in 2007.**
  - Incubators are looking for early stage companies, often with programs that only recently have emerged from universities' tech transfer offices.

# “Re-invention” of the Life Science industry

Four sweeping trends

▶ Improving R&D productivity

▶ Personalised Medicine

▶ (Biogenerics)

▶ Globalisation

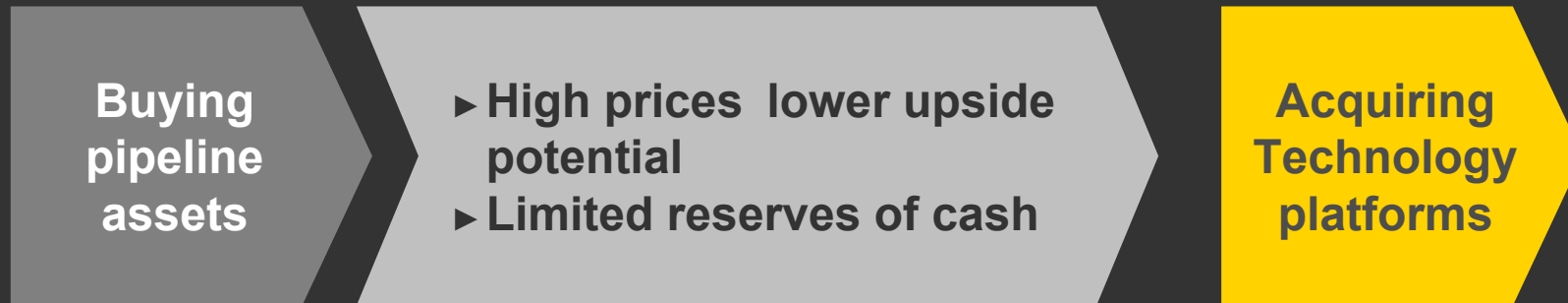
# Improving R&D productivity

# “Re-invention” of the Life Science industry

## Improving R&D productivity – innovative technologies

Short term fixes

long term sustainability



Company	Company	Platform / phase
AstraZeneca	MedImmune	Commercial
Abbott	KOS	Commercial
Eisai	MGI Pharma	Commercial
Takeda	Millennium	Commercial
Merck	SiRNA (RNA)	Platform + Phase II
GlaxoSmithKline	Domantis (dAbs)	Platform - preclinical
Bristol Myers Squibb	Adnexus (adnectins)	Platform + Phase I
Pfizer	Rinat (proteins)	Phase II
GlaxoSmithKline	Sirtris (sirtuins)	Platform + Phase II

Pipeline Assets



Enabling Platforms

Source: Ernst & Young: Beyond Borders 2008

# “Re-invention” of the Life Science industry

## Improving R&D productivity – Focus on R&D outsourcing

- ▶ Shift of R&D activities within pharmaceutical companies
- ▶ Quotation of a Head Emerging Technologies, Big pharma:
- ▶

