EU ICT Research & Innovation

Policy Context

ICT R&I in the Digital Agenda for Europe

ICT in FP7 and in the CIP

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Content

- The new policy context for ICT R&I
  - Europe 2020, Digital Agenda for Europe, Innovation Union
- ICT R&I in the Digital Agenda for Europe
  - What is the problem
  - What to do about it?
  - How to do it?

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Europe 2020

- Three priorities at the heart of Europe 2020
  - Smart growth
    - An economy based on knowledge and innovation.
  - Sustainable growth
    - More resource efficient, greener & competitive economy.
  - Inclusive growth
    - high-employment economy delivering economic, social and territorial cohesion.

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Smart Growth: Three flagships

- Digital Agenda
  - Sustainable economic and social benefits from a Digital Single Market
- Innovation Union
  - re-focus R&D & innovation on the challenges facing our society
- Youth on the move
  - performance & attractiveness of higher education inst.
  - raise the overall quality of all levels of education

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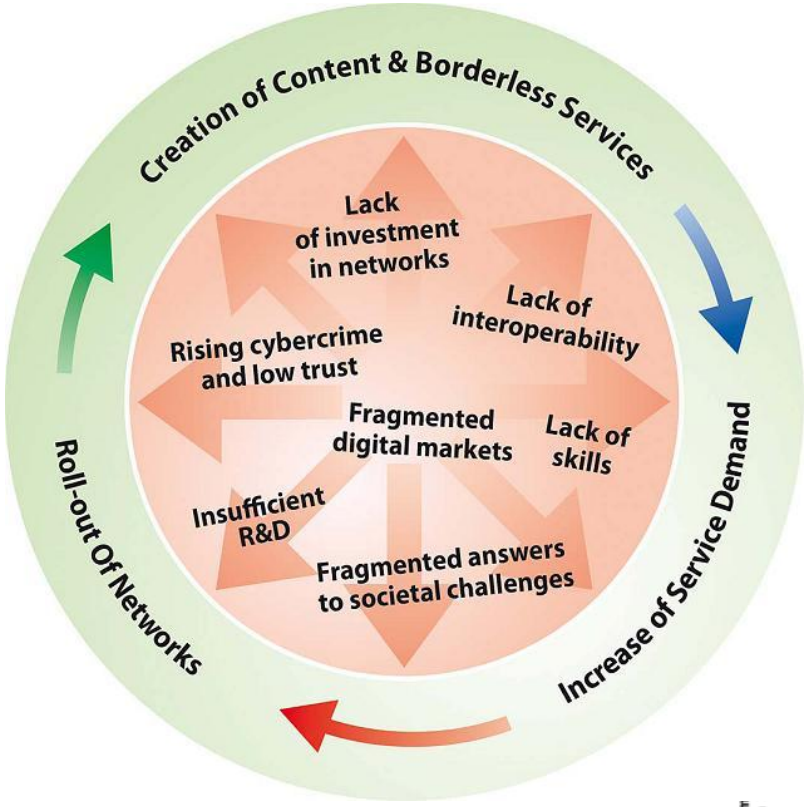
The Digital Agenda for Europe

(Communication issued in May 2010)

Overview

- A strategy for making the best use of (ICT) to speed up economic recovery and lay the foundations of a sustainable digital future.
- Strategy should remove current obstacles to create a virtuous cycle in which ICT stimulates the EU economy.



The Digital Agenda for Europe

Priority areas for action

The Agenda outlines seven priority areas for action:

1. Creating a Digital Single Market
2. Improving the framework conditions for interoperability between ICT products and services
3. Boosting internet trust and security
4. Guaranteeing the provision of much faster internet access
5. Investing more in R&D and ensuring market uptake
6. Enhancing digital literacy, skills and inclusion
7. Applying ICT to address social challenges such as climate change, rising healthcare costs and the ageing population.

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ICT an engine for smart growth

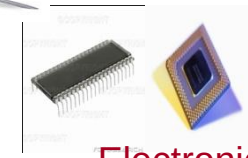


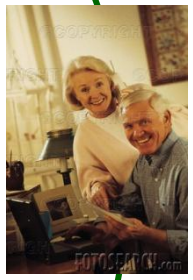
ICT services:
energy efficiency
eHealth,
business,
education,
inclusion,
transport etc




