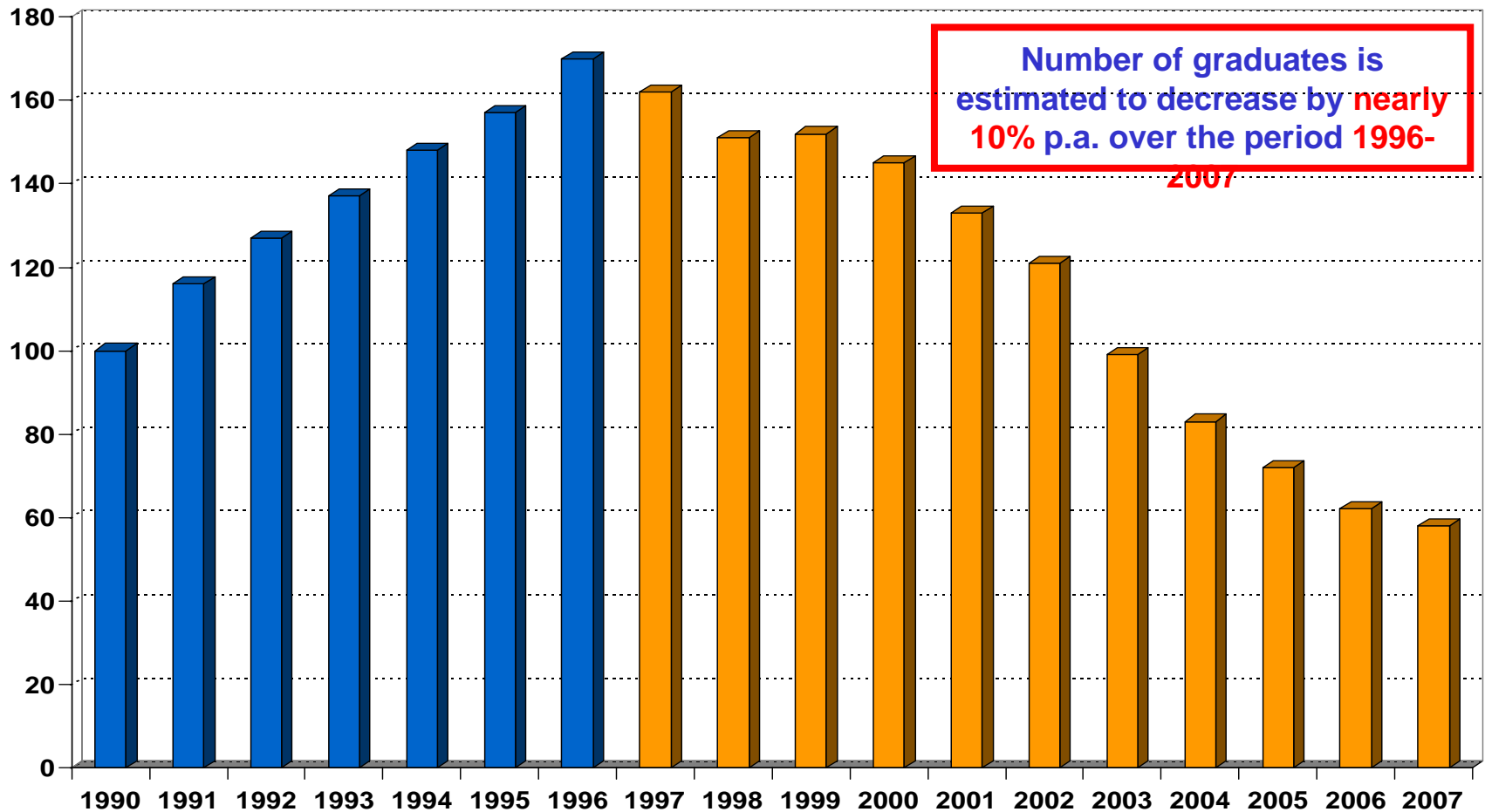




Chemical and industrial chemicals* graduates in major EU countries



Notes: *including pharmaceutical

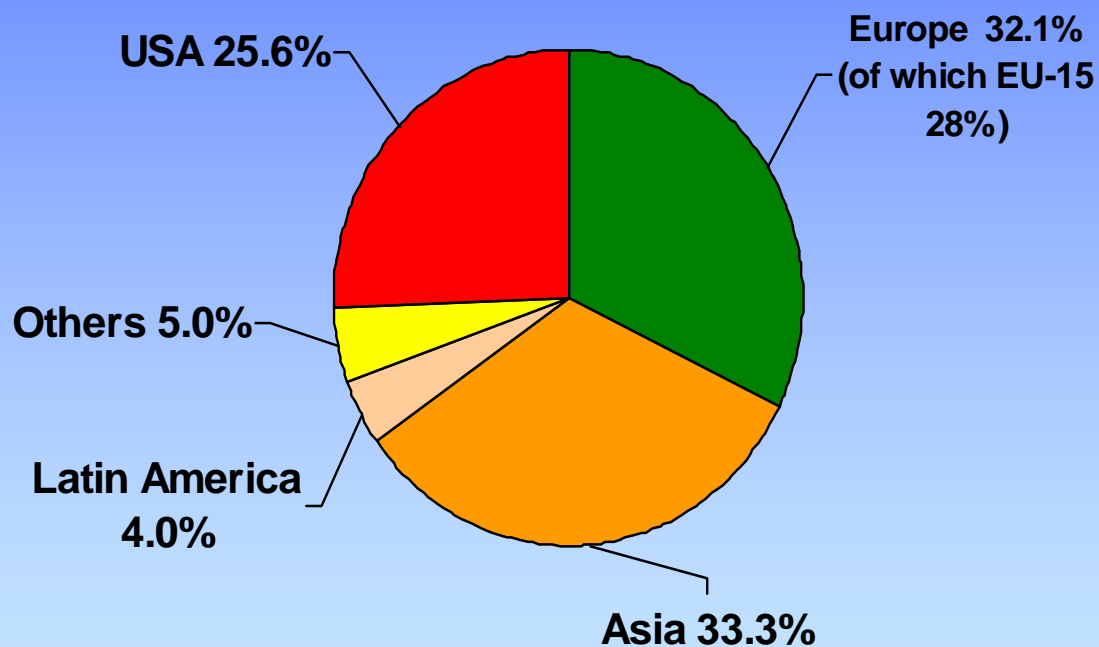


**A strategy for European collaborative research –
*towards a European Technology Platform for Sustainable Chemistry***

