



BBMRI and the European Research Infrastructures for Biological and Medical Sciences

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Role of Research Infrastructures for a
Competitive Knowledge Economy
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The Next Big Questions

Why are we different?

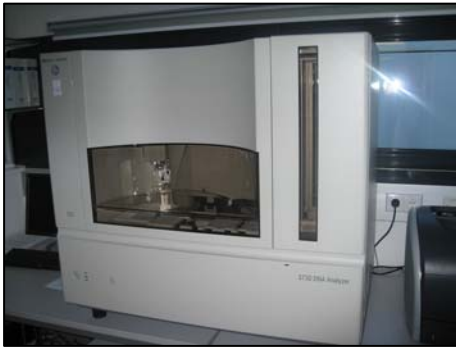
- Why remain some healthy until high age?
- Why do some develop certain diseases?
- Why do some respond to therapy?
- Why do some develop adverse drug reactions?



- 1000 genomes project
- Cancer genome project
- Innovative Medicines Initiative
- Personalized medicine



Progress in Sequencing Technologies



Sequencing of the human genome:

2001: Human Genome Project

10 years - 3 bio. USD



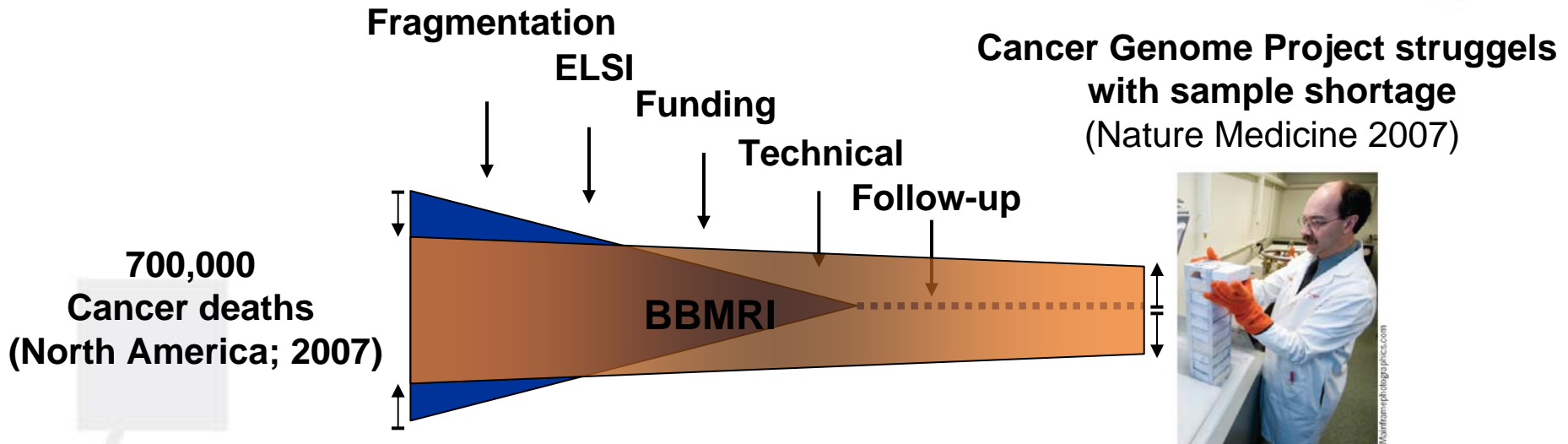
2008: Next generation sequencing

10 hrs - 50,000.- USD

Allows new research approaches
Shifts bottleneck to biological samples and data management



