

FPTT 2009 National Meeting

Panel on The Future in Collaborations and Partnerships

Addressing Inefficiencies in Translating Research into Products & Technologies

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Who We Are

Canada's Research-Based Pharmaceutical Companies (Rx&D)

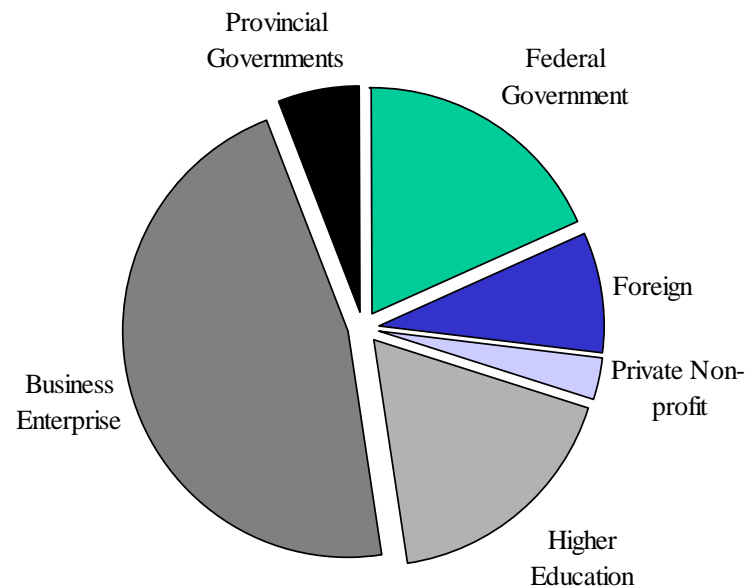
National association representing over 20,000 men and women who work for more than 50 research-based pharmaceutical companies in Canada

Presentation Outline

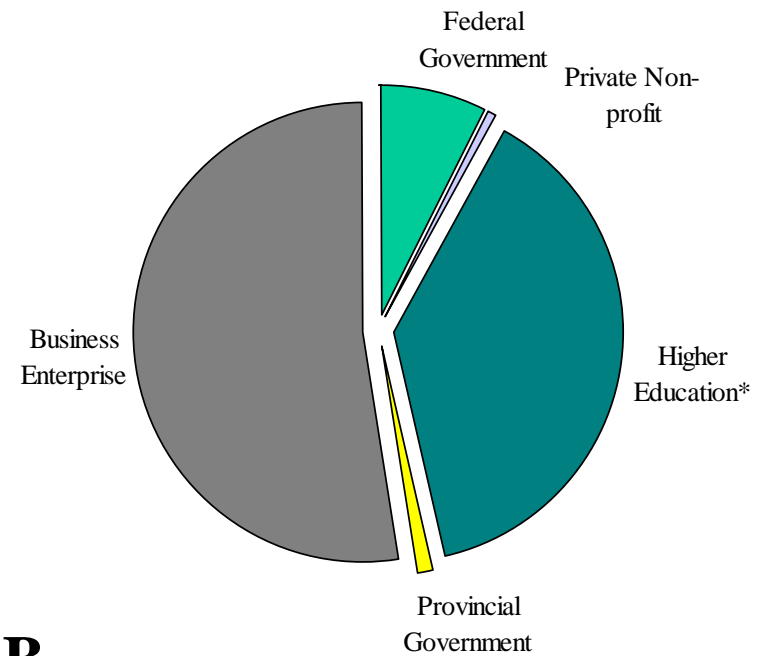
- Business as funder/performer of R&D
- R&D Productivity Gap
- Can we do better – through collaboration?
- Supportive regulations
- Outlook in Canada

GERD by Funding and Performing Sector Canada - 2006

Funding



Performing



\$28.4B

Source: Statistics Canada, Total Spending on R&D in Canada, 1990 to 2006 cat. 88-001-XIE

