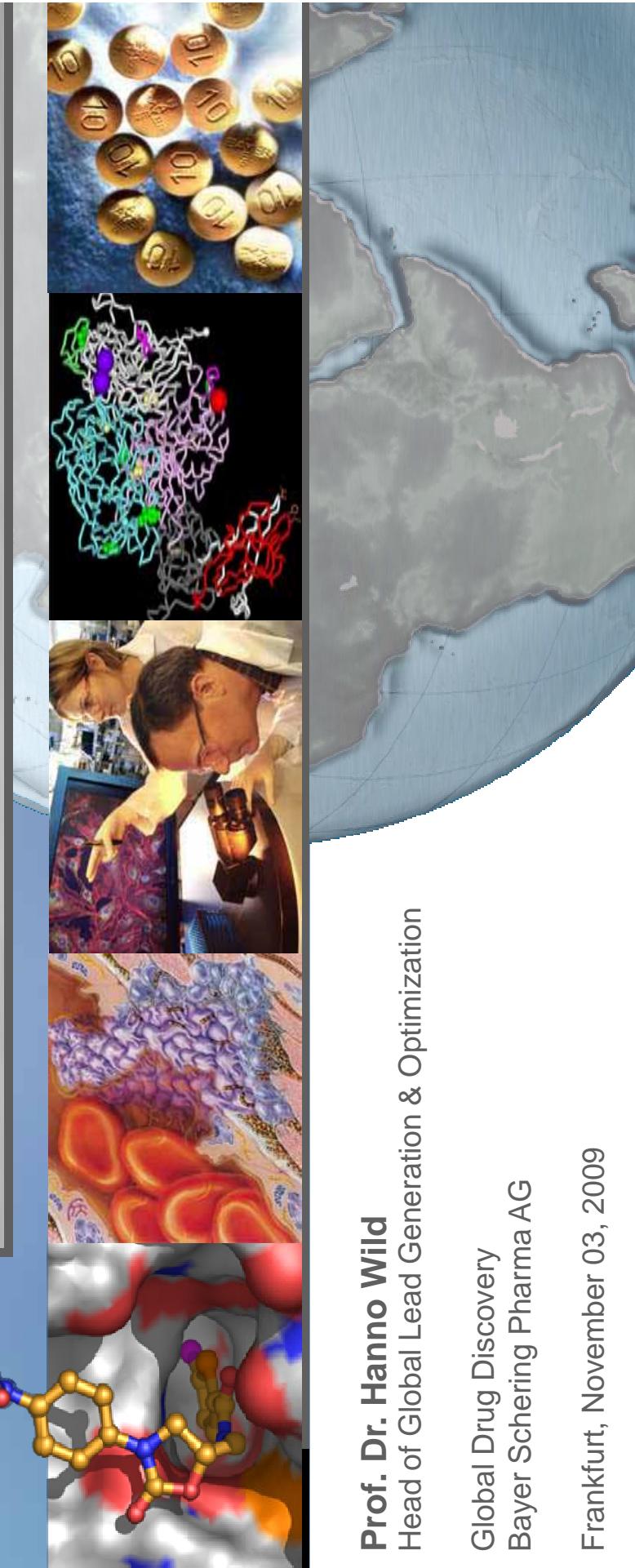




Bayer HealthCare
Bayer Schering Pharma

F&E bei Bayer Schering Pharma: Fokus auf 'echte' Produktivität



Prof. Dr. Hanno Wild
Head of Global Lead Generation & Optimization

Global Drug Discovery
Bayer Schering Pharma AG

Frankfurt, November 03, 2009

Challenges for the entire pharmaceutical industry

Unprecedented change around the globe

Environmental Pressures

- Regulatory and safety concerns
- Pricing pressures
- Payers eclipsing doctors as decision makers
- Current economic crisis is reinforcing the trends in the markets

Industry Challenges

- Outsourcing and labor reduction to reduce costs
- Focus on pharmerging markets
- M&A to enhance the pipeline and reduce cost
- Redesigning the commercial model

Challenges for R&D

- Continuously rising investments
- Higher attrition rates
= lower number of NMEs
- Increasing hurdles regarding efficacy & safety