Frank Agterberg
Cefic Research & Science

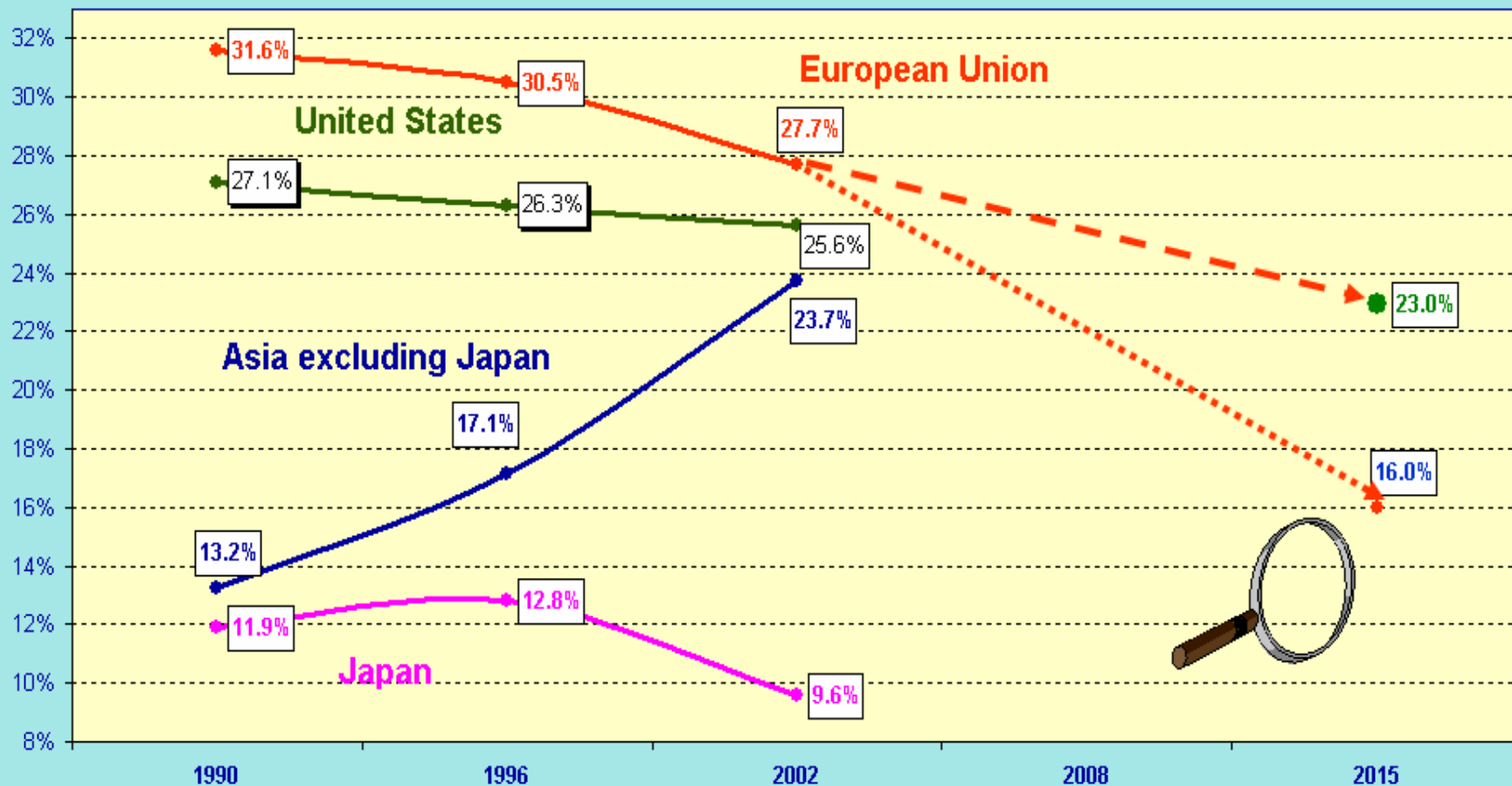
Euro Science Open Forum - Stockholm, 25 August 2004

Breakdown of world chemicals production 2002 = 1.3 Trillion €





European Chemical Industry Market Share



Source Cefic 2004
* excluding pharmaceuticals

