



“Investing in Partnerships”

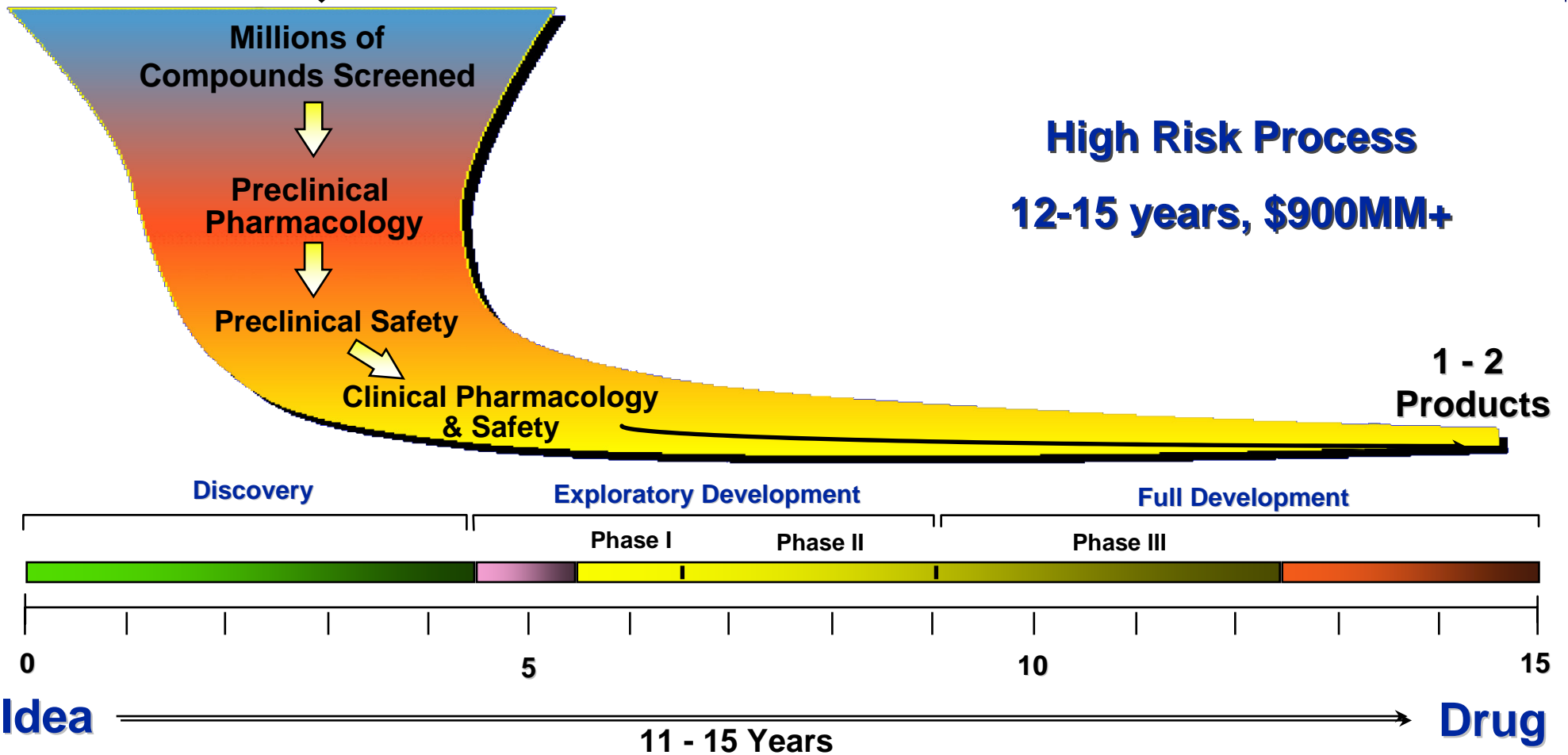




~150 Discovery Approaches

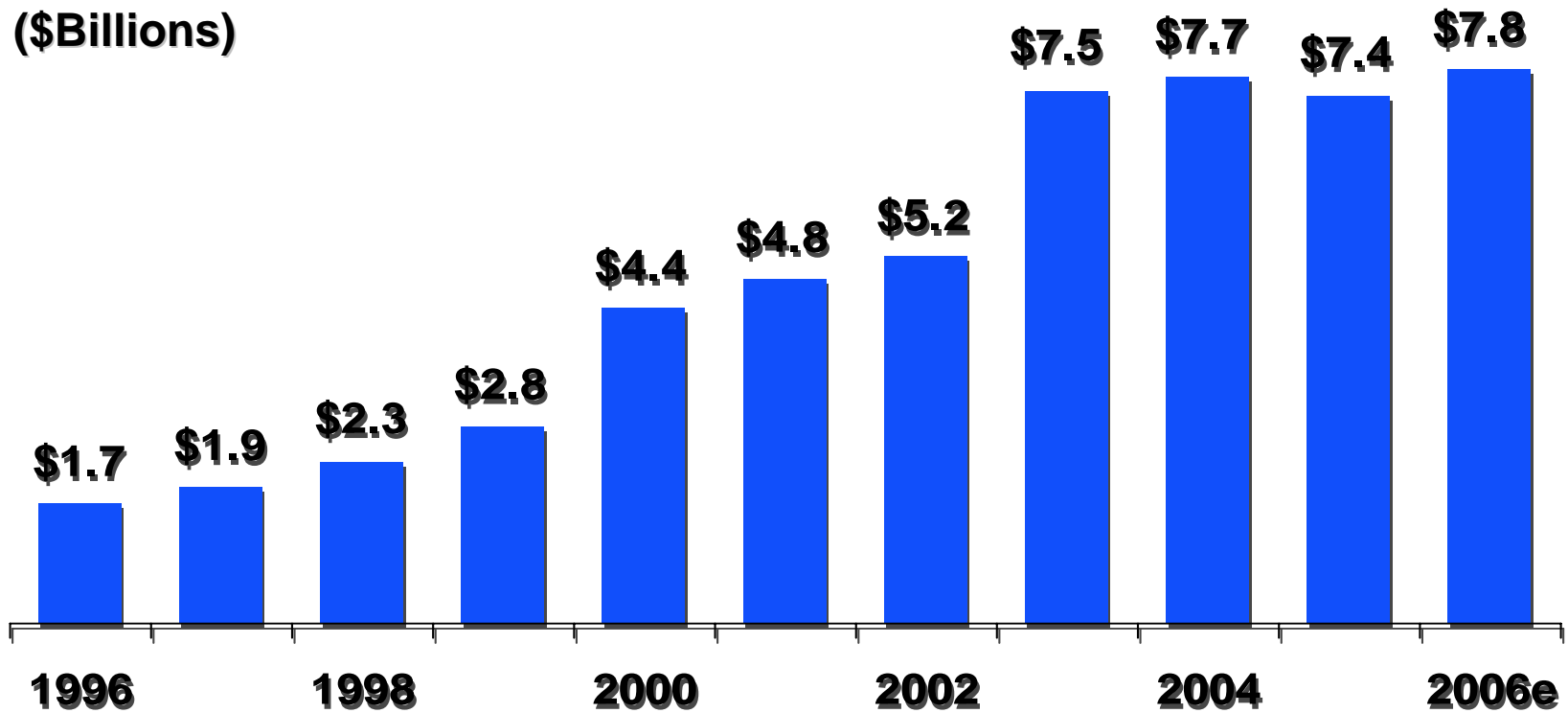
Drug Discovery & Development

High Risk Process
12-15 years, \$900MM+





Pfizer R&D Spending



Our Business Challenge

It's Getting Even More Difficult

- ◆ **100 Screens Produce 12 Candidates**
- ◆ **Average 12 years from idea to market**
- ◆ **1 in 20 - 25 survival rate during development**
- ◆ **8 years of market exclusivity**
- ◆ **Only 1 of 4 products shows a significant profit**
- ◆ **Average cost to develop a drug ~ \$1B**
- ◆ **Escalating investments & Wall Street expectations for growth**
- ◆ **Increasing regulatory requirements & speed of FDA approval process**
- ◆ **Expectations for sustained leadership and global presence (2-3 NCE/year with 15% growth)**



Alliances are key component of Pfizer R&D budget

- ◆ Approximately \$7.5 Bn spent on R&D annually
- ◆ Internal R&D covers only a fraction of the potential opportunities
- ◆ Alliance strategy builds on complementary strengths of Pfizer partners
- ◆ A diverse, healthy biopharmaceutical community is in Pfizer's best business interests





What, specifically, are we interested in?