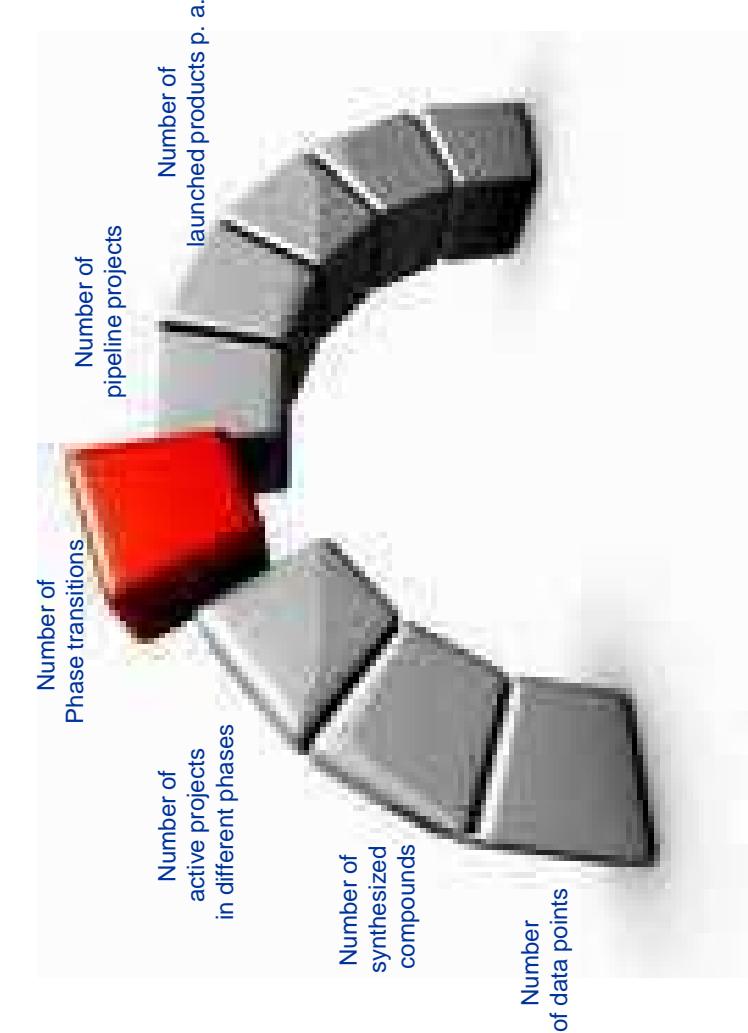
→ How to gain productivity?

Productivity

What is the common understanding of “productivity” in Pharma R&D?

– **Productivity based on number of**

- Data points
- Synthesized compounds
- Active projects in different phases
- Phase transitions
- Projects in the pipeline
- Products launched p. a.
-



– **Often not considered sufficiently**

- Quality of each component
- Value adding effect for the overall process
- Value of the process overall

- Single components of the process are important and have to be optimized
- But: Only value generation in the context of the overall value chain describes “true” productivity

