



ICT research and innovation, EU position and future developments



Outline



• The context:

- What is ICT?
- Why is it important?
- How is Europe doing?

- “i2010”: The EU ICT Strategy framework
- ICT research and innovation: an i2010 pillar
 - Public investment in ICT R&I
 - Attracting private investment in ICT research
 - Improving quality and impact of the R&I effort
 - Making the best use of R&I
- Conclusions



ICT what is it?

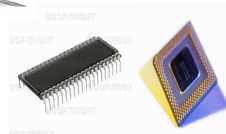
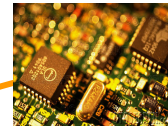
ICT services:
Telecom,
eHealth,
business,
education,
inclusion,
transport etc

Embedded ICT
in all sorts of
products and
applications

ICT equipments

Electronic Components

ICT devices



ICT: Why is it important?

- ICT is an essential enabler of economic growth
 - ICT represents ~5% of EU GDP, but is responsible for half of productivity gains in our economies
 - ICT industry employs 6.5 Million people in the EU,
 - ~12 Million people work in ICT in the EU
- ICT helps us address key societal challenges
 - Health, environment, energy efficiency, ageing, inclusion,...
- ICT underpins innovation in all sectors
 - ICT underpins progress in major science fields
 - Higher value products and services, more efficient business and manufacturing processes



Key features of the ICT field

- World wide market growth around 7% per year
 - 4% in the EU, drivers include new mobile and broadband services
- Innovation and research intensive field
 - Technology doubles its performance every 18 months
 - Wide opportunities for innovations in products and services
- Outsourcing/offshoring of production for established techno.
 - The race to high value innovative products is fierce.
- ICT markets deregulated since 1999 in the EU
 - Opened competition and lowered prices drastically for consumers