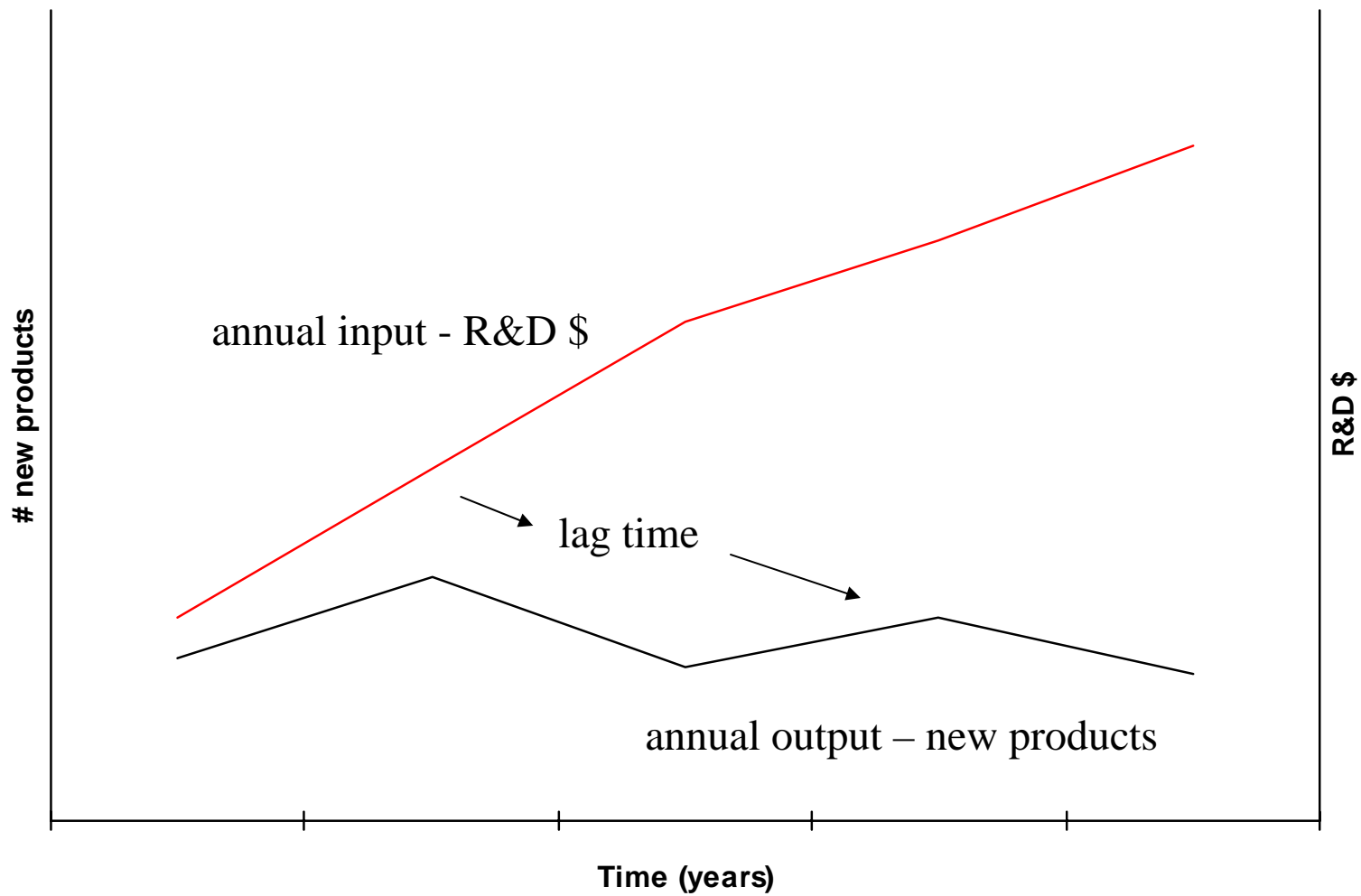
How does Canada Rank?

- “Middle of the pack” among 30 OECD countries in terms of BERD relative to GDP (2006)
- Productivity growth slower than most OECD countries (15th of 18 comparable countries)