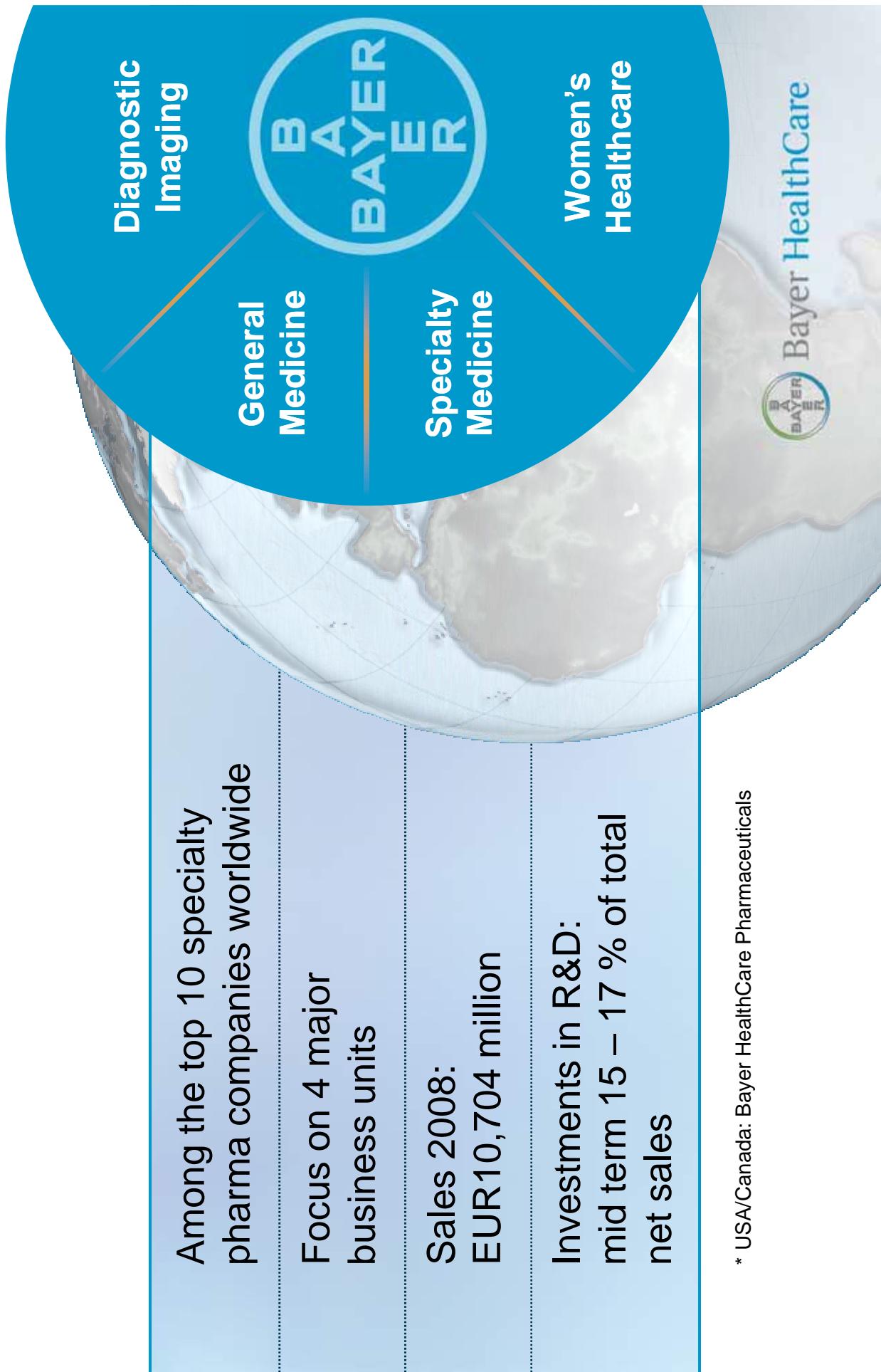


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- Status, Strategy & Productivity

Bayer Schering Pharma*

Key Data



* USA/Canada: Bayer HealthCare Pharmaceuticals

Bayer Schering Pharma Top 10 Products

| | Product [EUR million] | 2007 | 2008 |
|--|---------------------------------|-------------|-------------|
|  Yaz Yasmin® Yasminelle® | | 1,042 | 1,222 |
|  Betaferon®/Yasmin®/Yasminelle® (Women's Healthcare) | | 1,028 | 1,144 |
|  Kogenate®/Betaseron® (Specialty Medicine) | | 818 | 848 |
|  Kogenate® (Specialty Medicine) | | 614 | 626 |
|  Adalat® (General Medicine) | | 445 | 462 |
|  Avalox®/Avelox® (General Medicine) | | 270 | 270 |
|  Nexavar® (Specialty Medicine) | | 361 | 462 |
|  Mirena® (Women's Healthcare) | | 332 | 462 |
|  Levitra® (General Medicine) | | 383 | 341 |
|  Cipro®/Ciprobay® (General Medicine) | | 298 | 338 |
|  Glucobay® (General Medicine) | | 304 | 304 |



Mission of Global Drug Discovery at Bayer Schering Pharma

Best in Class 'true' Productivity (Value Generation)

- Identify & focus on **high unmet medical need** to generate future business that improves the quality of life for patients
- Discover highly **differentiated & reimbursable Proof of Concept-candidates (SMOLs & Biologicals)** suited for a rapidly changing pharma environment
- Explore new fields for Medicinal Care
- Being considered as the **top pharmaceuticals inventor** by Patients, Physicians & Payors