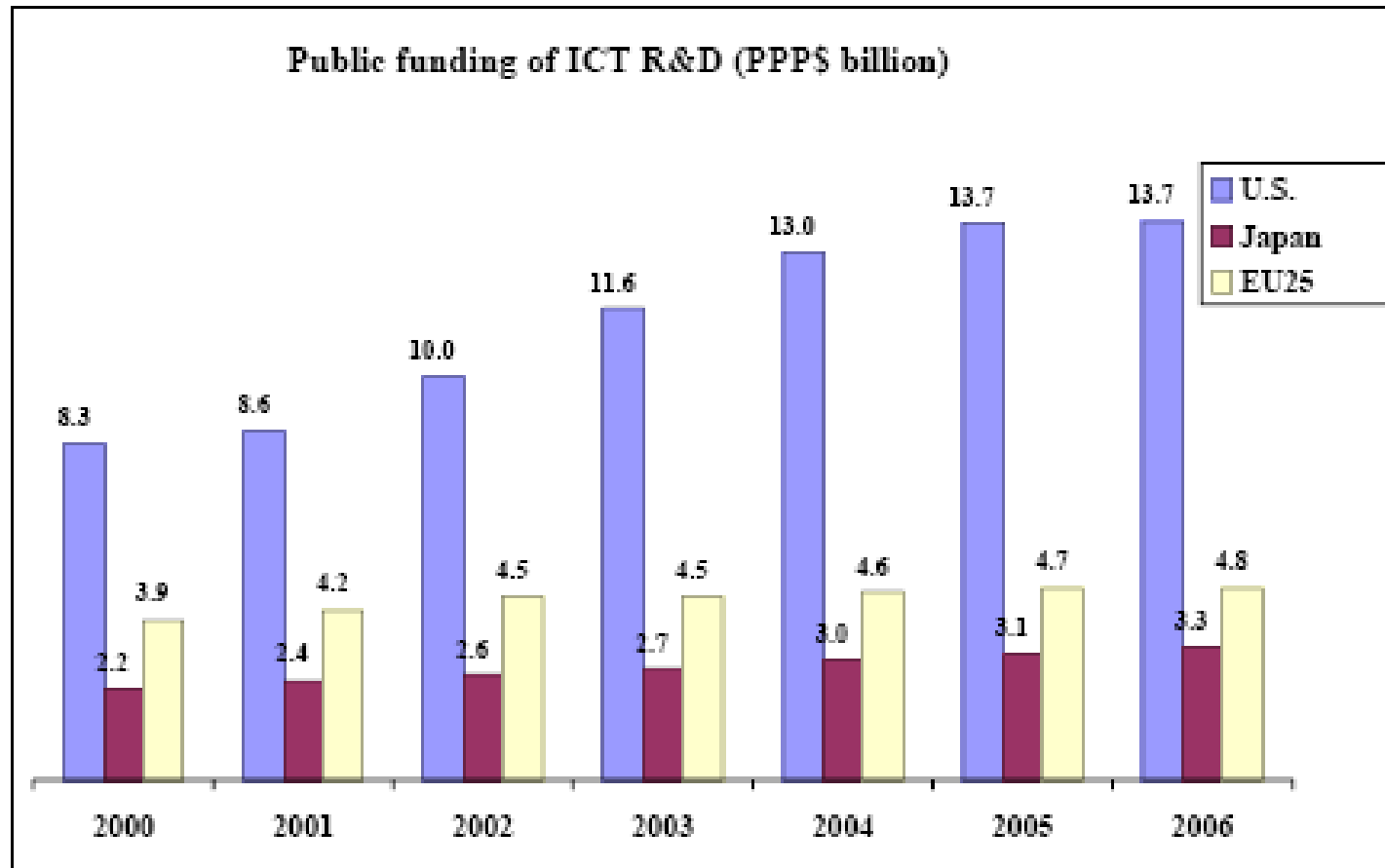


ICT: How is Europe doing?

- The EU is the world's largest ICT market
 - 32% of world market
- Several Member States are the world top performers:
 - In the best use of ICT in the economy and society
 - In investments in ICT research and innovation
- Europe leads in important fields
 - Telecom equipment and services, embedded systems,...
- But, on the whole, we can, and have to do much better:
 - The EU represents only ~ 20% of world ICT supply
 - The market share is stable, investments can be higher