Biobanks in Medical Research



NCI: Biological samples are #1 roadblock

OECD: Global Biological Resource Centre Network

WHO/IARC: Standards for biological resource centres

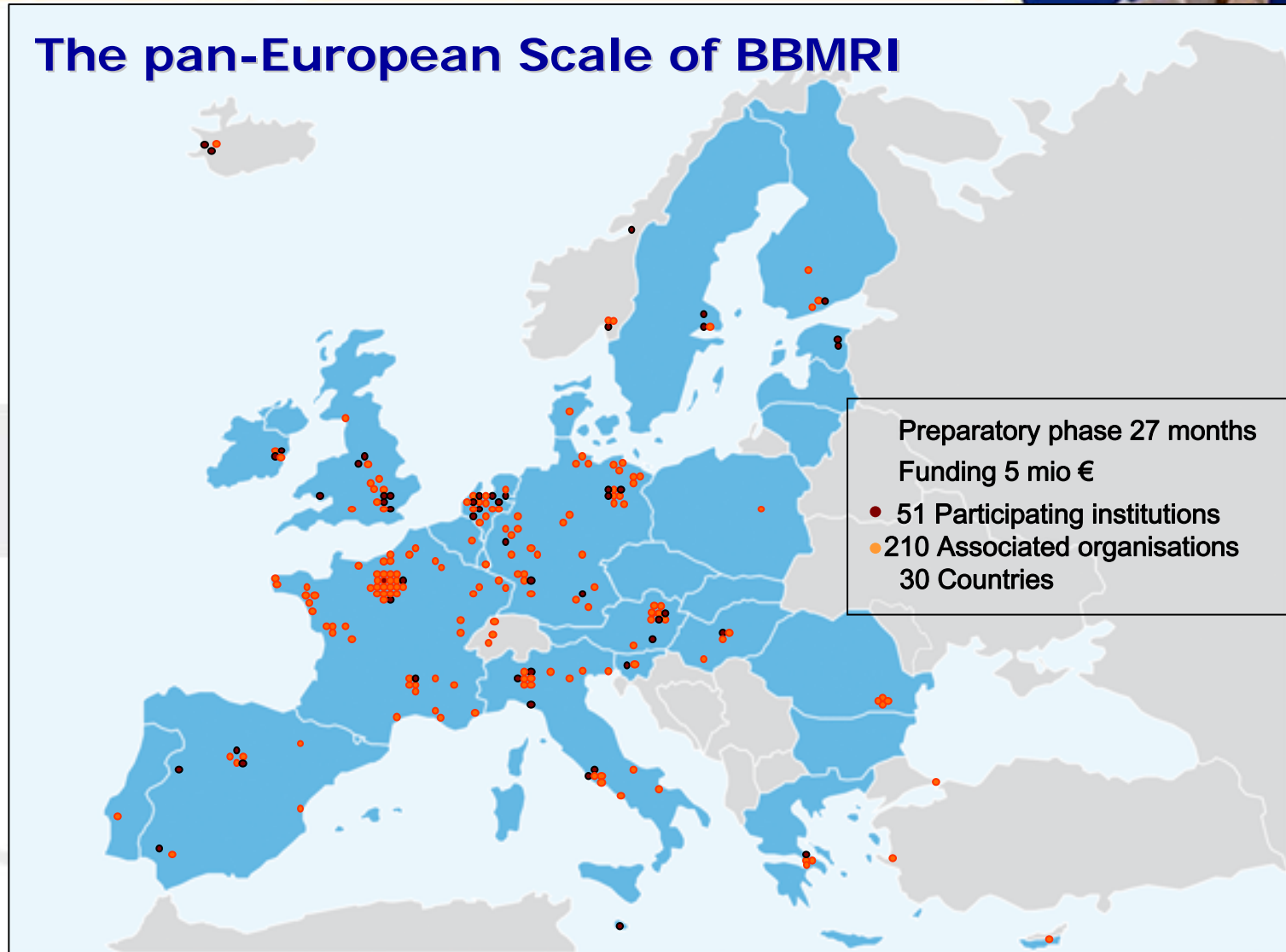
ESF: Science Policy Briefing: Need for integration

EU/ESFRI: Research infrastructure for Biobanks and
Biomolecular Resources (BBMRI)