Bayer Schering Pharma's R&D strategy

Key factors to increase Productivity

1 ... more focus:

4 therapeutic research areas with activities from target discovery up to launch (reduced from 9)

2 ... higher efficiency:

Increase in development candidate output at decreased cost per NME (global use of platforms, stringent resource allocation, site consolidation)

3 ... better quality:

Proof-of-Concept approach and strict project progression criteria

4 ... value maximization:

Common mechanism approach to utilize opportunities

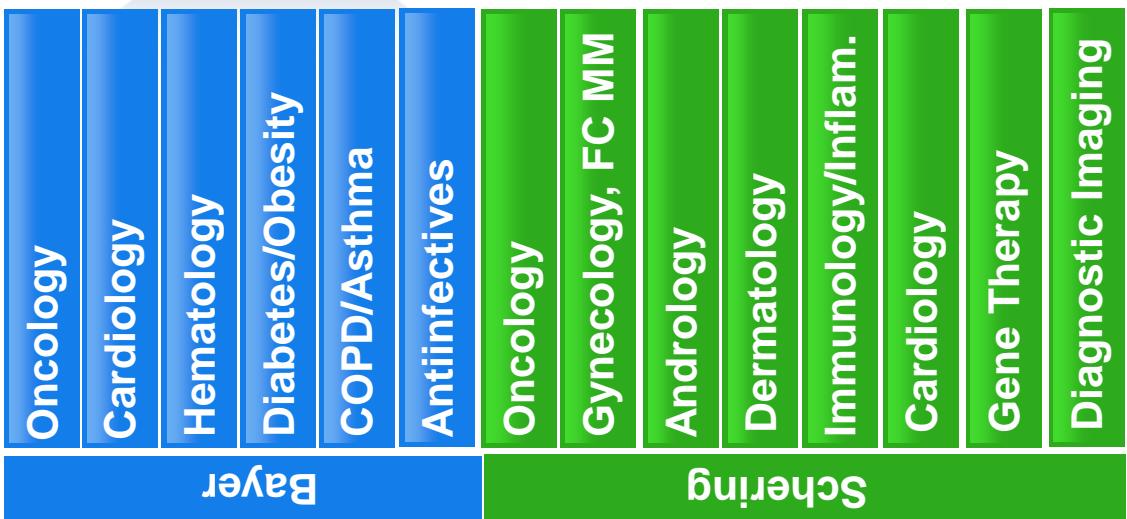
NME: New Molecular Entity



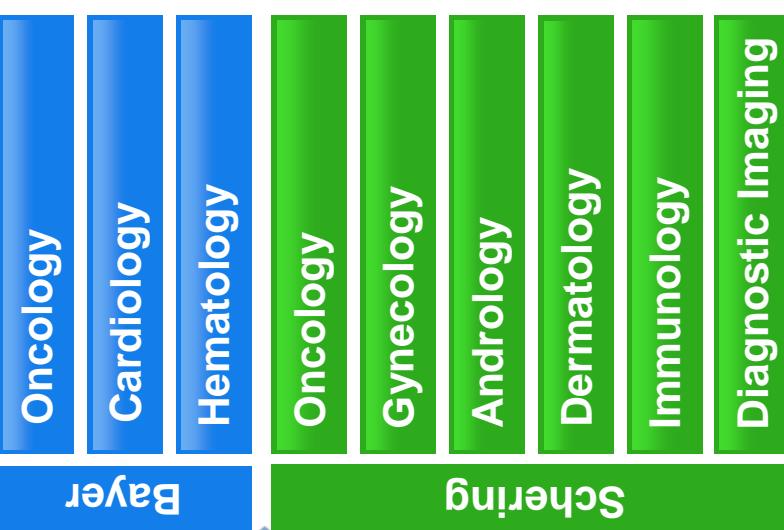
Bayer Schering Pharma's R&D Strategy

Focus on Four Therapeutic Research Areas

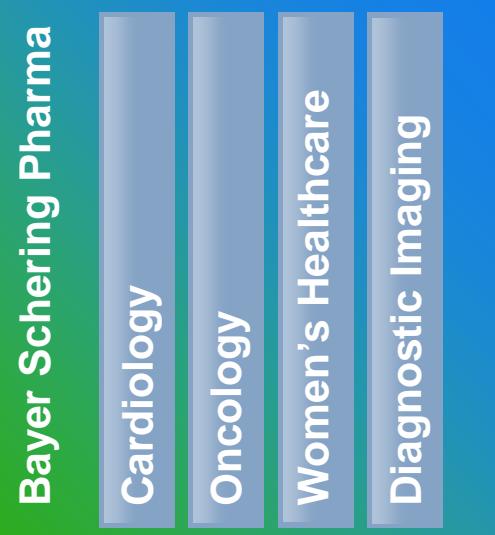
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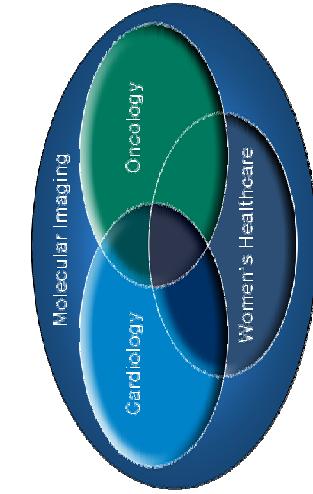
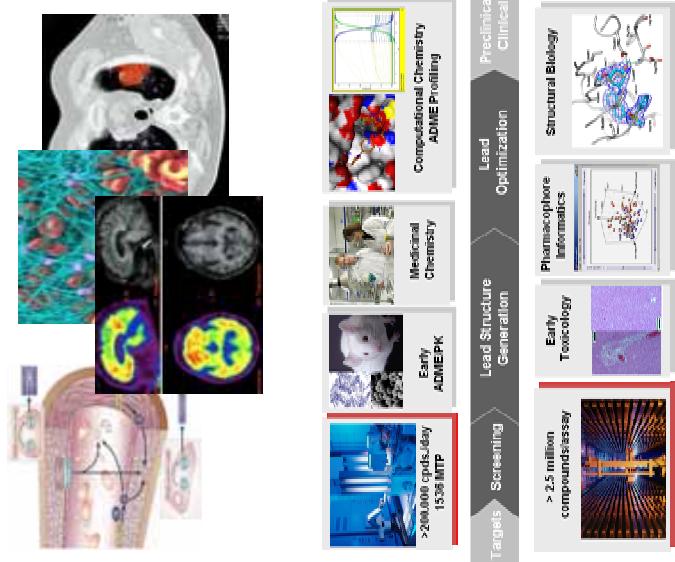
June 2007



Bayer Schering Pharma's R&D Strategy

Efficiency, quality and value maximization

Fully integrated organisation instead of silos



→ Fully integrated discovery organisation
allows maximum leverage of assets

❑ Well defined research process up to Proof-of-concept in man

- >2.8 million compound library and strong MedChem
- Strengthened biologicals research function
- World class pharmacology in cardiology, gynecology and molecular imaging
- Integration of development functions in research process
- Big box approach in Europe (cost efficiency, communication)
- Very stringent criteria for phase transitions, e.g. for development candidates

❑ Common mechanism approach

- Special common mechanism functions (CMR)
- Value maximization cross and beyond own therapeutic areas

Bayer Schering Pharma's R&D Strategy

Focus combined with selected opportunities

Focus

- Focus indications
- Research centered in Germany:
Berlin & Wuppertal
- Core competencies (e.g.
Screening, MedChem,
Pharmacology, Toxicology)
- Specialty indications



Opportunities

- Common mechanism research
- Innovation centers US & China
 - Strategy for innovation sourcing
 - Expansion from specialty to larger indications
- R&D for pharmerging markets

Main Sites

Employees in R&D 5,912 (as of Dec. 31, 2007)