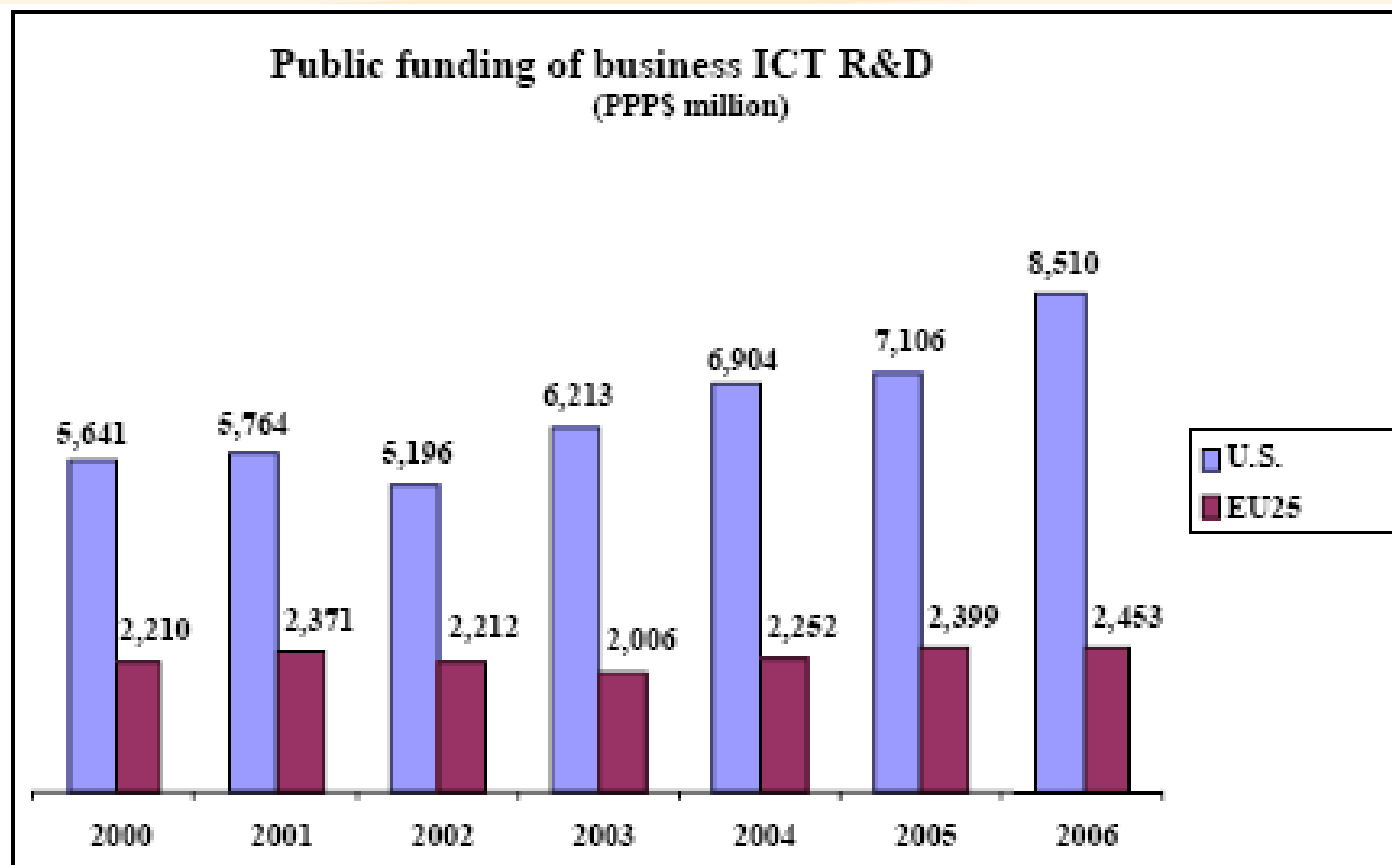


Public spending on ICT RTD: Total



CSTI study 2007, French ministry of industry

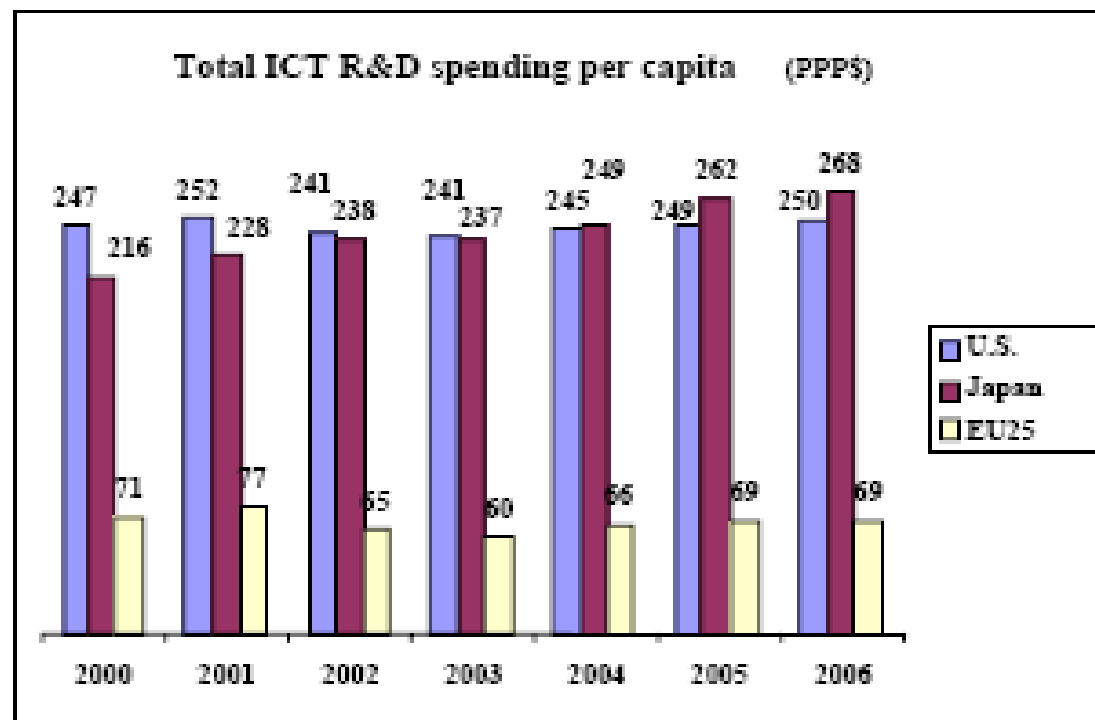
Public funding of business RTD



CSTI study 2007, French ministry of industry