ICT equipments

Embedded ICT
in all sorts of
products and
applications



Electronic Components

ICTdevices

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ICT in figures: World-wide

- A market of around 2000 Billion Euro, average growth 7%
  - Driven by "more for less", performance doubling every 18 months
- High research intensity:
  - ~10% of turn over, ~30 % of total R&D effort WW
- An essential enabler of economic growth
  - Responsible for 40% of productivity gains in our economies
- Helps address key societal challenges
  - Health, environment, energy efficiency, ageing, inclusion,..
- Underpins progress in all major science fields

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ICT in Figures: Europe

- A market of more than 660 Billion Euro
  - Largest market WW, ~34% of world market
  - Average growth 4% per year
  - represents ~5-6% of EU GDP
- EU produces 23% of the world ICT value added
- ICT, one of the largest exports sectors of the EU (10%);
- ICT a large part of our imports (14,5 %).
- ~12 Million people work in ICT in the EU
- ICT markets liberalised since 1999 in the EU
  - Opened competition and lowered prices drastically for consumers

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ICT: the innovation goes on

ICT today

- 45 nanometer scale……
- Silicon-based……
- PC and phone based access……
- Internet, IP-based networks
- Limited bandwidth, diff. networks….
- Mobile telephony (voice)……..
- Text-based information search……
- "Writing and reading"……..
- *e*Services emerging……
- Social networking……..
- Programmable machines/robots…

"ICT" tomorrow (2020…)

- ✓Down to the 10 nano-scale & beyond
- ✓ + new materials
- ✓"Our surrounding" is the interface
- ✓Future Internet, trillions of devices ,..
- ✓Infinite bandwidth, convergence, ..
- ✓ Mobile/Wireless "everything"
- ✓ Context-based, semantics,
- ✓ Use all senses, intuitive, cognitive
- ✓Internet of services, web-based
- ✓ Web of creators
- ✓ auto-adaptable, learning artefacts

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…and global competition increases

- The race to high value innovative products is fierce.
  - Systematic outsourcing/offshoring of production of low-value mass products.
- Global competition also to attract investment in R&D and skills
- All emerging and developed economies position ICT at the core of their economic growth policies

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Europe is still well placed

- Industry strengths
  - Telecom,
  - ICT for vertical markets, (automotive, health, aerospace, energy,..)
  - Business and service software
- Strong technology know how
  - Multidisciplinary, World level skilled workforce
- Largest market
  - Several MSs, top of the lot in ICT use

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Two key problems: **Underinvestment**, fragmentation

- EU's ICT business sector spends 50% less on R&D than its US counterpart
  - ~34 against ~74 B€/year
  - Weak attractiveness to private equity
- Public sector investment is at least 60% lower
- Pre-commercial public procurements of ICT is underutilized in the EU
  - <1 B€ against >10 B€