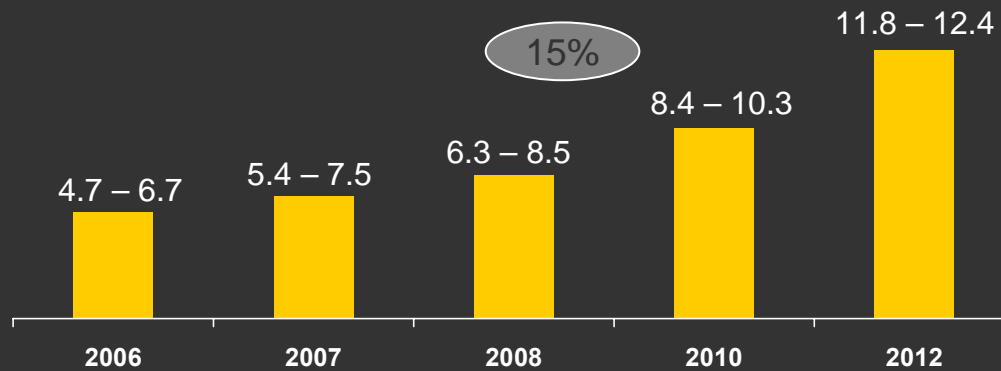


external	30%	50%	70%
internal	70%	50%	30%

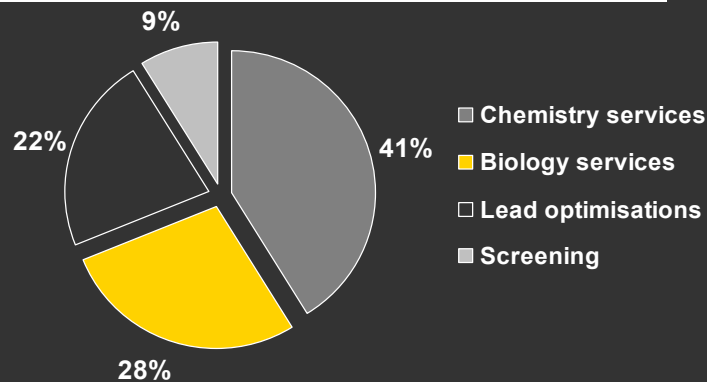
# “Re-invention” of the Life Science industry

## Improving R&D productivity – Focus on R&D outsourcing

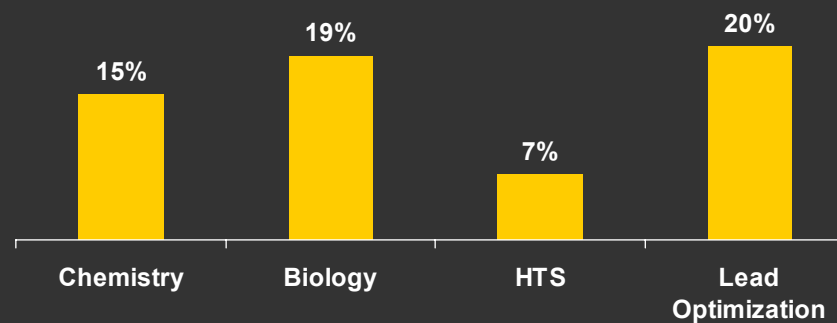
Global Drug Discovery Outsourcing Market (USD bn)



Global Drug Discovery Outsourcing Market by Segment (2007)



Growth Rate (%)