Spending on ICT RTD per Capita

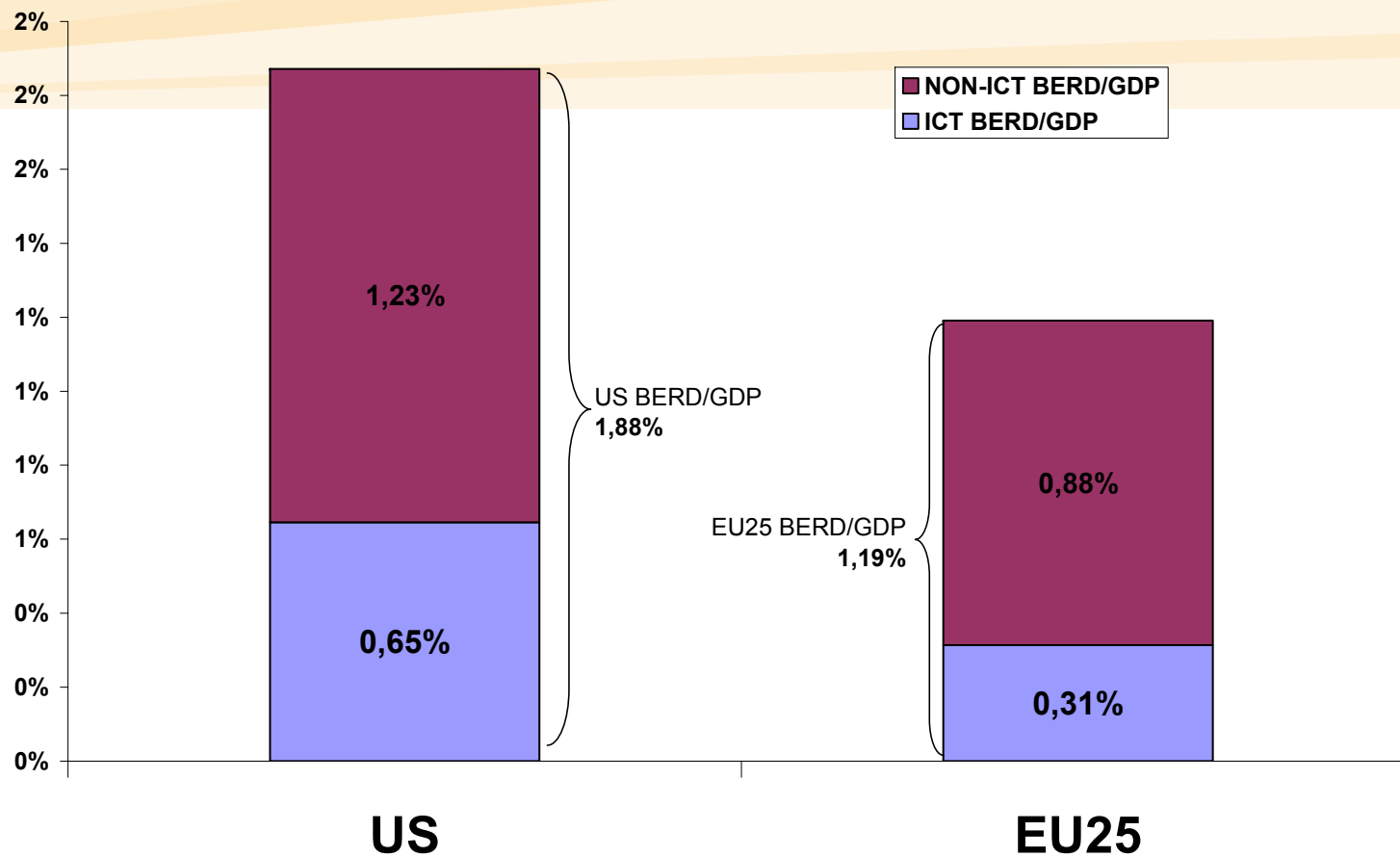


CSTI study 2007, French ministry of industry

Source: REDICT estimations based on data from Eurostat, OECD and national statistical offices. IPTS 2007