WHY is chemical industry important for Europe ?



- employment (jobs !) and markets (customers !)
- balance of payments (export !)
- autonomy (technological independence !)

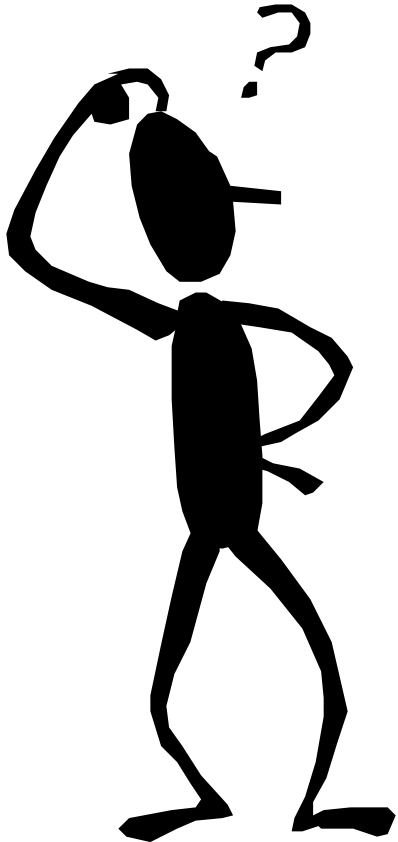


ECONOMICS

HOW can we keep chemistry in Europe,
remain competitive, and
contribute to sustainable development ?