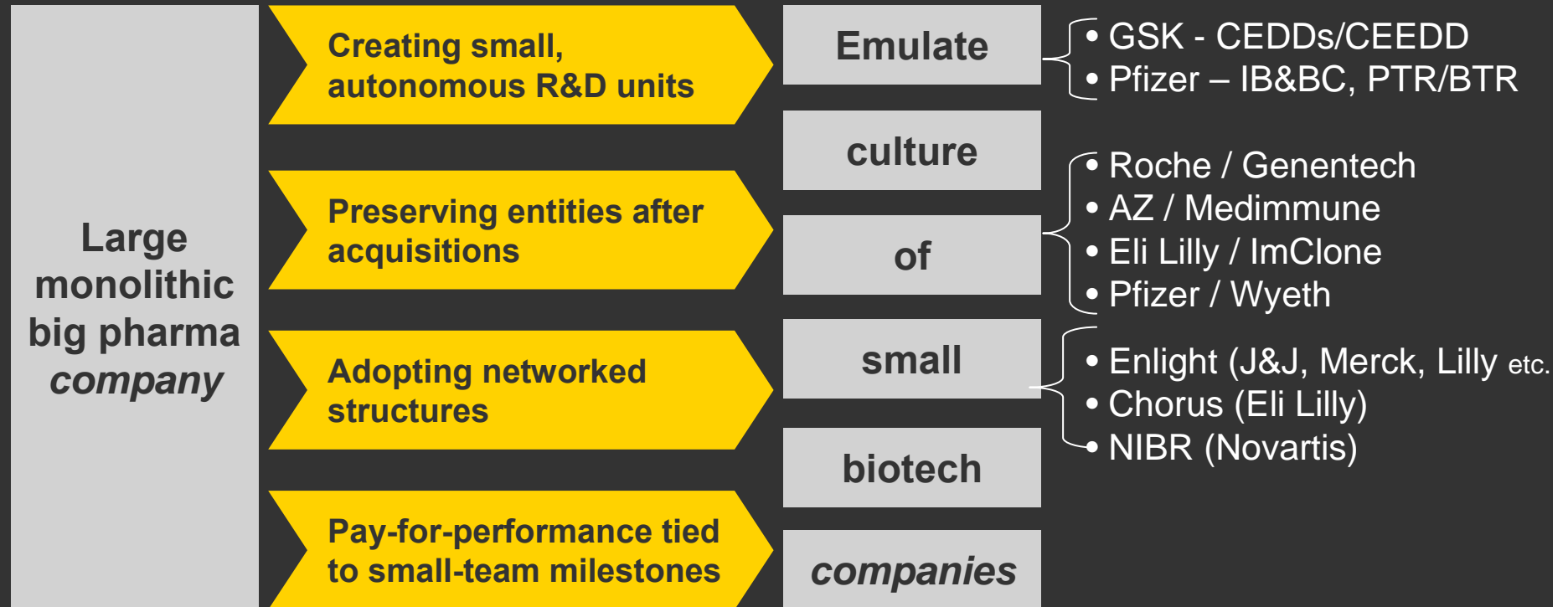
Compiled from multiple industry sources

20

# “Re-invention” of the Life Science industry

## Improving R&D productivity – organisation / business models

Organisational changes – capturing biotech innovation potential



Source: Ernst & Young: Beyond Borders 2008, Dtamonitor

# Personalised Medicine

# “Re-invention” of the Life Science industry

## Personalised Medicine

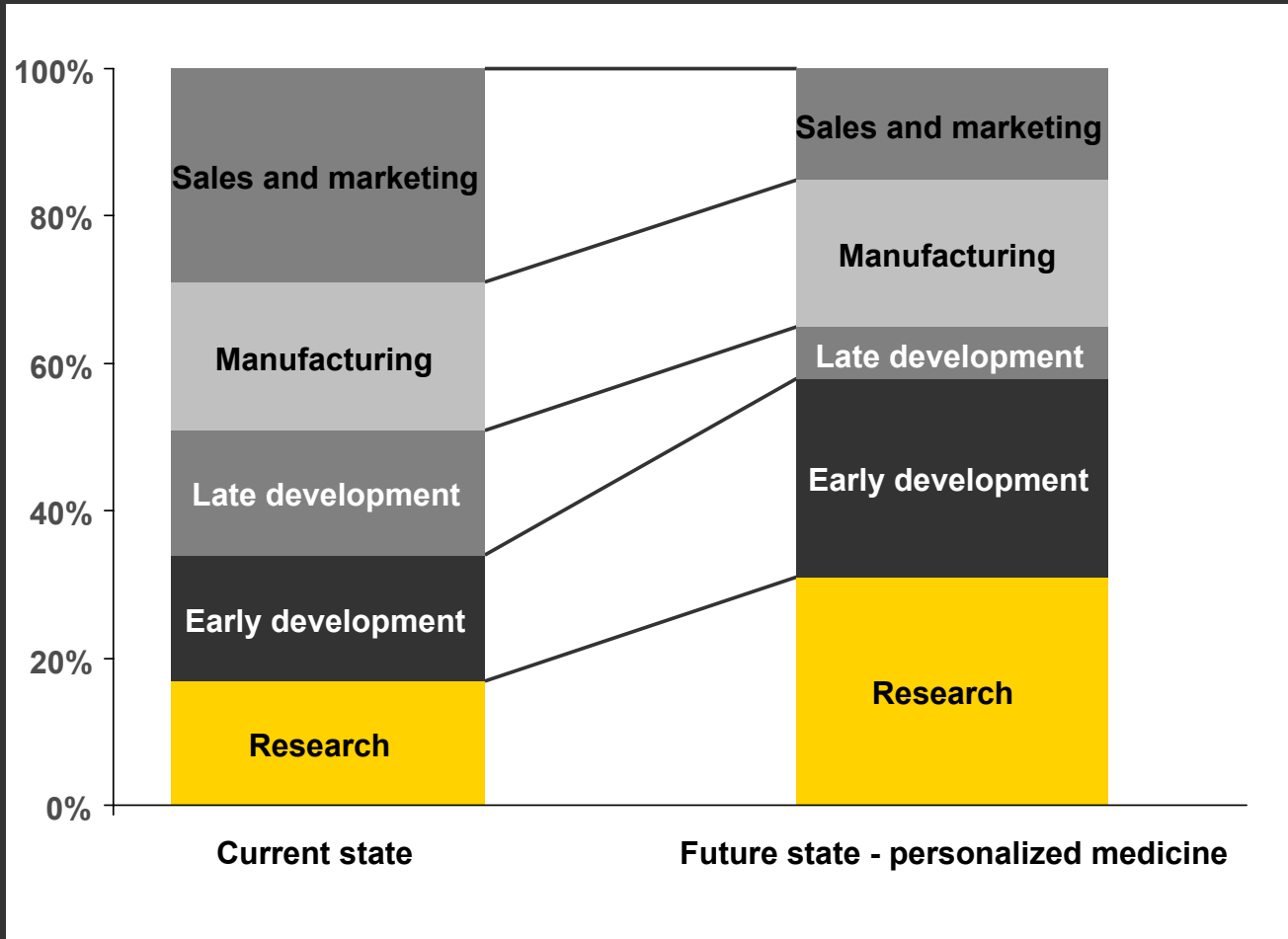
- Pharma companies realising the chances of personalised medicine