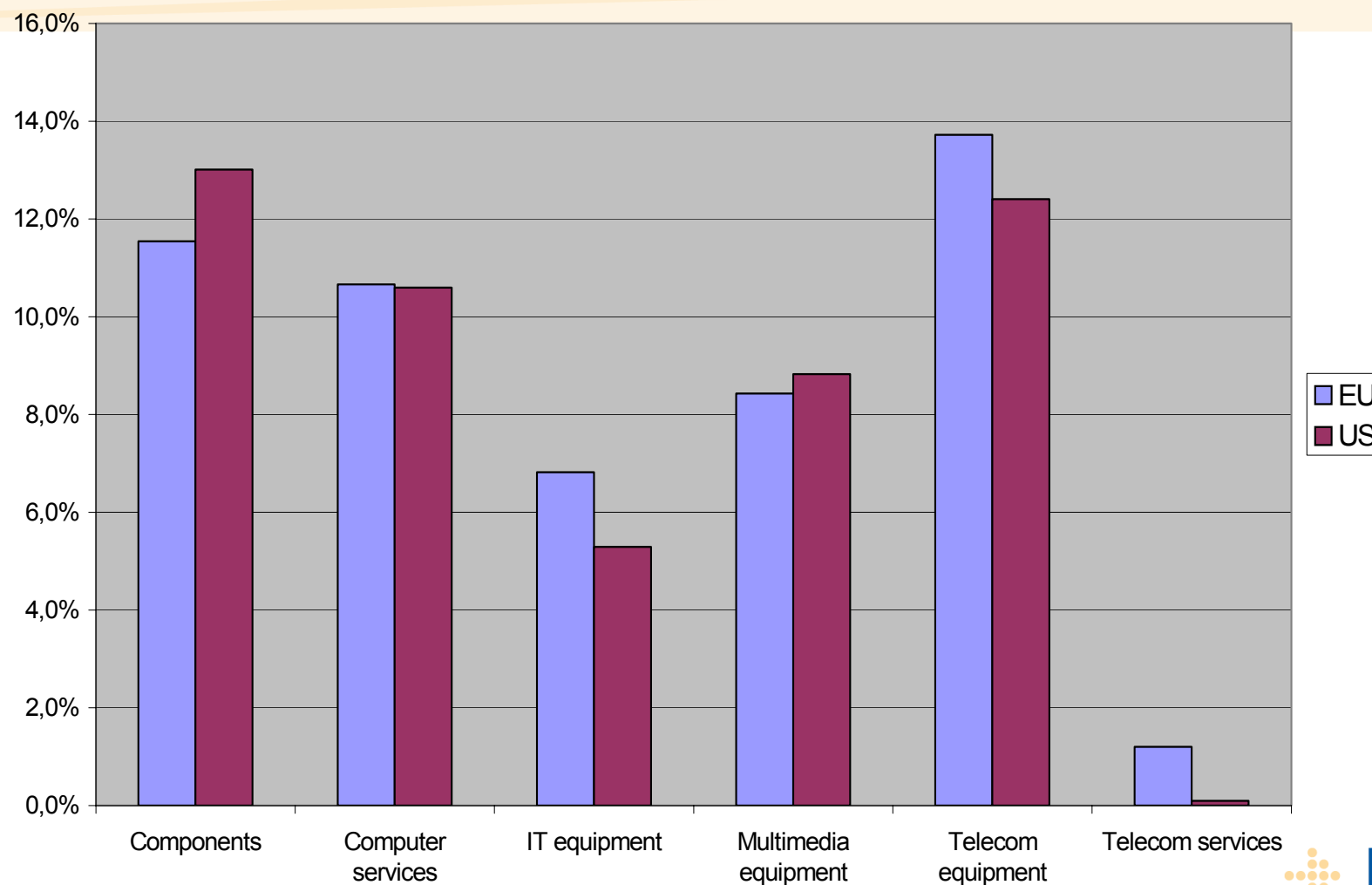


Contribution of ICT and non-ICT sectors of total BERD intensity % of GDP, 2004

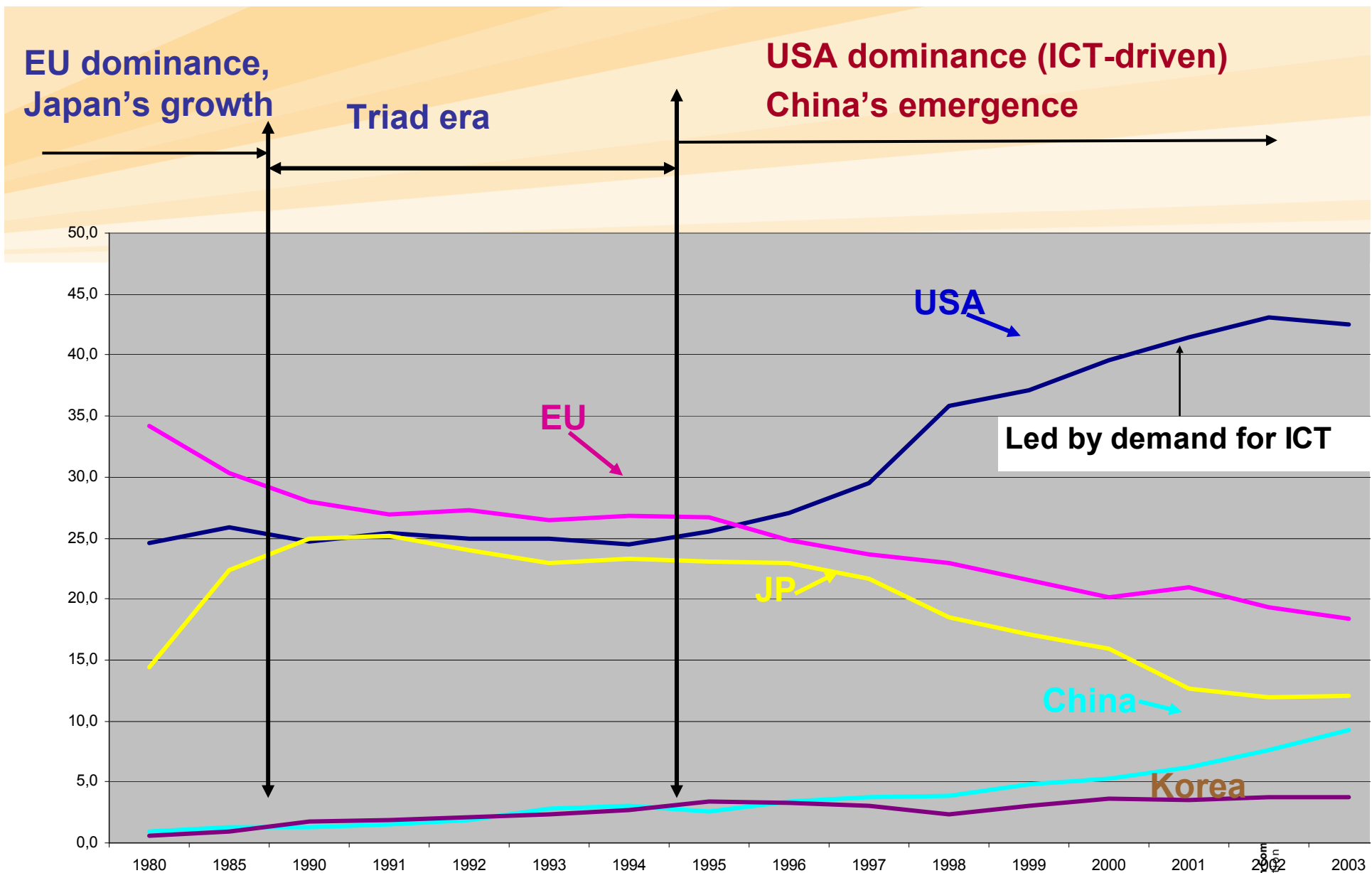


Source: IPTS-REDICT based on data from Eurostat, OECD, EU KLEMS
Internal source:

Company R&D investments as percentage of net sales for ICT sub-sectors – comparison EU and US