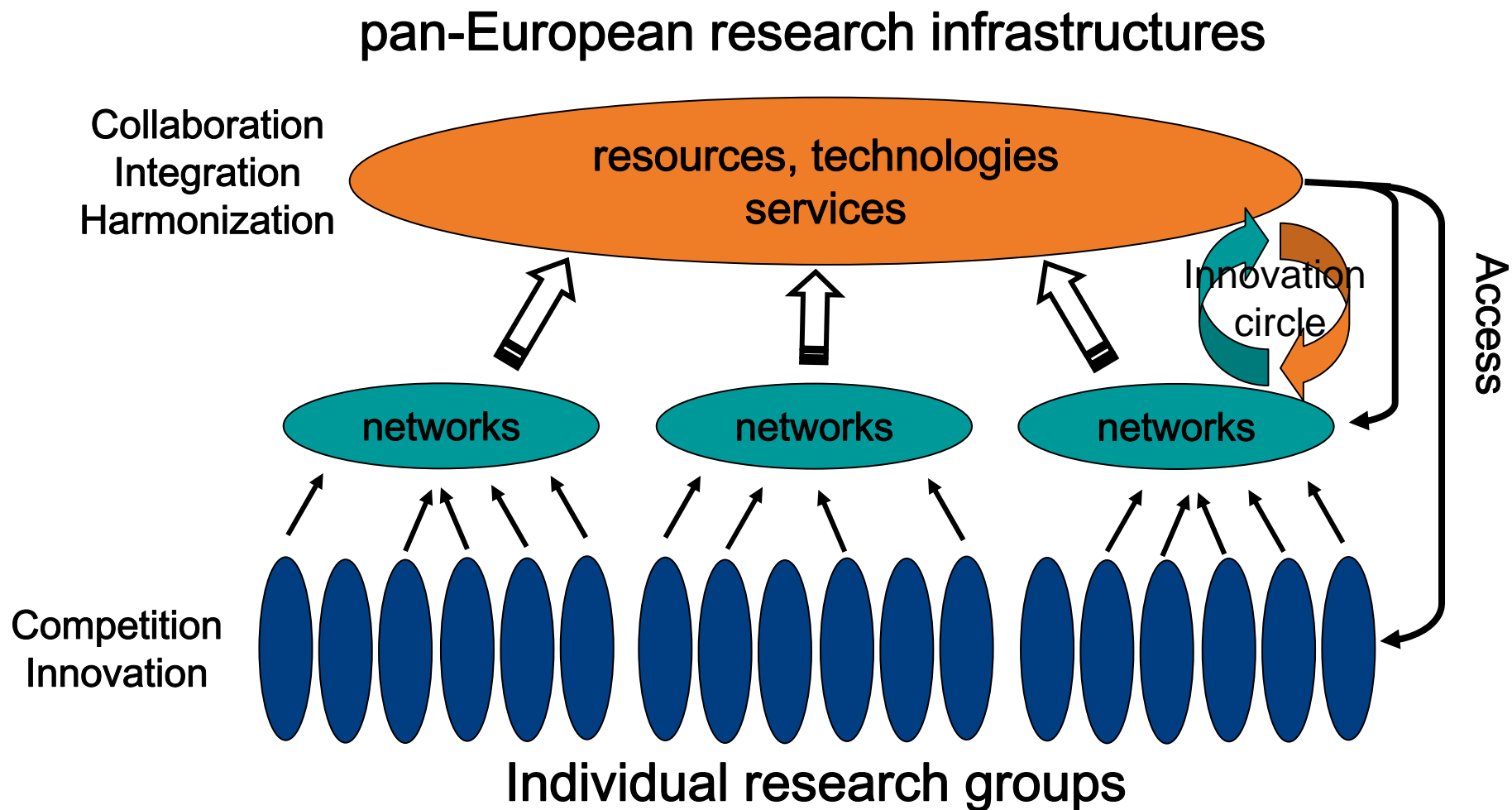
Managing resources for biomedical research