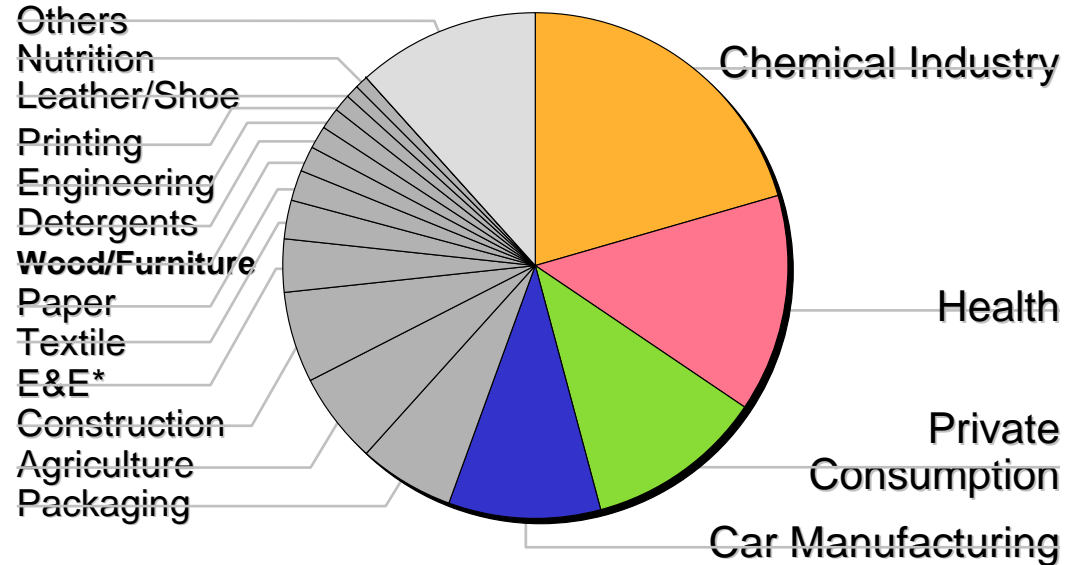


INNOVATION





Chemistry providing not only materials, but also drives innovation

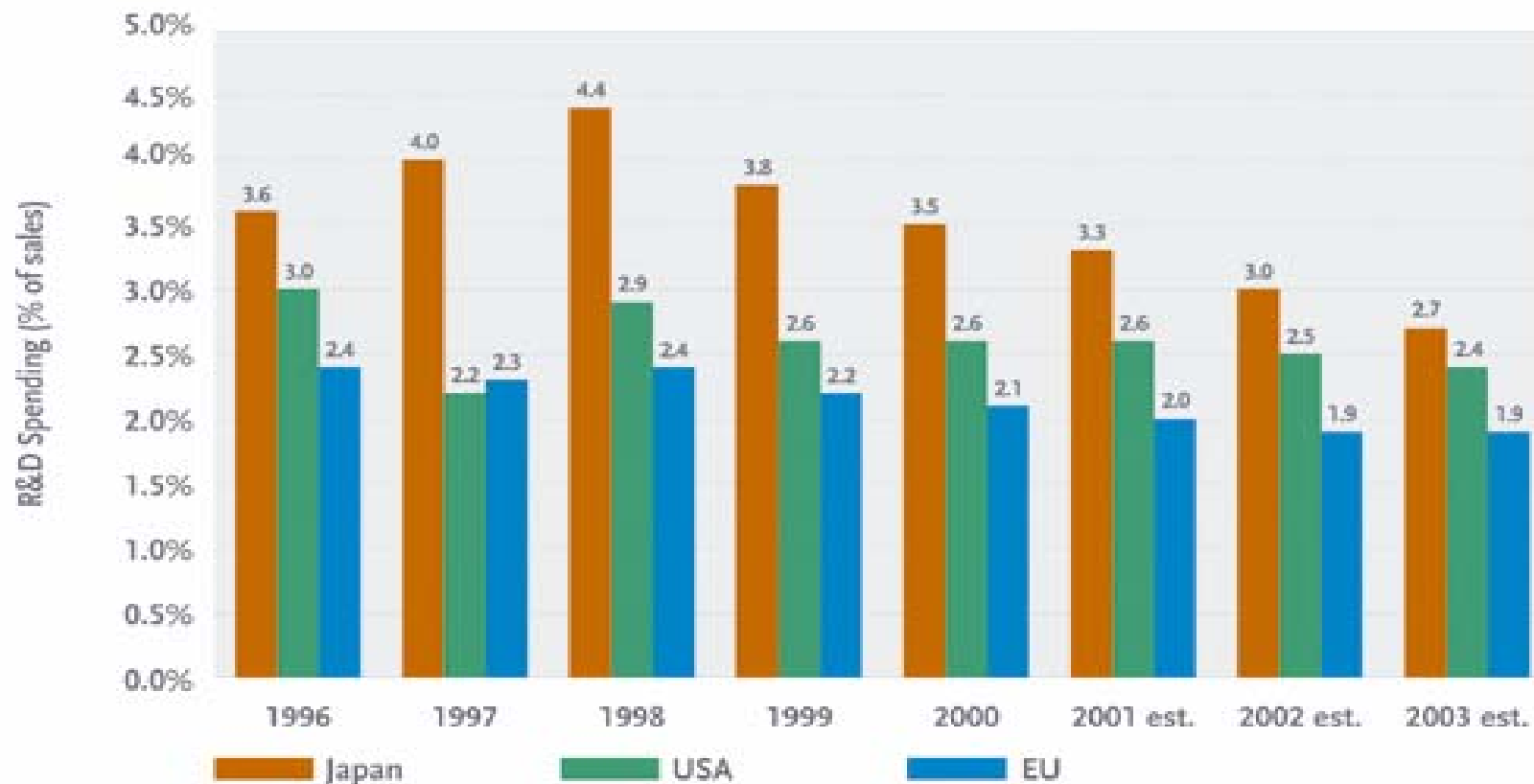


Innovation motor chemistry:

1. **New materials for new products**
 - Lighter, stronger
 - More functionality
2. **New (materials for) process innovations**
 - Materials and energy efficiency
 - Reduce number of Process steps
3. **Price reduction of chemicals**
4. **Innovation demanded from suppliers**
 - Process equipment
 - Raw materials

Based on sound science
and research

Chemical industry R&D benchmarking



Sources: Cefic & OECD

Note: * excluding pharmaceuticals

est.: (estimated)

Bridging the gap from lab to plant/market



Academia

The R&D challenges :

- High-speed discovery
- Fine-tuned chemistry
- Process and Equipment design



Industry

The business issues :

- Higher value added (e.g. Mass Customization, on demand)
- Time-to-market
- Societal issues: (perceived) risks and benefits



CEFIC's programme to promote collaborative research on sustainable technology. SUSTECH brings together the European chemical industry, universities and other research institutes to operate self-managed research programmes that are funded by programme members and other research funding agencies.

Manufacturing technologies, e.g.:

- Catalysis
- Separation technologies
- Process intensification

... enabling technologies, e.g.:

- Process modelling
- hydrogen energy

And also remediation technologies, e.g.:

- contaminated soil management

→ Skills

→ Leverage

→ (EU) policies, e.g. ETAP



Chemistry in early FP6

- **Huge investment in ‘chemistry-related’ proposals to FP6**
 - Estimated 800 proposals, ~ EUR 40-80 million
- **Success rate dramatically low**
 - All Cefic supported proposals failed initially
 - *E.g.* NMP priority 1st call only 8% success rate

(Potential) disconnect: EU strategy (2010)

- **Aim for a ‘dynamic Knowledge based society** (Lisbon 2000)
- **Sustainable development** (Göteborg 2001)
- **Increase R&D expenditure to 3% of GDP** (Barcelona 2002)



Mutually agreed need to enhance chemistry R&D, innovation in Europe!