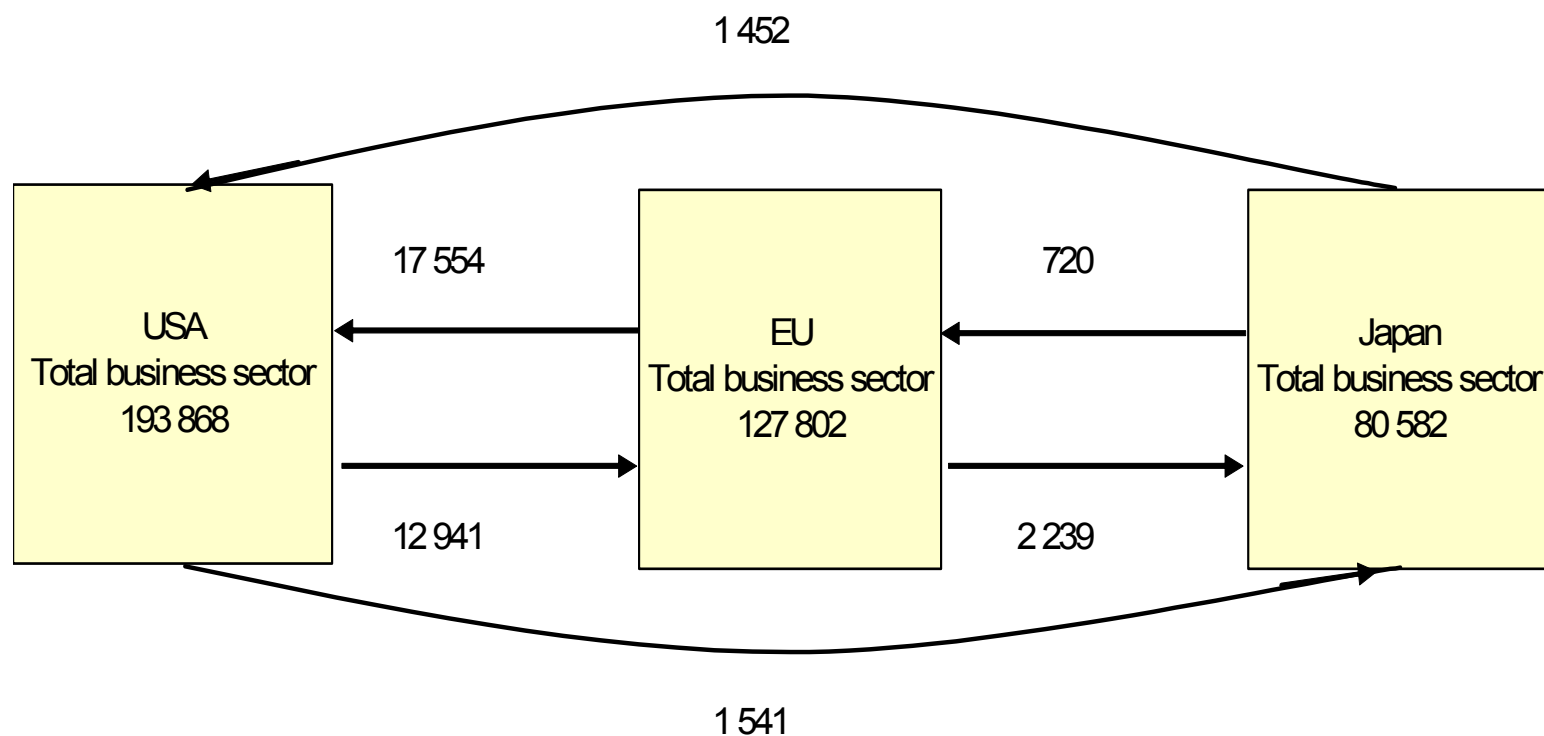
Source: IPTS elaboration on data from the 2006 EU Industrial R&D Investment Scoreboard, IPTS, JRC



Source: NSF

Share in global hi-tech value-added

Total R&D and foreign investments Trans-Atlantic exchanges still prevail



OECD



What is the problem in Europe?

