

User-Driven Innovation

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There is a focus on research push

Phase 0
Curiosity
Driven
Research

Phase 1
Solution Design

Phase 2
Applied R&D
up to prototype

Phase 3
Applied R&D up to
first test product

Phase 4
Production of
commercial volumes of
product/service

Research push

Political supply programs to increase competitiveness

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up to prototype

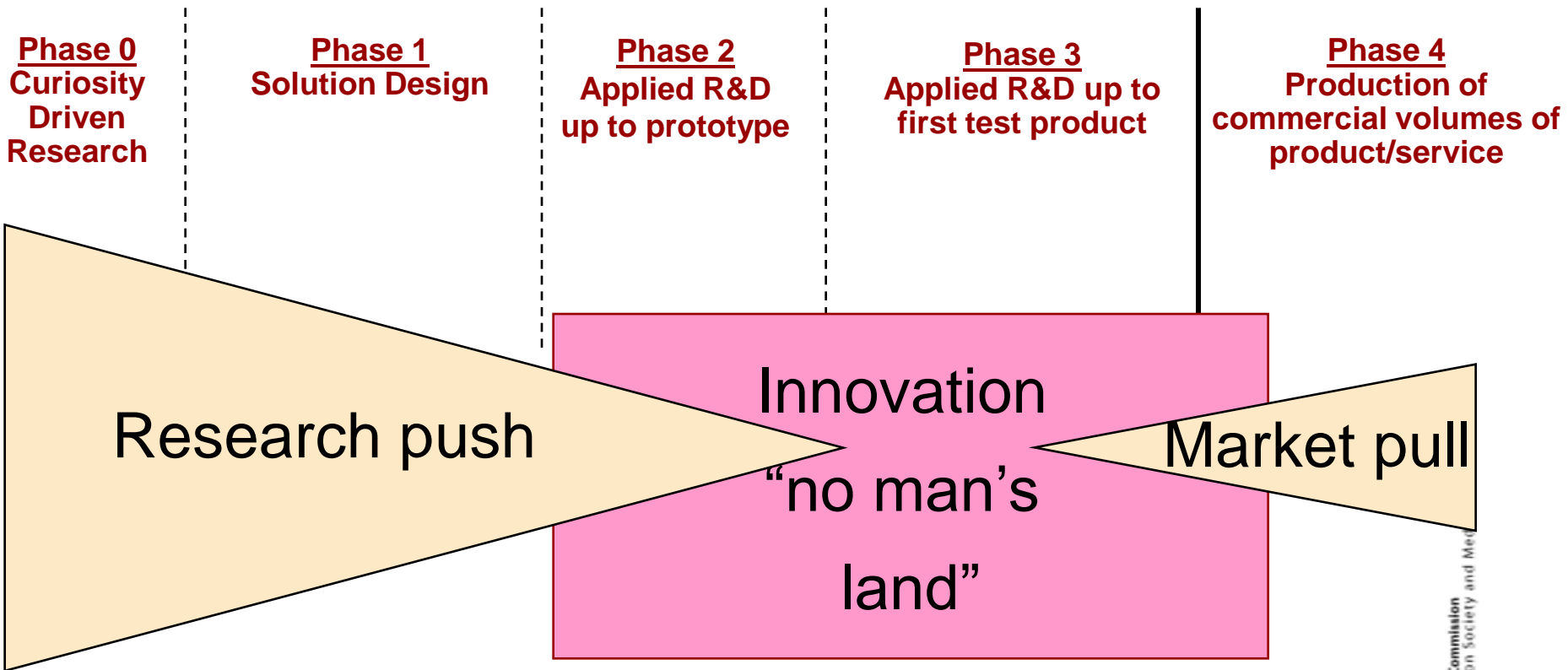
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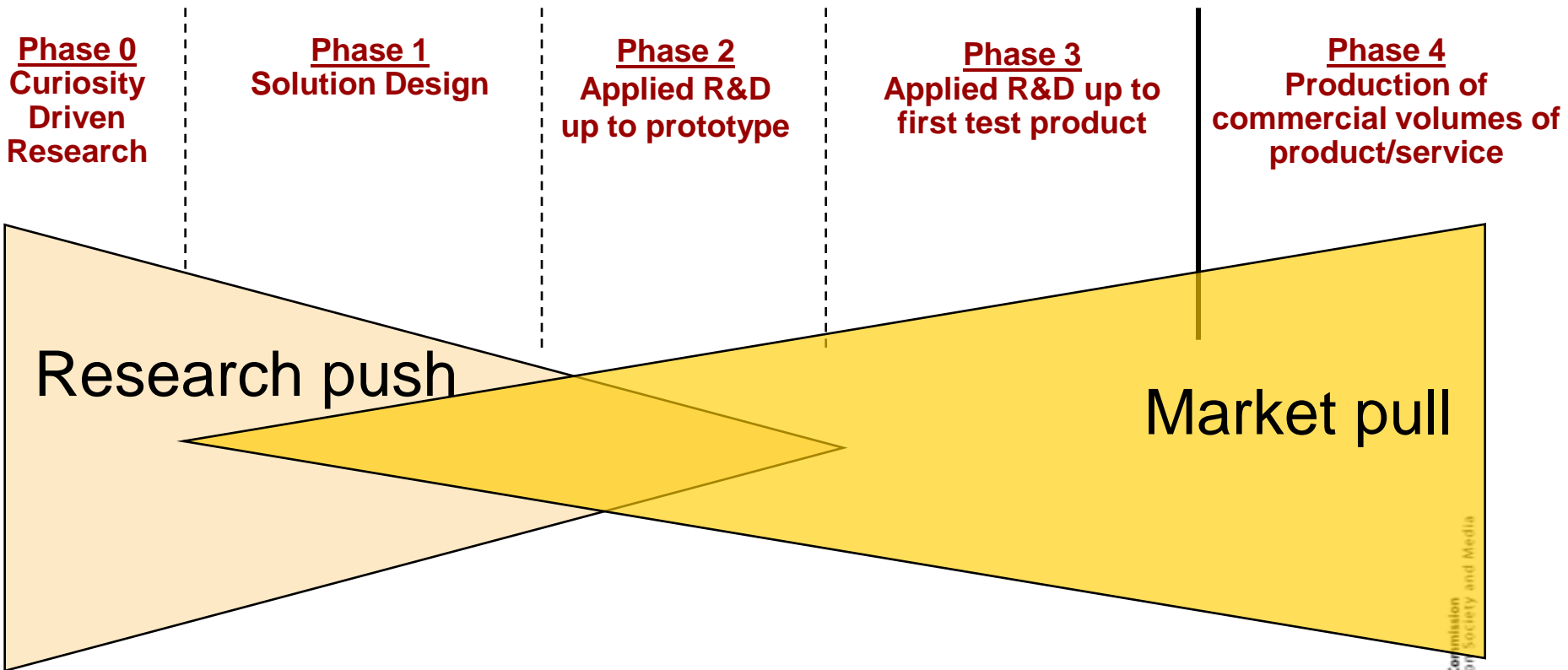
IT
Bio- and Nanotech
Robotics
Clusters