- ◆ **Therapeutic drug candidates**
- ◆ **Development enablers**
- ◆ **Platform technologies**
- ◆ **New ideas**
- ◆ **Problem-solving**

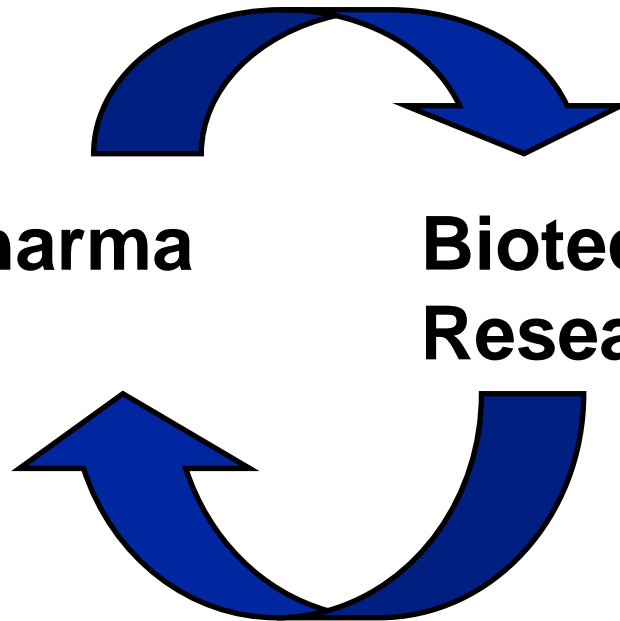


Alliances with Biotech & Research Institutes

Capital Resources
Clinical development
Regulatory assistance
Manufacturing
Sales & Marketing

Pharma

**Biotech & Academic
Research Institutes**



Innovative drugs
New technologies
Feed the pipeline

Evolving Mutualistic Relationships



PGRD Alliances - Guiding Principles

Our Strategic Alliance investments will:

- **Be Strategic**
 - Integrated & aligned with our internal investments
 - Leveraged from “*idea to drug*”

- **Address opportunities and gaps**
 - Enable us to *evaluate new opportunities* without making costly internal commitments
 - Provide *access to novel technologies* with the potential to *change the current R&D paradigm*

- **Be held to the same level of ROI requirements as our internal investments**

Partnerships are a key source of scientific diversity and innovation



What Does Strategic Alliances Do?

- ***Enable access to externally developed technology/intellectual property to enhance the PGRD pipeline***
- We are the interface between the PGRD scientists, the external companies/academia, legal and finance
- Investigates external opportunities (ie. technologies, biomarkers, etc.) to align with internal therapeutic area or line goals
- Negotiates deal of all sizes
 - Small (e.g. confidentiality, material transfer agreements, studentships, consultancies)
 - Major (e.g. inhalation devices, candidates seeking collaborations, high throughput screening technology, clinical imaging)
- Manages major alliances (>\$1MM)





Who are we?

Strategic Alliances is:

- About 50 business professionals and support staff
- Part of PGRD
- Primarily scientifically qualified
 - and/or business and legal qualifications
 - often with Pfizer scientific experience
- Broad ranging experience technology licensing, contract negotiations and alliance management.