- Market fragmentation
 - Makes it difficult for new small companies to grow outside their local markets
- Lack of investment in ICT R&D
 - Public investment in ICT R&D in the EU is around 5,5 Billion € per year. In the US it is about 14 Billion €
 - Main difference comes from Defence budgets.
- Difficulty for SMEs to access finance
 - Weak exit markets, low return on investments



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Europe has major assets to build on

- Europe represents the largest market and still the second world supplier of ICT
- Europe leads in key ICT fields
 - Telecommunications
 - Embedded computing
 - Microelectronics and microsystems
 - Business software
 - ICT based Medical equipment and systems
- Europe has a world class academic research community in all key ICT fields



i2010 initiative

- Flagship policy initiative for the renewed Lisbon agenda
- Objective: Enable Europe to exploit the full potential of ICTs and media for growth and employment
- Comprehensive and holistic approach
 - Umbrella initiative for EU information society policies (regulation, research, uptake of ICT)



i2010: Three priorities

- Completing the Single European Information Space
 - Regulation, coordination
- Strengthening investment in research and innovation
 - Financial support, policy coordination,..
- Achieving an Inclusive European Information society
 - Flagship initiatives, coordination for ICT uptake



The i2010 second pillar: R&I

- Four interlinked tracks of actions
 - Strengthening public support to ICT RTD
 - EU and Member States
 - Attracting private investment in ICT RTD
 - Large companies and SMEs
 - Improving coordination, quality and impact of ICT RTD
 - Towards common RTD agendas, avoiding fragmentation
 - Making the best out of the RTD effort
 - Uptake of the latest ICT across the economy and society