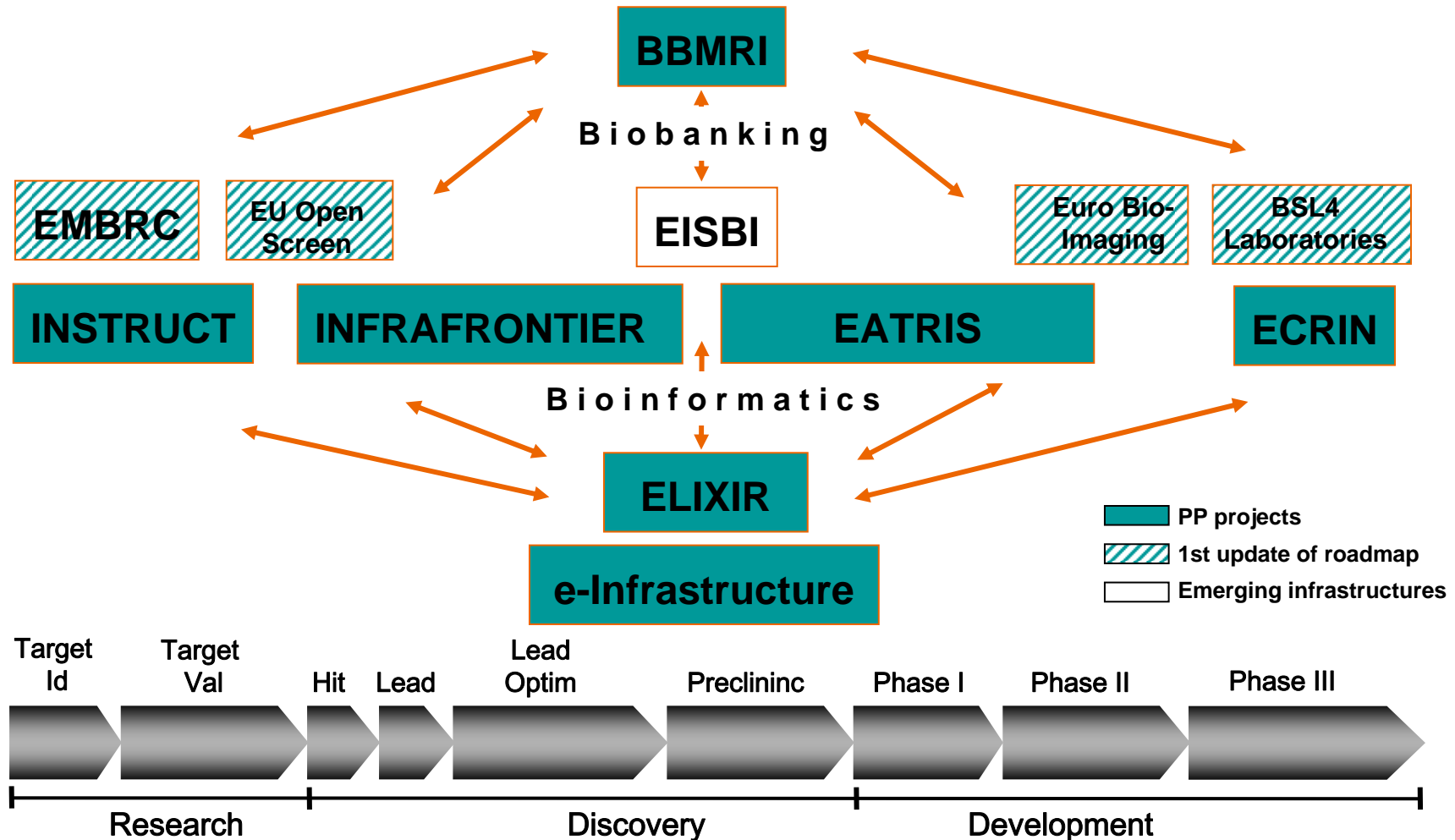
The pan-European Scale of BBMRI



RI: The New Dimension in Life Sciences Research



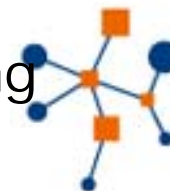
Synergies of BMS Research Infrastructures





What are the Big Changes?