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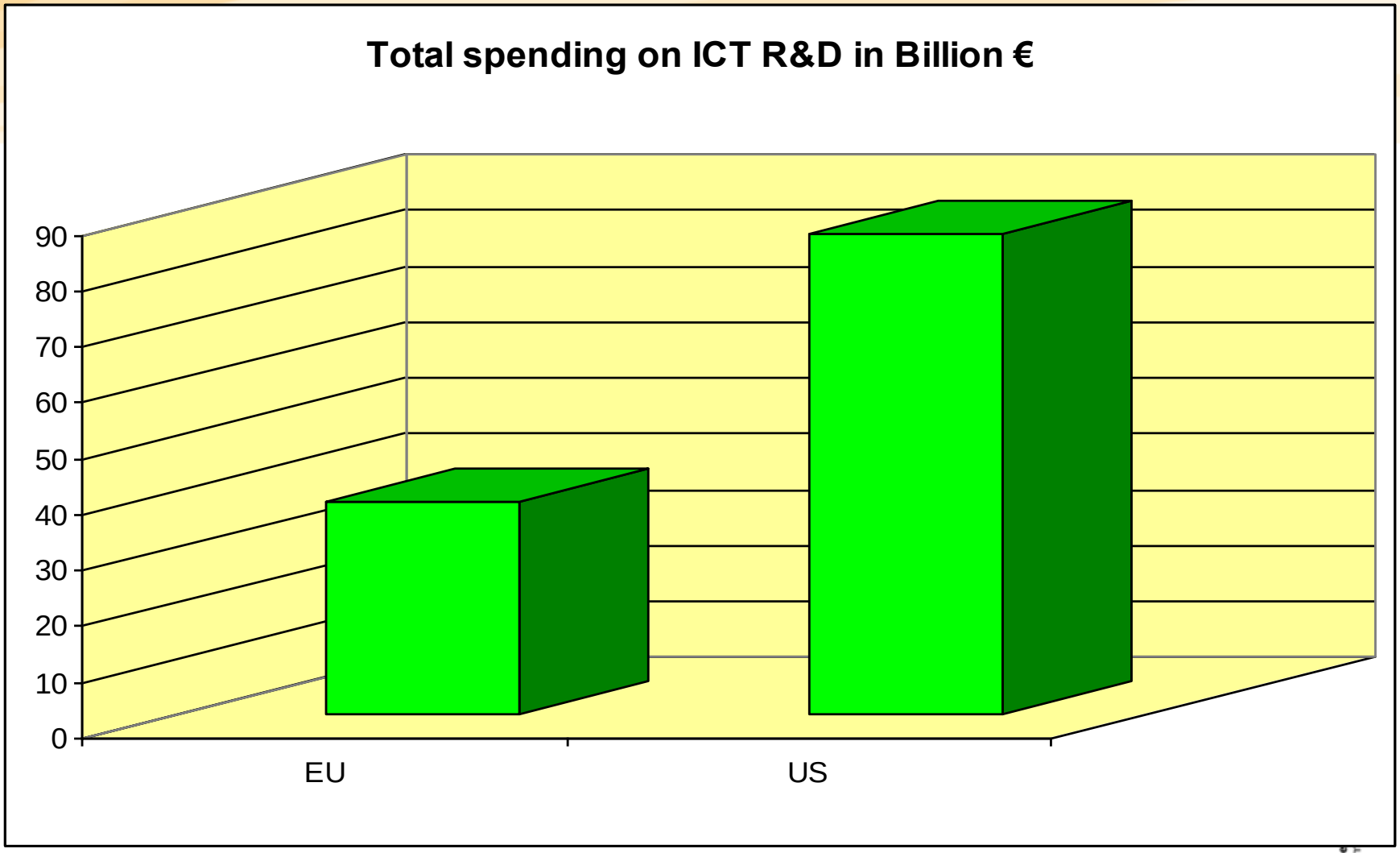
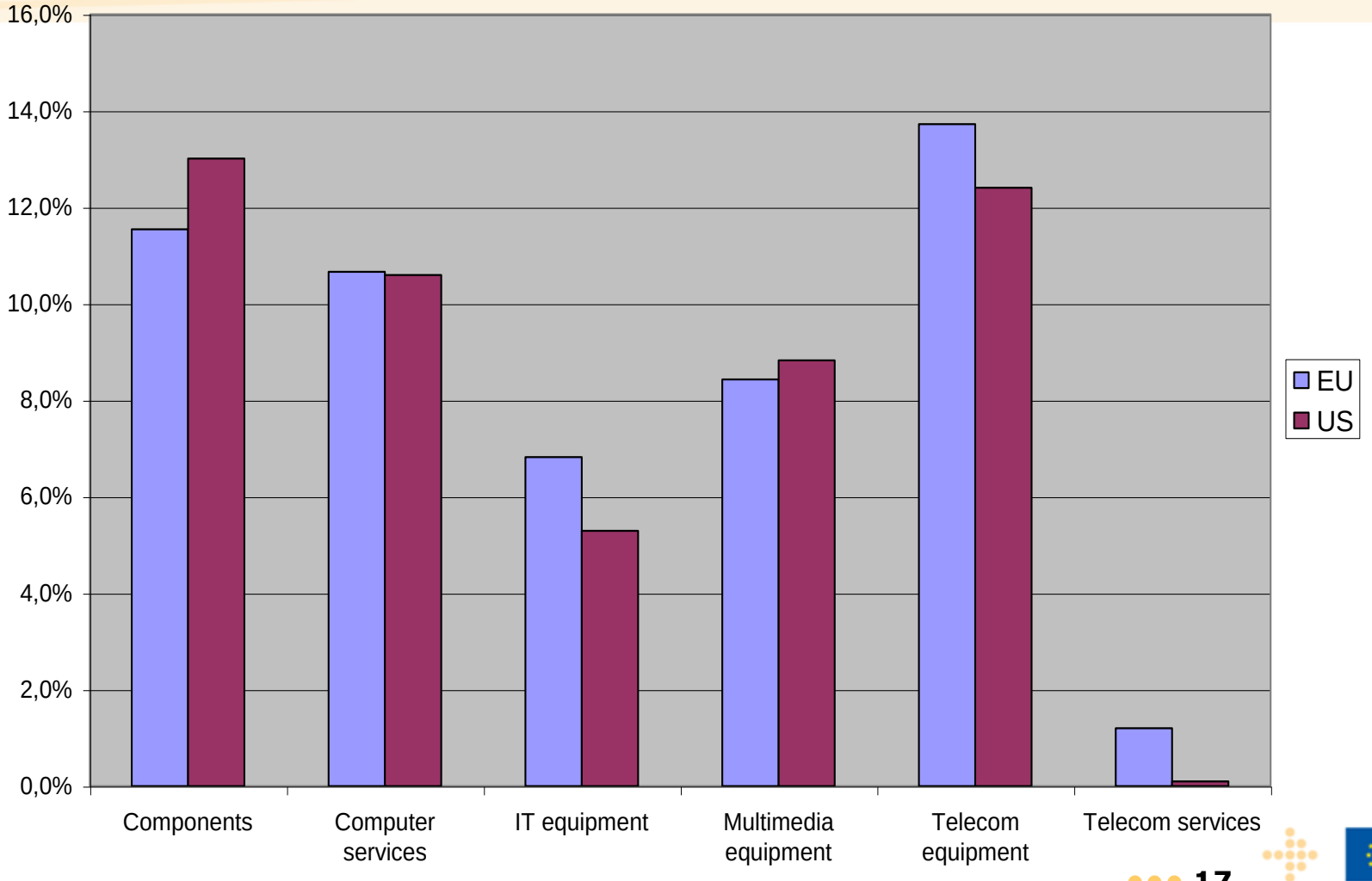