Berlin

Global Drug Discovery

Innovation Centers



US West Coast



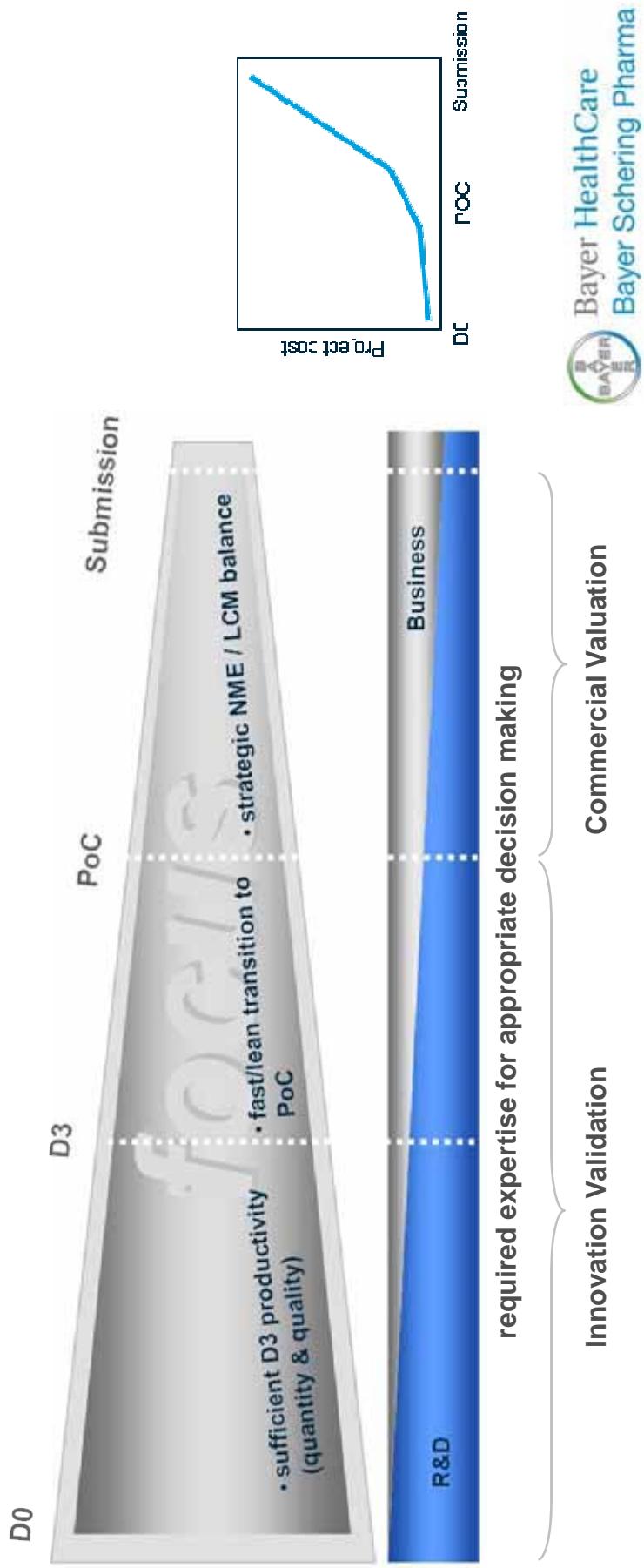
Beijing



Bayer Schering Pharma's Value Chain

Facts of R&D Productivity in Pharma

- Alignment of R&D and business on **research area** (General Project Frame)
- Portfolio funnel must deliver **sustainable** mid/late stage & **reimbursable assets**
- Rapid decision making based on appropriate expertise
- Project costs 'explode' after PoC (**proof of concept**)
- First human data** or **PoC** represent most significant **first step in value generation**



Bayer Schering Pharma's R&D Strategy

Leadership, Culture & People

- Entrepreneurship lived as No 1 behaviour**
Think strategically & prospectively on all management levels
- Drug hunting mindset**
- Culture supports continuous change**
- Project/Expert teams as centers for innovation & decision making**



Bayer Schering Pharma's R&D Pipeline

A balanced mix of New Molecular Entities and LCM opportunities

Despite the challenges to R&D, Bayer Schering Pharma brought a constant flow of NMEs to the market while reducing its cost basis