- Elimination of bottlenecks in biomedical research
- Generation of value for society by collaboration
- Establishment of a new innovation cycle
- Generation of a homogenous legal landscape for research
- Great flexibility to address Member States needs
- Direkt positive stimulus on regional development in all participating Member States
- Facilitated participation of Southern and Eastern European Countries
- BMS research infrastructures generate an unprecedented momentum and joint forces
- Establishment of a complete value generating chain without gaps





BMS RIs will Increase European Competitiveness in Health-related Economies

- Health-related economies are the potential next driver of global economy
 - More than two times more new jobs than in other fields
 - Life sciences had highest increase in R&D expenditures



BBMRI and Publics

- Socio-economic impact study
(impact on science, industry, health care)
- Public perception (focus groups and Eurobarometer)
- Co-ordinated communication strategy of all BMS research infrastructures (joint task force)
- White paper for European Parliament



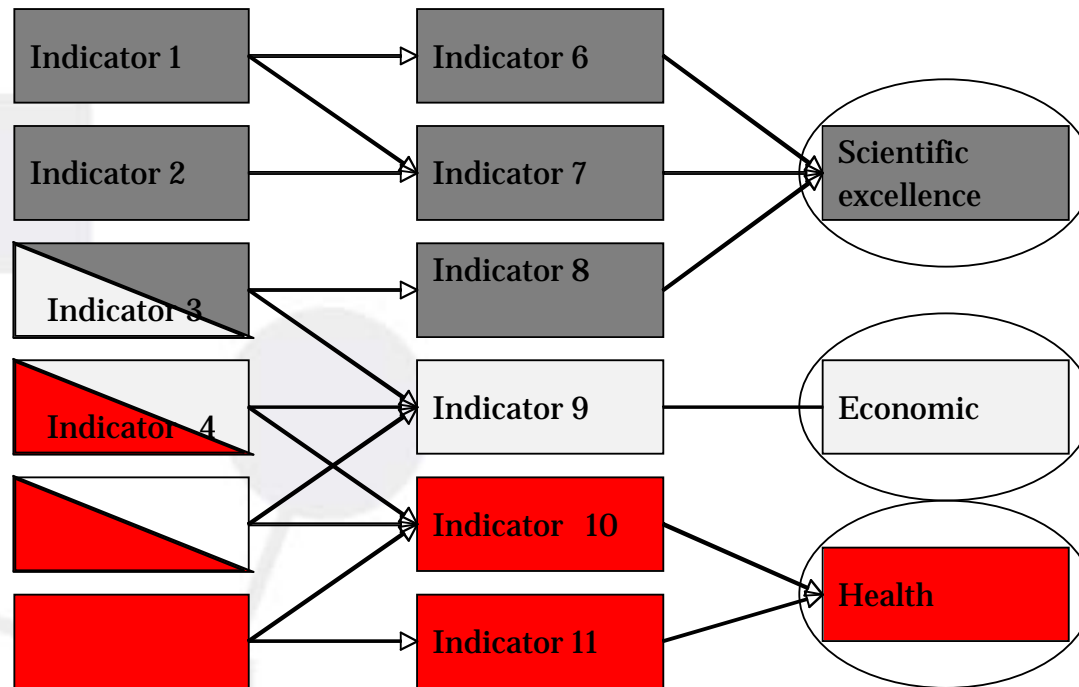
BBMRI Socio-Economic Impact Study

- Technopolis
- BETA
- EuroCryo Saar
 - Impact on science
 - Impact on industry
 - Impact on health care