# “Re-invention” of the Life Science industry

## Personalised Medicine

Personalized medicine redistributes value in the value chain

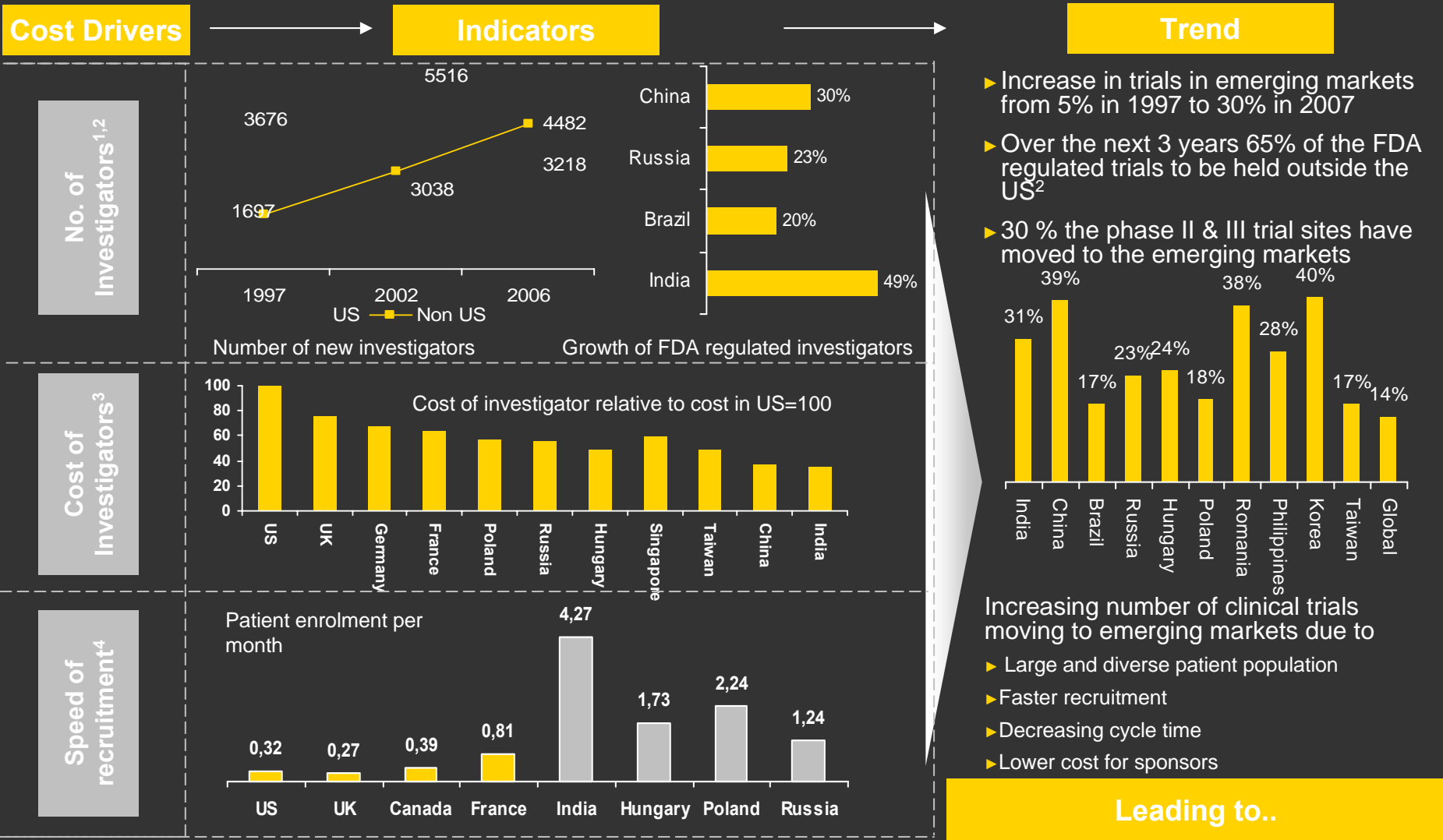