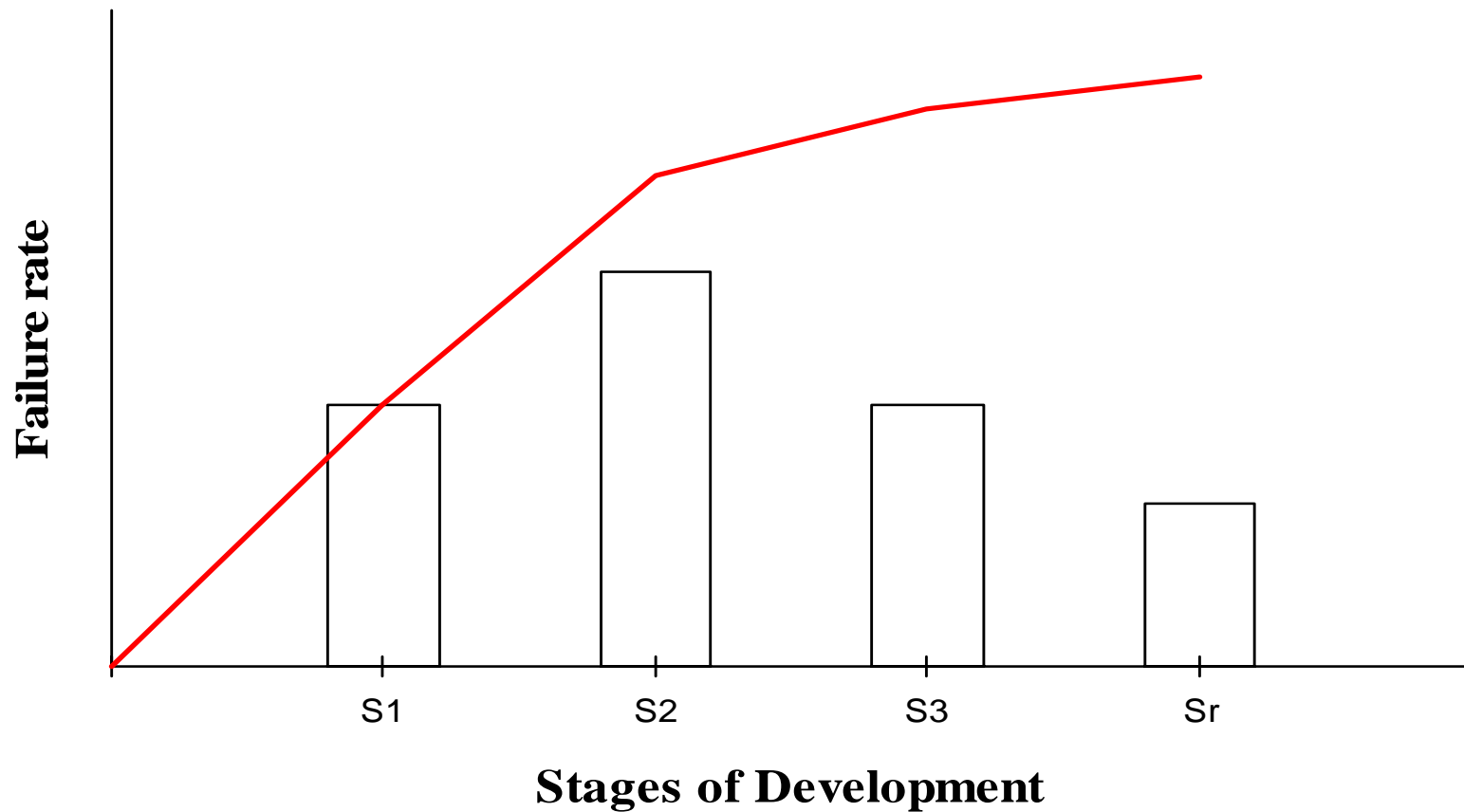
A Two-Pronged Strategy

- Widen pool of potential innovation by increasing R&D intensity
- Enhance efficiency of translating research results into innovation