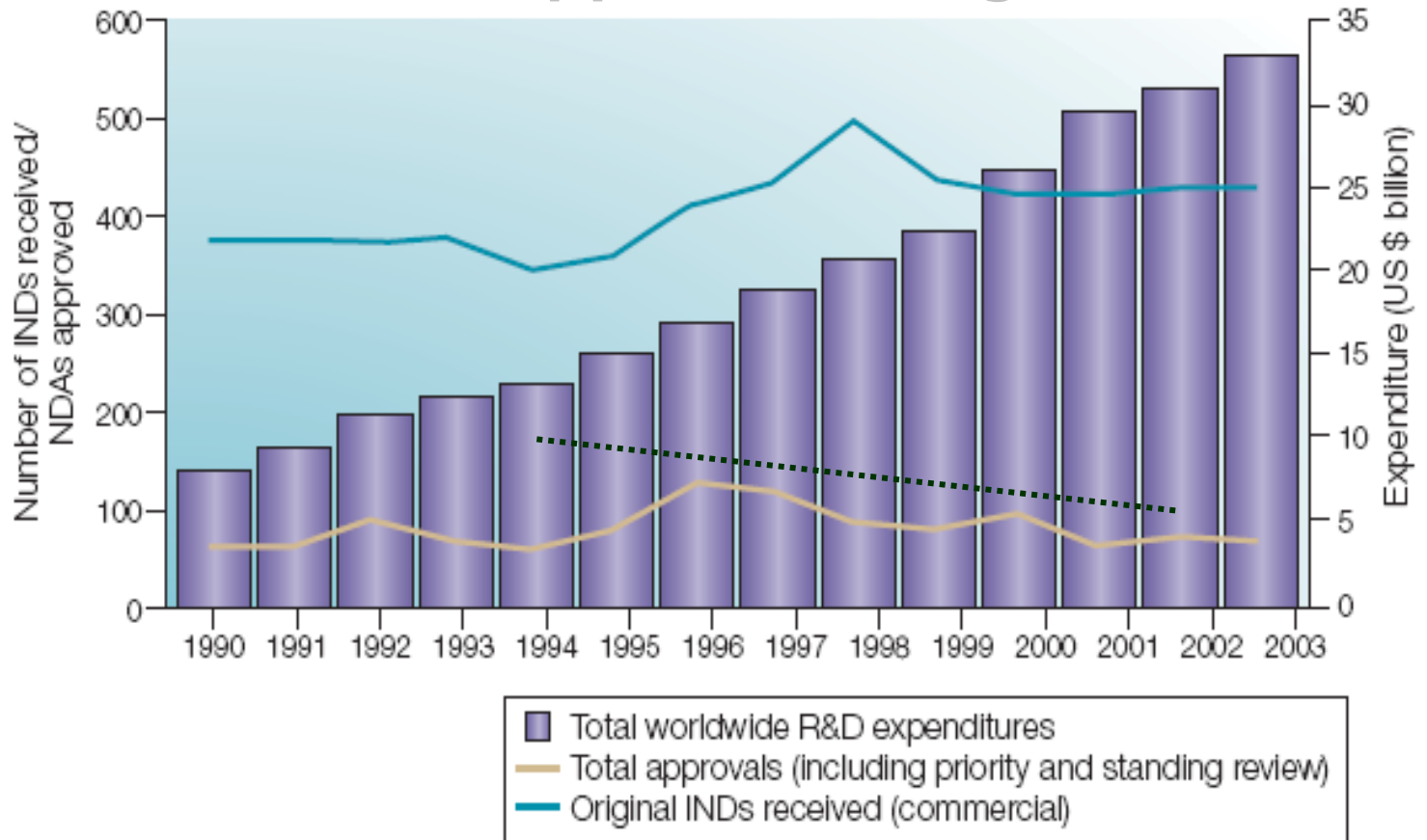
The Approach

- Ex-ante impact assessment
- Coherent evaluation and monitoring strategy





Discrepancy Between R&D Expenditures and New Approved Drugs



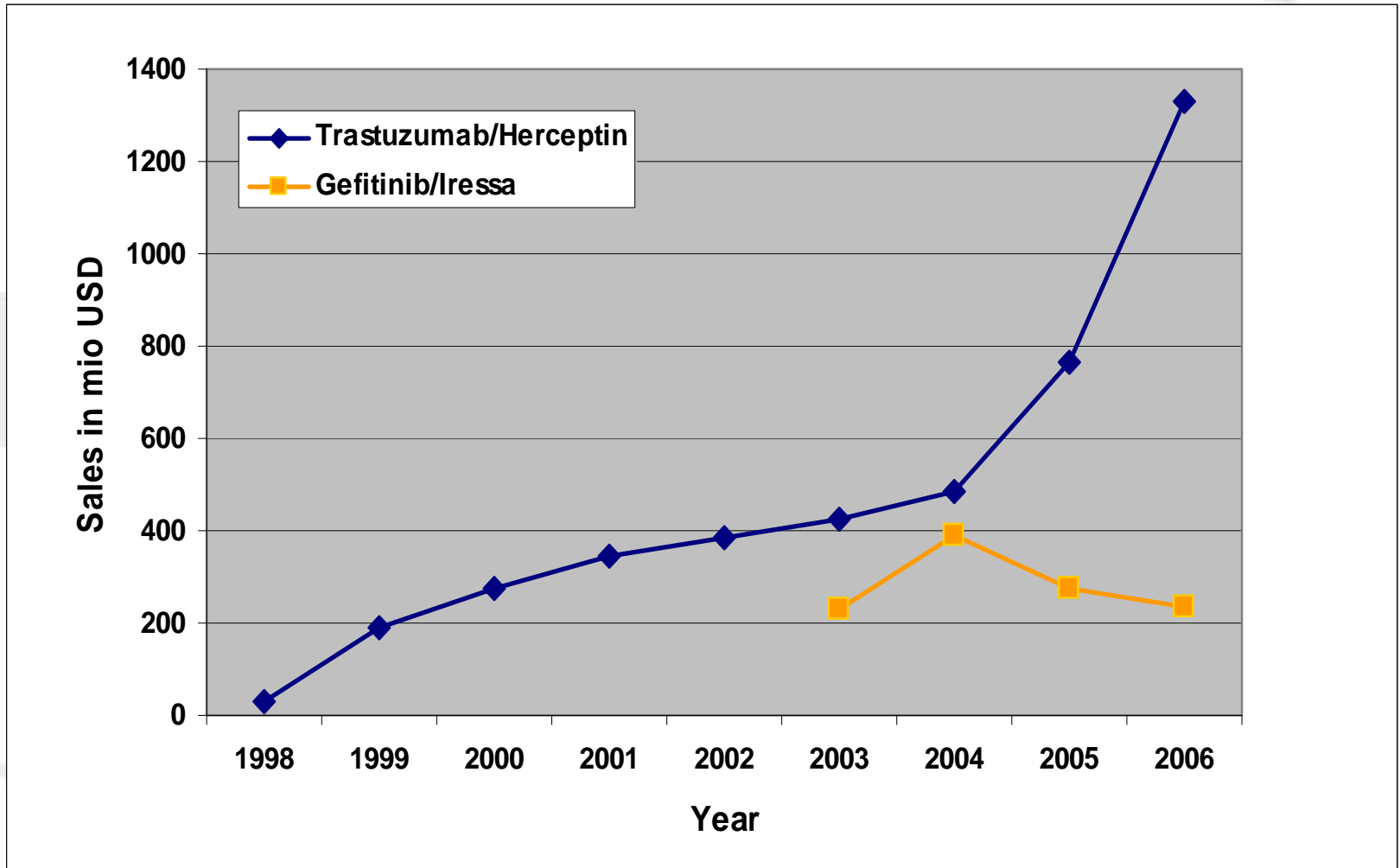


Case Study: Impact of Biomarkers on Drug Development

case	cost reduction	patients screened	patients saved failure under treatment
trastuzumab Her2 IHC+ v. none	62,3%	3350	714
trastuzumab Her2 IHC+ PTEN+ v. Her2 IHC+	14,5%	991	56
trastuzumab Her2 FISH+ PTEN+ v. Her2 IHC+	29,5%	1002	111
erlotinib EGFR+ v. none	37,8%	994	158



Sales of Targeted Therapies





How to Capitalize?

- Requires co-ordination and collaboration at national, European, and global levels
 - Redefine research strategies
 - New business models
 - Proper legal framework
 - Sustainable funding tools
- Co-ordinated communication strategy
- Obtain support by publics and political decision makers