**Value  
accrues to  
innovation**

# Globalisation

# “Re-invention” of the Life Science industry

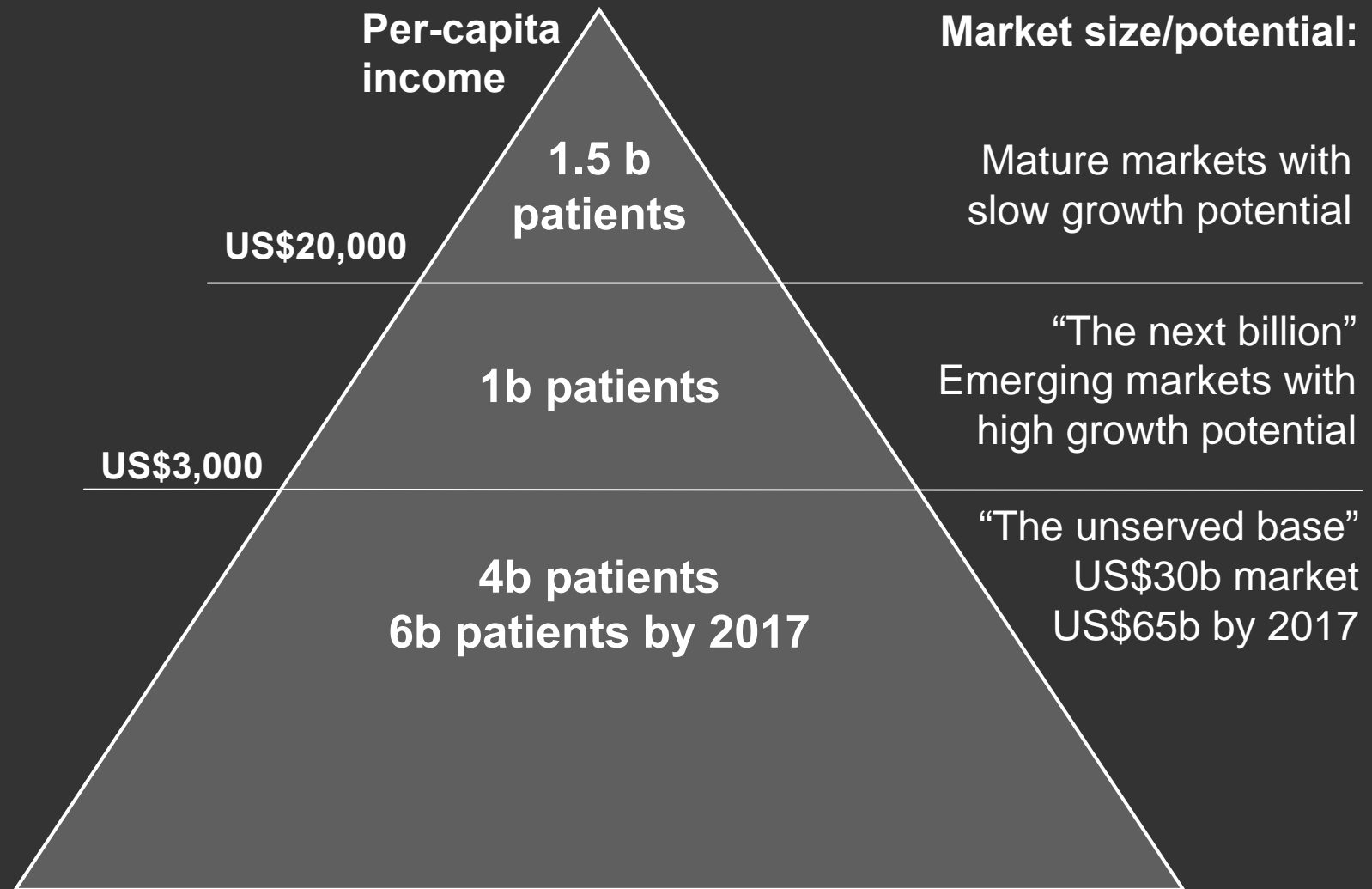
## Globalisation – outsourcing to emerging countries