Source: REDICT estimations based on data from Eurostat, OECD and national statistical offices. IPTS 2007

EU –US GERD in ICT

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

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Two key problems: Underinvestment, **fragmentation**

- Fragmentation of markets (demand)
  - no single European market for innovative ICT
  - fragmented public demand

- Fragmentation of R&D&I investments (supply)
  - Lack of common approaches, targets, visions
    - ETPs, JTIs, AAL good move forward but..
  - Lack of coordination across the knowledge triangle
    - Few world reference competence centres despite the many good research teams

Results/Symptoms: High barriers to ICT business growth

- Barriers to business growth pose a bigger problem than barriers to start a business in the EU
  - No new major world player in the last 20 years in ICT
  - Europe is unable to capitalise on the size of its ICT market
    - the largest world wide
- Reasons:
  - sub-optimal conditions for their access to EU-wide markets for innovations
  - sub-optimal conditions for their access to finance
  - excessive regulatory burdens

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What to do about it: The approach

- Systemic approach: combining 'demand pull' / 'supply push'
  - Raise investments
  - Prioritise and coordinate resources
  - Open new markets responding to main societal challenges

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What to do about it?
The Research & Innovation Pillar in the DAE

- The Commission will leverage more private investment through
  - pre-commercial procurement and public-private partnerships
  - maintaining pace of 20% yearly increase of ICT R&D budget (at least for FP7)
  - structural funds for research and innovation

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The Research & Innovation Pillar in the DAE (2)

- The Commission will also
  - reinforce coordination & pooling of resources with MSs & industry
  - put greater focus on demand- and user-driven partnerships
  - propose measures for 'light and fast' access to research funds
  - support joint ICT research infrastructures and innovation clusters, eInfrastructures and cloud computing strategy
  - develop new generation of web-based applications and services by supporting standards and open platforms

The Research & Innovation Pillar in the DAE (3)

- The Member States should
  - double annual public spending on ICT R&D in ways that leverage an equivalent increase in private spending
  - engage in large scale pilots to test and develop innovative and interoperable solutions in areas of public interest

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Example of supply-demand measures: EIPs, European Innovation Partnerships

- European-scale partnerships
  - cutting across the innovation cycle
    - Research, innovation and policy measures
  - Addressing specific mid-term societal goals,
    - with intense users/producers, local/regional/national/European collaborations
  - Addressing Europe's societal challenges:
    - Innovative solutions for active & healthy ageing, for smart cities and transport, for a "trustworthy digital society"
  - Broad agreement on goals and strategic implementation plans
    - involvement and commitment of all necessary stakeholders
  - Use existing instruments:
    - grants to R&D, pre-commercial procurement and support to innovation and deployment, regulation , standardisation

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One policy framework,
Two major EU dedicated funding instruments

- Legislation, regulation

- Coordination, consensus-building

- Financial support (so far)
  - **FP7: master & shape ICT development**
  - **CIP: ensure wider uptake & better use of ICT**
  - + Regional and Structural Funds,…

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Thank you!

- European research on the web:
  - http://cordis.europa.eu
  - http://cordis.europa.eu/fp7
  - http://ec.europa.eu/comm/research/future/
- Information Society and Media:
  - http://ec.europa.eu/information_society/
  - http://cordis.europa.eu/fp7/ict/

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