There is a missing link in the innovation cycle



The missing link: User-driven innovation



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Research push

Market pull

Pre-Commercial Procurement

Forward Commitment
Procurement

Procuring
Innovations

The US and the European Public Sectors have enormous purchasing power

2000 Billion €

In Europe only some **3 billion €** is used for procuring the research and development of new products and services

US spent 2004 **50 billion \$**, mostly on defence, but still *four* times as much as Europe in areas as health and energy



US example

Supercomputers

- Public needs: modelling energy and weather systems etc
- Approach: Pre-commercial and competitive multi-supplier procurement

Procurer

Dept of Energy

DARPA, Universities

Dept of Energy

Technology

Early
supercomputers

Timesharing

Supercomputers

Company

CDC/ETA, IBM

DEC, CDC, IBM,
Univac

Cray, IBM, SGI,
Sun, HP

Europe starts awakening to the opportunities

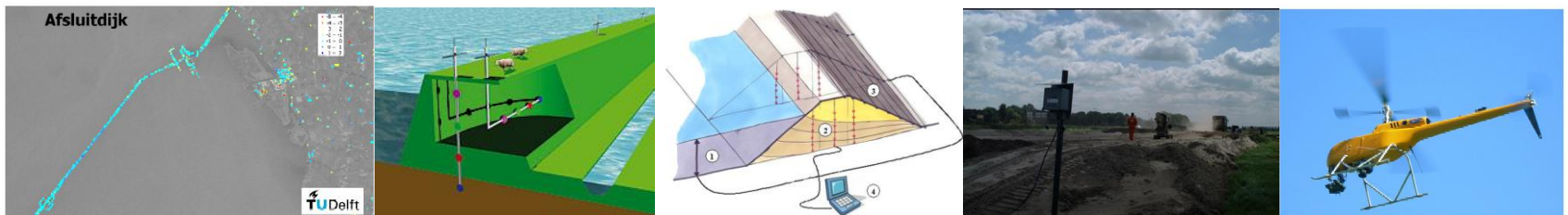
Addressing dike problems in the Netherlands

- Dike burst in Wilnis (August 2003) caused by **dry** period that weakened peat dike
 - Leak in the dike in Spijk (January 2004) caused by broken water pipe **inside** the dike along Juliana canal.
- Start Improvement inspection of dikes and dams:
- Need for new techniques for real time visual dike inspection and early warning systems



A Pre-Commercial type procurement (SBIR) directed towards small companies

- New parties: from other sectors and start-ups
- Budget for phase 1 (5 companies) – 250,000€
- Budget for phase 2&3 (2 companies) – 850,000 €
- Instead of theoretic market studies, prospect of solving problem
- 2 systems entering the market within 5 years, today starting to sell to Dutch and US procurers



Pre-Commercial Procurement in UK National Healthcare Service



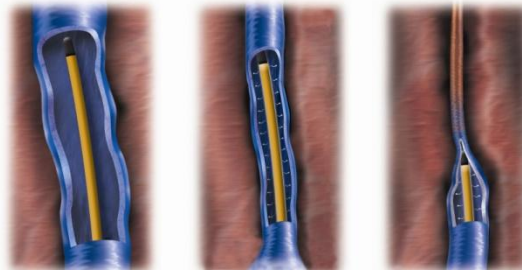
Potential £19m p.a. saving



Potential £160m p.a. saving



£4,000 per HCAI avoided



Disposable catheter inserted into vein

Vein heats and collapses

Catheter withdrawn, closing vein

Potential £17m p.a. saving



Potential £30m p.a. saving



www.nic.nhs.uk

Economic Benefits

Financial Year 2009/10

Value to NHS:

- The innovations improve the quality of the patient experience and generate potentially significant cost savings to the NHS (**£236m**).

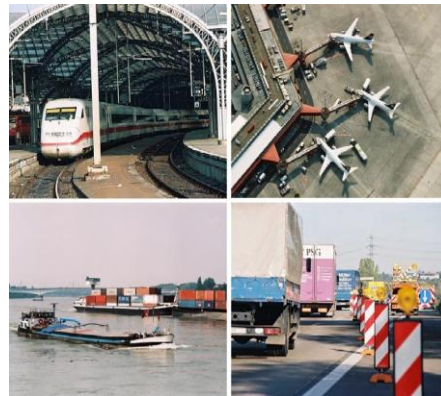
Value to the economy:

- Innovations driven by NHS have been able to attract significant funding (**£290m**).



The European public sector is facing major challenges

- Climate
- Energy
- Transport
- Health
- Security



*User-driven innovation
of new products and
services can help to
address the needs of
tomorrow*