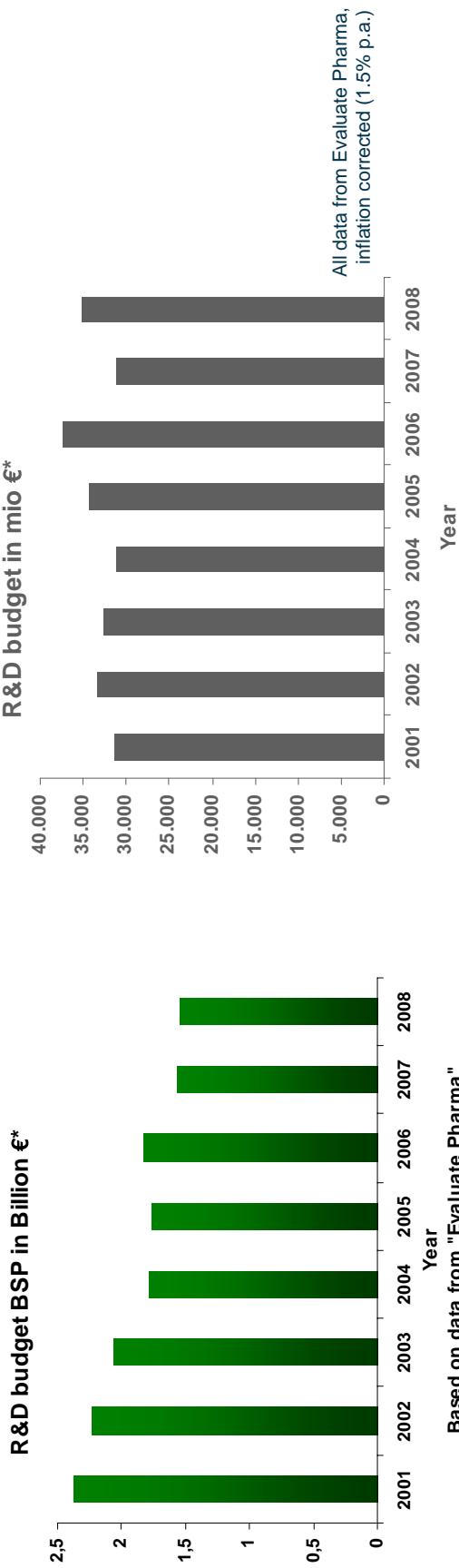
Bayer Schering Pharma's R&D Strategy

R&D costs and productivity

- Constant output of preclinical candidates at decreasing cost level



Sum of the R&D budgets of
10 major Pharma companies
in Billion €*



- Success rates for overall development (preclinical – launch) substantially increased for our core indications and over industry benchmark



Bayer Schering Pharma's R&D Strategy

Facts about Innovation – Reality at Bayer Schering Pharma

Innovative Compound

- Xarelto® (innovative structure → first oral FXa inhibitor on the market)

Innovative Compound and Mode of Action

- Nexavar® (oral dual acting kinase inhibitor → first targeted therapy in kidney cancer, only approved drug with overall survival benefit in liver cancer)
- Cinaciguat (sol. Guanylate Cyclase activator → acute heart failure, Ph II)
- Riociguat (sol. Guanylate Cyclase stimulator → pulmonary hypertension, Ph III)

Innovative Indication

- Oral multi kinase inhibitor → pulmonary hypertension

Innovative Application Route

- Mirena® (IUS → 5 years long acting contraceptive), Wafer and Patches in Women's Healthcare

→ **Innovation is a key productivity factor**



Summary

Productivity ↑ and costs ↓ are key challenges in PH R&D

Strategies to increase “true” productivity

- Winning concepts: Proof of concept and Common Mechanism
- Operational Excellence and integrated technology platforms
- Focus on specialty and innovation in areas of high unmet medical need
- Global Networks: Capturing innovation potential worldwide

Present pipeline assets have potential for sustainable BSP growth

Our aspiration ...

- Become a recognized innovation driver in Cardiology, Oncology, Women's Health and Diagnostic Imaging
- Discover innovative drugs to improve the quality of life for patients



Forward-Looking Statements

This presentation may contain forward-looking statements based on current assumptions and forecasts made by Bayer Group or subgroup management.

Various known and unknown risks, uncertainties and other factors could lead to material differences between the actual future results, financial situation, development or performance of the company and the estimates given here. These factors include those discussed in Bayer's public reports which are available on the Bayer website at www.bayer.com.

The company assumes no liability whatsoever to update these forward-looking statements or to conform them to future events or developments.



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