National chemistry R&D strategies

US: Chemical technology vision 2020

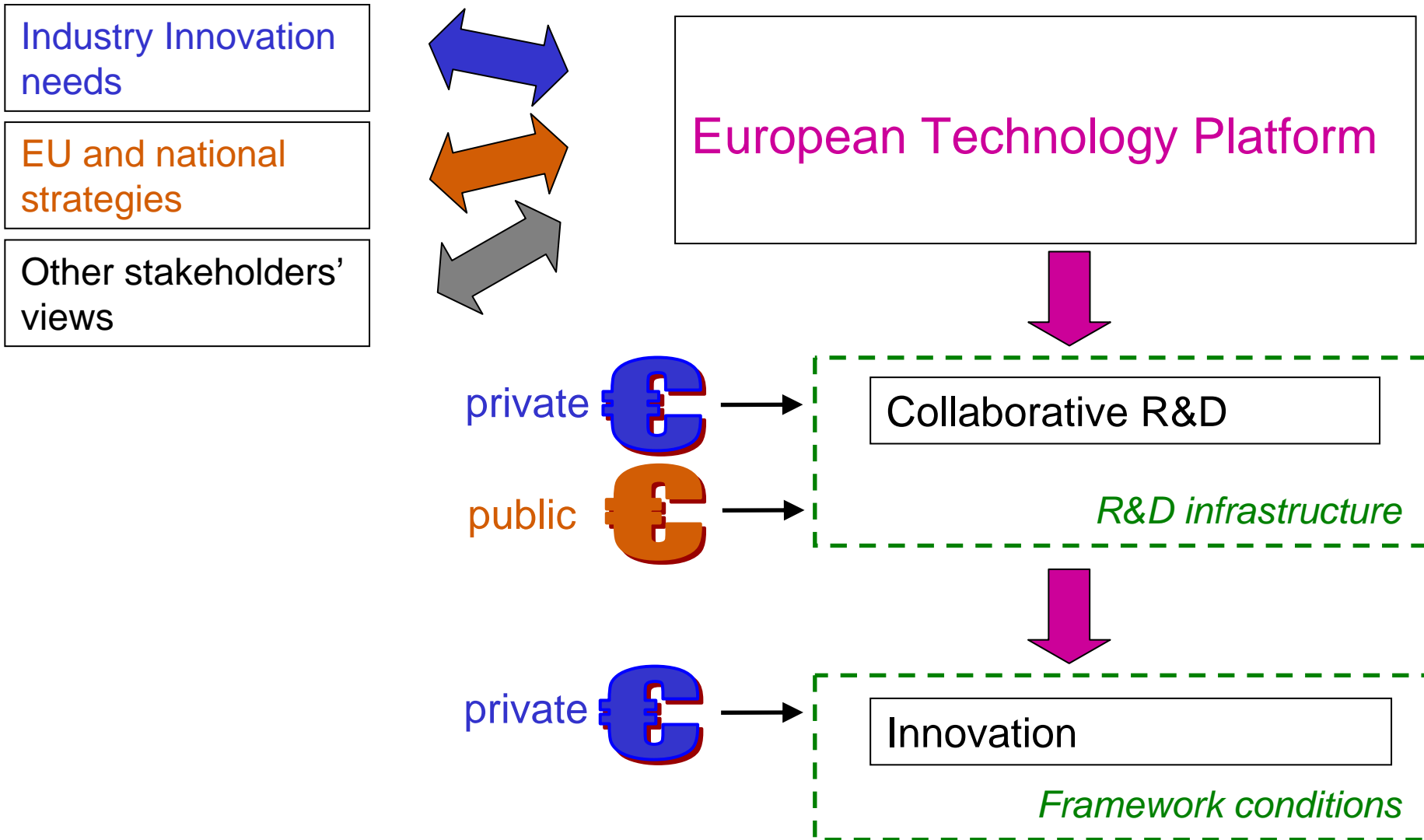
JP: Chemical technology strategy and 44+ technology roadmaps

EU: ???