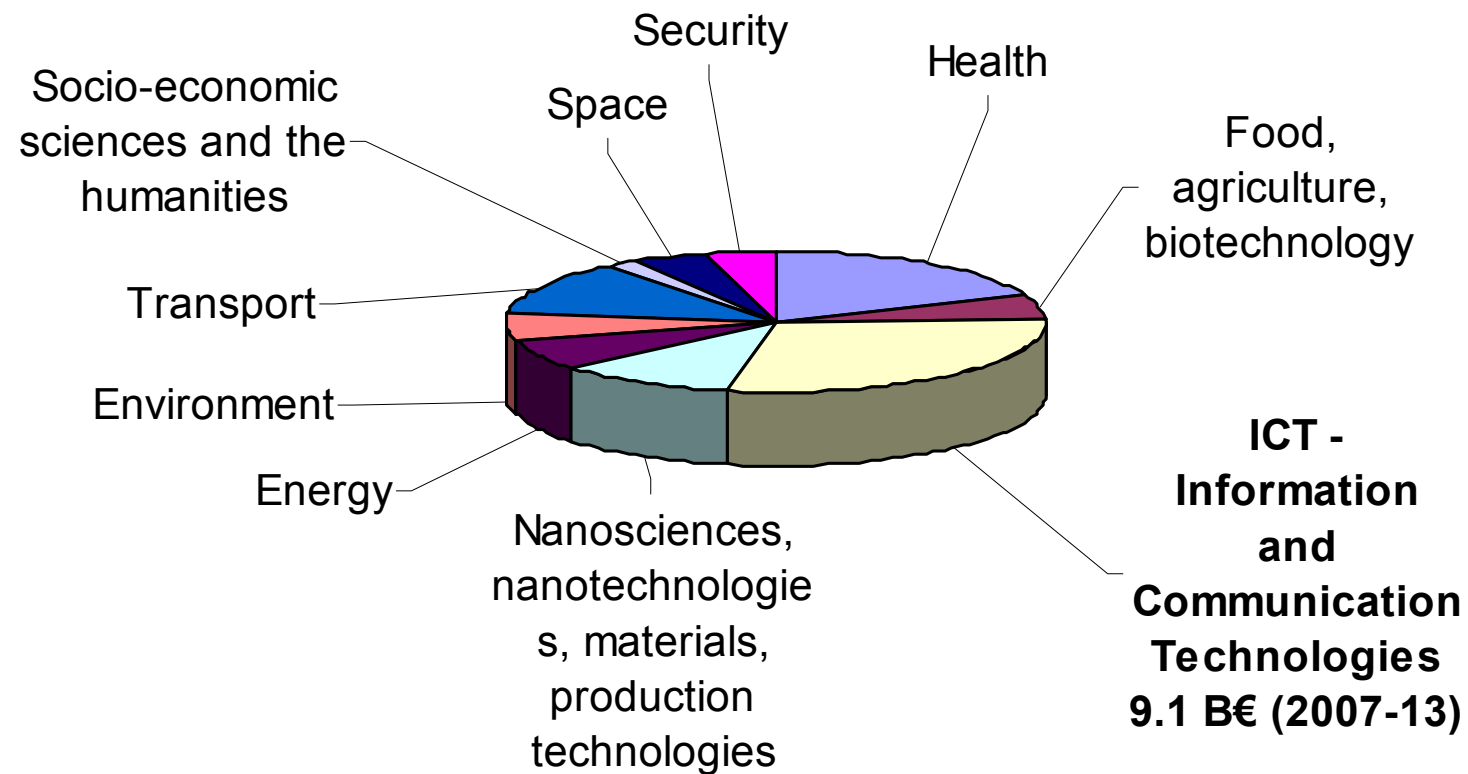


Strengthening public support to ICT RTD

- ICT in FP7, an increase of 30% wrt FP6
 - 30% in 2010, 70 % in 2013
 - Maintain ICT at 30% of the research effort
- MSs to move in the same direction
 - Reorientation of public spending
 - Reorientation of research priorities
- Look for various means
 - E.g. Structural funds, public procurement, etc.



FP7: Cooperation Programme



ICT in FP7 – Objectives

- Strengthen the competitiveness of all EU industry
 - Master ICT for innovation and growth
- Reinforce the competitive position of EU ICT sector
 - Build industrial and technology leadership
- Supporting EU policies
 - Mobilise ICT to meet public and societal demands
- Strengthening the European S&T base
 - A pre-condition for success



ICT research: Where to?

"IST" in 2007

- Less than micro scale.....
- Silicon-based.....
- PC and telephone based.....
- Internet and IP-based networks
- Text-based information search.....
- "Writing and reading".....
- Limited bandwidth, separate networks....
- Mobile telephony (voice).....
- eServices emerging.....

"ICT" tomorrow (2015 20)

- ✓ Nano-scale
- ✓ + new materials
- ✓ "Our surrounding" is the interface
- ✓ Future Internet, more secure,...
- ✓ 3D, context-based knowledge handling
- ✓ Use all senses, intuitive
- ✓ Infinite bandwidth, convergence,...
- ✓ Mobile/Wireless full multimedia
- ✓ Wide adoption (eHealth, eLearning, ...)

Attracting private investment

- Excellent Public RTD attracts private investment
 - Poles of excellence,...
- Public-private partnerships, ETPs JTIs, ...
 - Two JTIs in embedded systems and nanoelectronics
- Europe as a lead market for innovations
 - Regulation, standards
 - Governments as first buyer, role of public procurement
- Role of SMEs: (Europe's major weakness)
 - Access to public sector markets
 - More intensive presence of venture industries,



Lead markets in areas of public interest

- Public sector represents around 45% of GDP
 - ICT can improve efficiency & quality of public services
 - Public policy play an instrumental role.
- Pre-commercial public procurement: High potential
 - US spends around 50 billion \$ a year on pre-commercial public procurement,
 - EU spends less than 2 Billion €,
 - Fragmented markets, Difficult access to SMEs
- Aho report:
 - The development of EU wide initiatives in areas like ICT for Health, digital content,...



Improving quality: Better coordination

- A new Framework for coordination of national policies and activities
 - European Technology platforms, setting research agendas for all the EU
 - Use of Art 169 and Art 171 of the treaty
- Forum of the national ICT research directors
 - Systematic process for sharing experience, visions and actions
 - Next milestone: Berlin , April 2007
- ERA NETs in FP6 and FP7



Making the best use of ICT innovations

- ICT in the CIP
 - To strengthen competitiveness and growth through the wider adoption and better use of ICT
 - Build on the work done in eTen, eContent*plus*, MODINIS
 - Total budget 729 M€:
- Trigger and stimulate uptake of ICT



Making the best use of ICT innovations

ICT in the CIP

- Objectives:
 - To strengthen competitiveness and growth through the wider adoption and better use of ICT
- Budget ~730 M€, 2007-2013
- Focus on areas of public interest
 - eHealth, eGovernment
- Support to go mainly to large scale pilot actions
 - Testing ICT solutions in real settings



Conclusions

- ICT
 - key to the Lisbon agenda
 - central to mastering innovation
 - necessary to modernising public services
- We need to
 - To combine policies
 - intensify effort and set priorities
 - involve all stakeholders