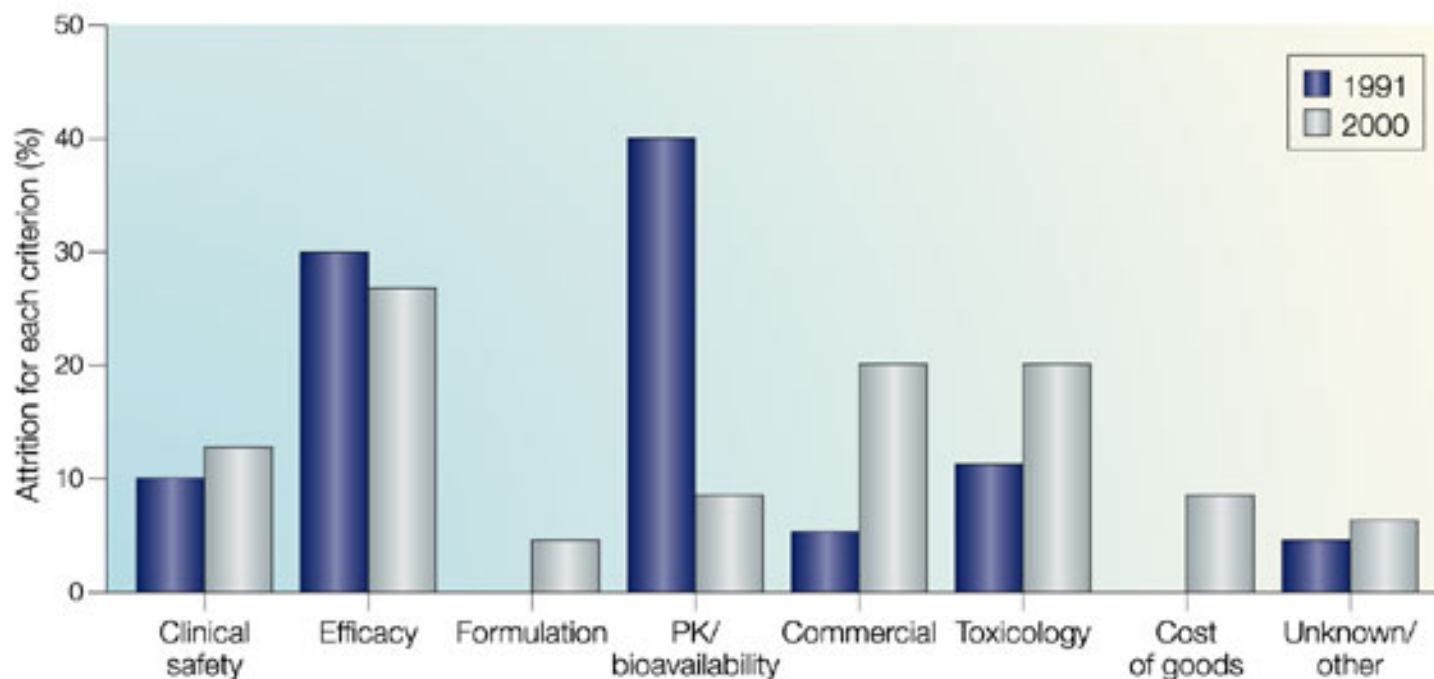
R&D Productivity Gap - Schematic



Attrition during Product Development- Schematic



Reasons for Attrition during Drug Development



Nature Reviews | **Drug Discovery**

vol. 3, issue 8, 711-716 (August 2004), I. Kola and J. Landis:
Can the Pharmaceutical Industry Reduce the Attrition Rate?

Can we do Better?

Some Basic Characteristics of Commercialization

- A long, uncertain and capital-intensive path
 - Many failures along the road for scientific, technological, regulatory or financial reasons
- Ideas come from many sources
 - Company internal research
 - Other firms (locally and globally)
 - University researchers (locally and globally)
- Each participant tends to go only so far...
 - University researcher – discovery, proof of concept
 - Spin-off companies – early/medium stage development
 - Large firms – bring self-originated and acquired concepts through development continuum to market

Public-Private Synergies

- Concerted approach to address inefficiencies in research translation
- Combine intellectual capability of both research communities
 - Modernize how a discovery or proof of concept is transformed into a product or technology
 - Identify and resolve bottlenecks
 - gain an earlier and more reliable prediction of the attributes of products under development
- Consortia are possible for research of general applicability to different R&D programs of participants
i.e. broadly based pre-competitive research
 - Enabling methodologies
 - Platform technologies

Sector-wide PPP

Efficiency of Product Development Process



The **I**nnovative **M**edicines **I**nitiative

PPP between the pharmaceutical industry in Europe (EFPIA) and stakeholders in the European communities represented by the European Commission

Overall goal: make Europe again the world leader in pharmaceutical research for the benefit of the economy and society, by identifying and removing research bottlenecks in the current drug development process