AllChemE[®] contributions, e.g.:

- *Chemistry, Europe & the future*
- *Chemistry working for Europe*
- *Chemistry in the European Research Area (2002)*

Basic concept of European Technology Platforms





The Technology Platform “Sustainable Chemistry”

Platform Deliverables

1. Stakeholder engagement
2. Multi-stakeholder vision
3. A common chemistry R&D strategy in priority technology areas
4. Action Plan for strategy implementation incl. mobilization of public & private resources

Scope:

- Priority Technology Areas
 - Industrial (or white) biotechnology
 - Materials technology
 - Reaction and Process Design
- Horizontal issues for R&D, innovation
 - Research infrastructure, including:
 - skills/education
 - R&D collaboration
 - Barriers to innovation, including:
 - SHE, Regulation (REACH)
 - Access to venture capital



Forward agenda ETP Sustainable Chemistry

- Platform launched on 6 July 2004

Next milestones ...

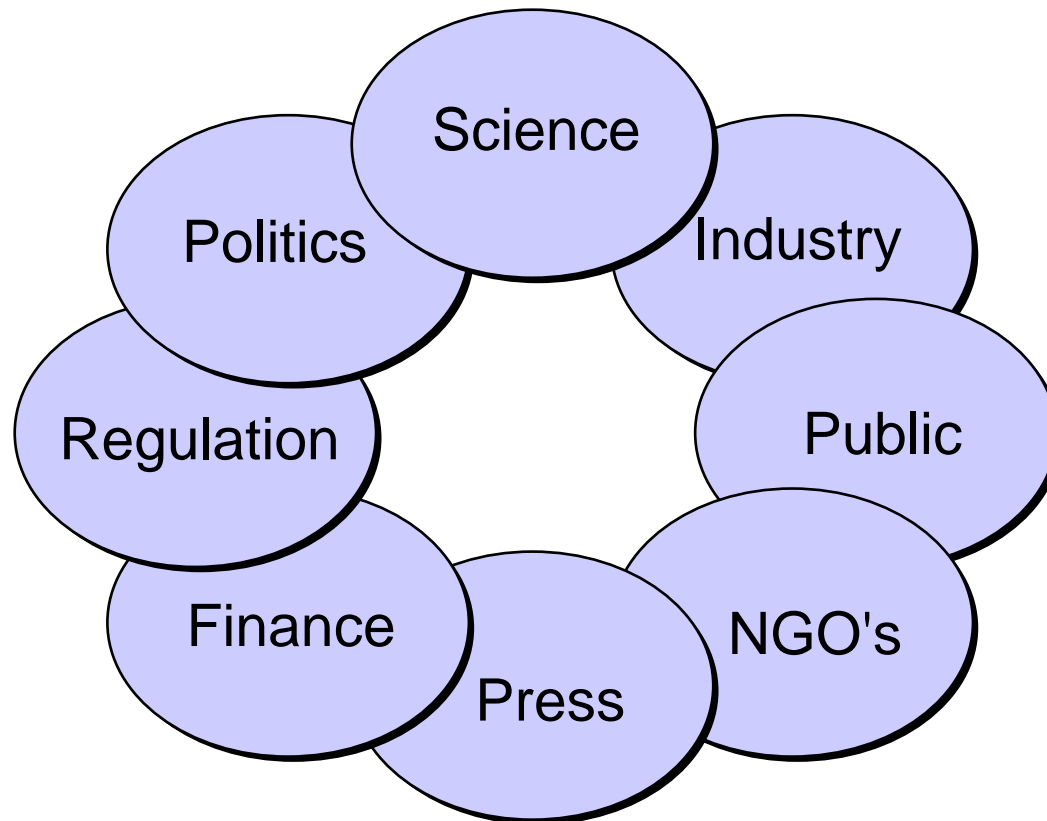
- Platform organisation (Q2-3 '04)
- Visioning and priority research themes (Q3 '04-Q2 '05)
- Technology roadmapping → detailed 'Strategic Research Agenda'
- SRA implementation plans (Q3 '06)

... aligned with FP7 developments

- EC presentation to EP/Council Spring '05
- Defining work programme
- FP7 Launch ultimo '06



Integrated Approach for Innovation



Engagement of all is key to the success!



Thank you!