Source: [1] Centrewatch Analysis FDA,2008 ,[2] Tufts CSDD Analysis , [3] Grantplan<sup>®</sup> database , [4] Ekron Acunova

# “Re-invention” of the Life Science industry

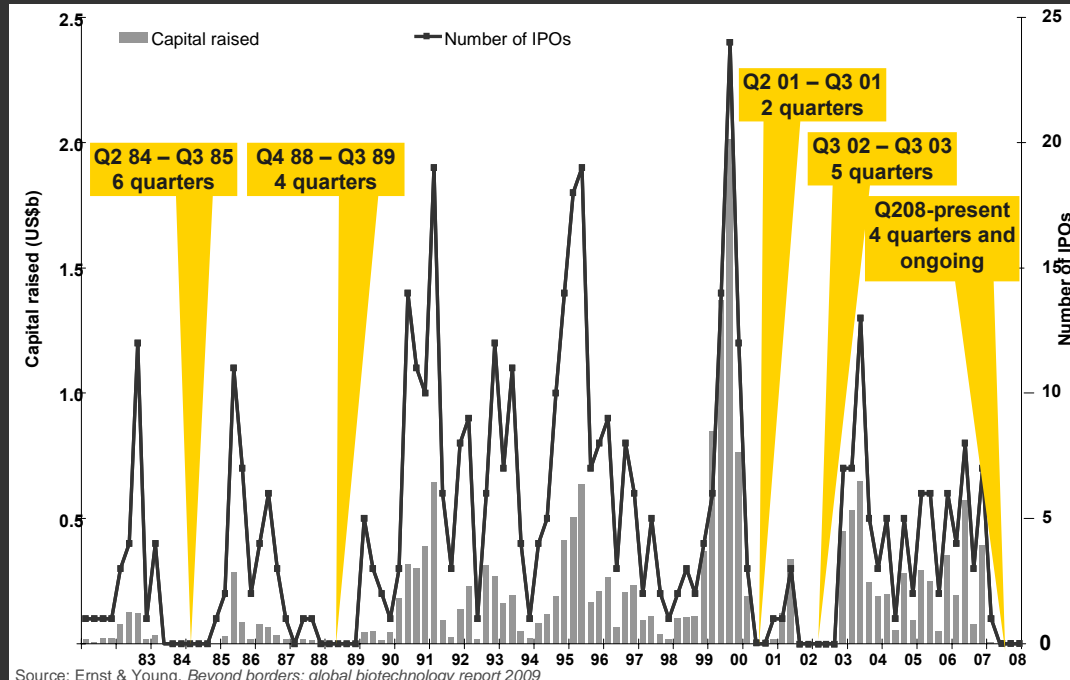
## Globalisation – emerging market opportunities



Source: Ernst & Young and International Finance Corporation (IFC)

# The way forward

Life science industry will overcome the crisis more sustainable



The crisis will help consolidate the industry by:

- pushing sustainable business models
- driving more intelligent transactions
- reinventing the industry with new paradigms

---

# Thank You for your attention

**Ernst & Young**®  
Ernst & Young  
Wirtschaftsprüfungsgesellschaft  
Steuerberatungsgesellschaft

**Dr. Siegfried Bialojan** | Head European Life Science Center  
Theodor-Heuss-Anlage 2 | 68165 Mannheim | Germany  
Phone: +49 (621) 4208 11405  
E-Mail: [Siegfried.Bialojan@de.ey.com](mailto:Siegfried.Bialojan@de.ey.com)