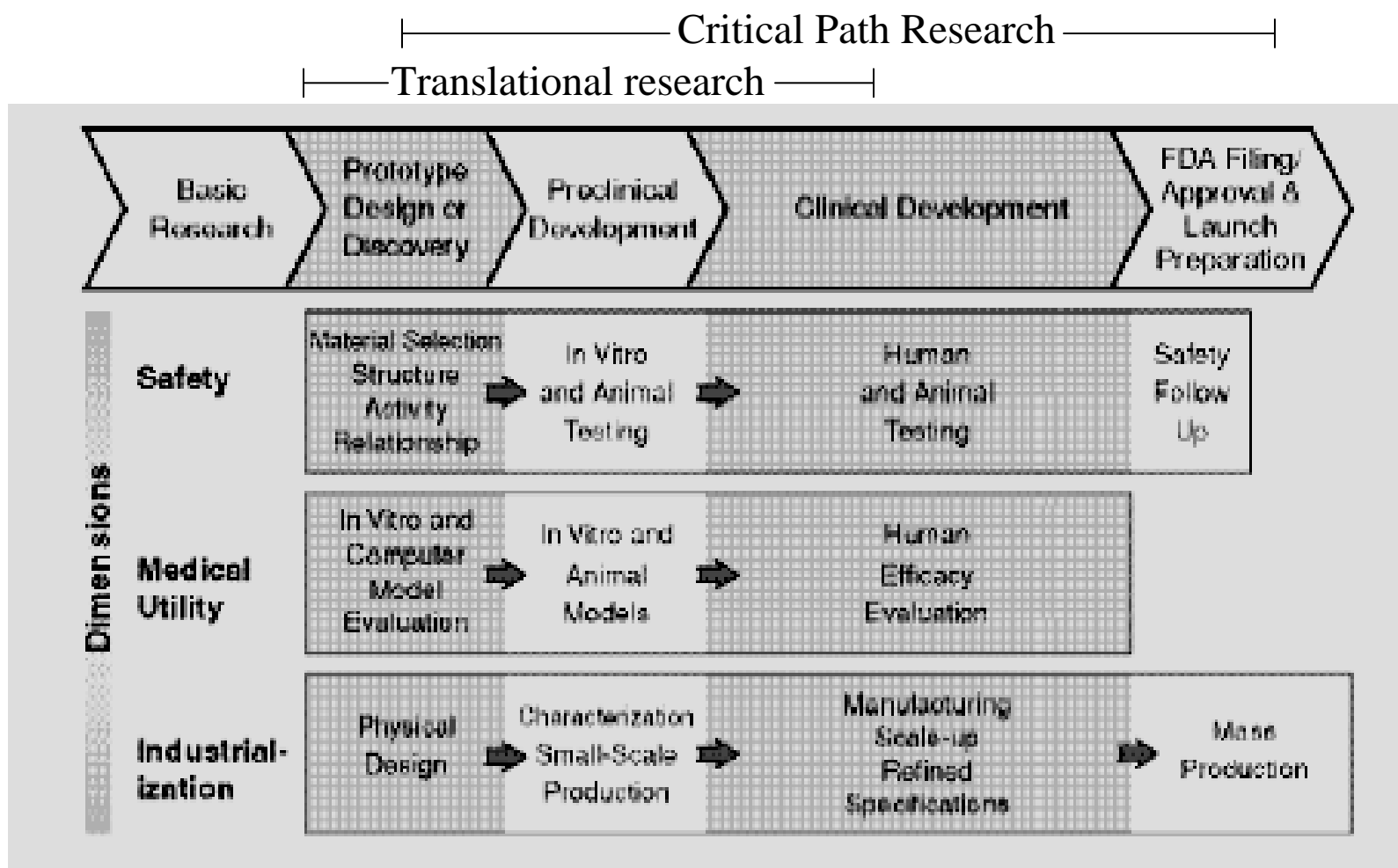
Modernize process through which a potential human drug...is transformed from a discovery or "proof of concept" into a new medical product



PPP involving the FDA, other federal agencies, academic researchers and health care industries

Overall goal: improve the efficiency of product development industry-wide; identify/prioritize the most pressing development problems and the areas that provide the greatest opportunities for rapid improvement

Critical Path for Drug Product Development



Cross-Sector Scientific Collaboration

- Need to foster a culture of collaboration based on:
 - Professionalism and trust
 - Collegial involvement
 - Communication - opportunities and needs
 - Reasonable ways to manage conflicts of interest and confidentiality

Nurturing the Partnerships

- Make sustained efforts at managing the relationship and cultural differences
- Define the alliance process
- Emphasize scientific fit and strategic interest
- Maintain good communication
- Establish effective governance
- Look at the partnership performance
- Engage the business strategy team

Balanced Policies & Regulations

- Research-Based firms
 - Compete through science
 - need to create assets from knowledge they generate/acquire
 - derive competitive advantage from management of confidential information/intellectual property
 - Face significant financial risk with R&D
 - SR&ED tax incentive program
 - Applies whether project successful or not
 - Room for improvement e.g. disallows R&D milestone payments to start-up companies in context of acquisition of IP rights
 - Need balanced and aligned regulations
 - multiple regulatory factors affect individual sectors

Outlook in Canada

- Fundamentals for partnering in place
- Maintain culture that encourages active collaboration, recognizing the expertise and professionalism of scientists in both public and private research communities
- Develop better understanding of differences in project management and decision making
- Leverage scientific expertise and financial resources toward common goals
- Pursue efforts to address structural regulatory factors in a comprehensive strategy with all relevant policies and regulations appropriately balanced

Thank you – Merci