Strategic Alliances: Not just Pharmaceutical Discovery

- ◆ **Pharmaceutical Sciences**
- ◆ **Bioprocess/Biologicals**
 - **Analytical R&D**
 - Major outsourcing deals
 - Automation Deals
 - **Chem R&D**
 - Major outsourcing deals
 - PGM deals
 - **Pharma R&D**
 - **Drug Delivery**
 - Product Enhancements
 - PGM links
 - PGP links
- ◆ **Information Technologies**
 - **Global licenses, services**
- ◆ **WWSS**
 - **New technologies**
- ◆ **Clinical Technologies**
 - **New technologies, biomarkers**
- ◆ **Clinical Research**
 - **Collaborations outside of clinical trials**
- ◆ **PDM**
 - **ADME assay collaborations**
- ◆ **Early Licensing Candidates with L&D**
 - **Cohesive teams with L&D and SA**



External Investment Vision

Our Alliance Investments

- ◆ Integrate and align with global strategies, initiatives & internal investments
- ◆ Address opportunities and gaps, creating new medical breakthroughs
- ◆ Enable cost-effective evaluation of novel approaches
- ◆ Access innovative technologies with potential to change the R&D paradigm
- ◆ Managed with respect to the science, business, legal and IP issues
- ◆ Assessed and monitored with appropriate metrics

Idea to LoE Alliance Management



Strategic Drivers: Assessing Opportunities

Portfolio Enhancement

- ◆ **Understanding Disease & Maximizing Value**
 - Therapeutic Area Alignment
 - Translational Research
 - Confidence in Target Rationale (CIR)

Effectiveness, Productivity

- ◆ **Drug Discovery and Development**
 - Compound and Program Survival
 - Accurate Attrition Decision Making
 - *Candidate Producing Collaborations*

Efficiency and Cost

- ◆ **Leveraging scale**
 - Synergy, Cycle-Times
 - Collaboration, Alignment
 - Strategic Sourcing

Intrinsic Value

- ◆ **Market Performance**
 - Line Extension – New Formulations
 - New Indications Discovery
 - Patient Acceptance/Compliance





Selection criteria used to choose partner

*Attributes
Same as a spouse*

- ◆ **Novel technology, first/best in class products**
- ◆ **Strategic, synergistic fit**
- ◆ **Straightforward in interaction**
- ◆ **Transparent process**
- ◆ **Mutual trust throughout the relationship**
- ◆ **Willingness to negotiate mutually beneficial partnership**
- ◆ **Conflicts get resolved openly and fairly**



Example: External Business Proposal (Technology)

- ◆ \$ Upfront/Technology access fees
- ◆ \$ FTE fees (# of FTE/year for # of years)
- ◆ \$ Milestones
 - technology development
 - proof of concept
- ◆ Technologies closely held by partner – not transferred

=====

\$\$\$ Total

Challenge: When adjusted for attrition, nets few \$ for the biotechnology company



Example: Pfizer Early Stage Alliance (Technology)

- ◆ >> \$ Upfront and Technology access fees
- ◆ Participation in Equity investments
- ◆ FTE fees (#'s per year for multi-year's)
- ◆ Milestones and Royalties not always relevant, but could be
- ◆ Technology transfer to Pfizer from collaborator

RATIONALE:

- Focus on delivering goals of the collaboration
- Accept some risk, but obtain near term revenue stream for company stability and new developments
- Not be distracted in raising additional funding to keep company viable during the term
- Encourages sharing technology platform



Problems to be solved

- ◆ ***“We can’t keep up with all of the scientific breakthroughs in medical research”***
 - Understanding disease pathogenesis and exploitable points of therapeutic intervention
 - Systems biology—integrated response to pharmaceutical intervention
 - Novel drug design (e.g., aptamers/nucleic acids, conjugates, micro RNA, nanoparticles, engineered proteins)
- ◆ ***“Our traditional assessment processes are slow, expensive and imprecise”***
 - Biomarkers of disease progression and reversal
 - Diagnostics (e.g., disease characterization, genomic classification, imaging)
 - Modeling (clinical trial design, bioinformatics)
- ◆ ***“Shortcomings exist in product development fundamentals”***
 - Formulations and delivery
 - Predicting safety
 - Process efficiency
- ◆ ***“Insufficient substrate is available for compelling medical needs”***



R&D Therapeutic Areas

Allergy & Respiratory

Antibacterial

Antifungals

Antivirals

Atherosclerosis

Cancer

Cardiovascular

Diabetes

Immunology

Inflammation

Neurodegeneration

Obesity

Ophthalmology

Osteoporosis/Frailty

Pain

Psychotherapeutics

Sexual Health

Tissue Repair

Urology





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“Productivity Through Partnerships”





Questions