

ICT in the FP: Future developments

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Outline

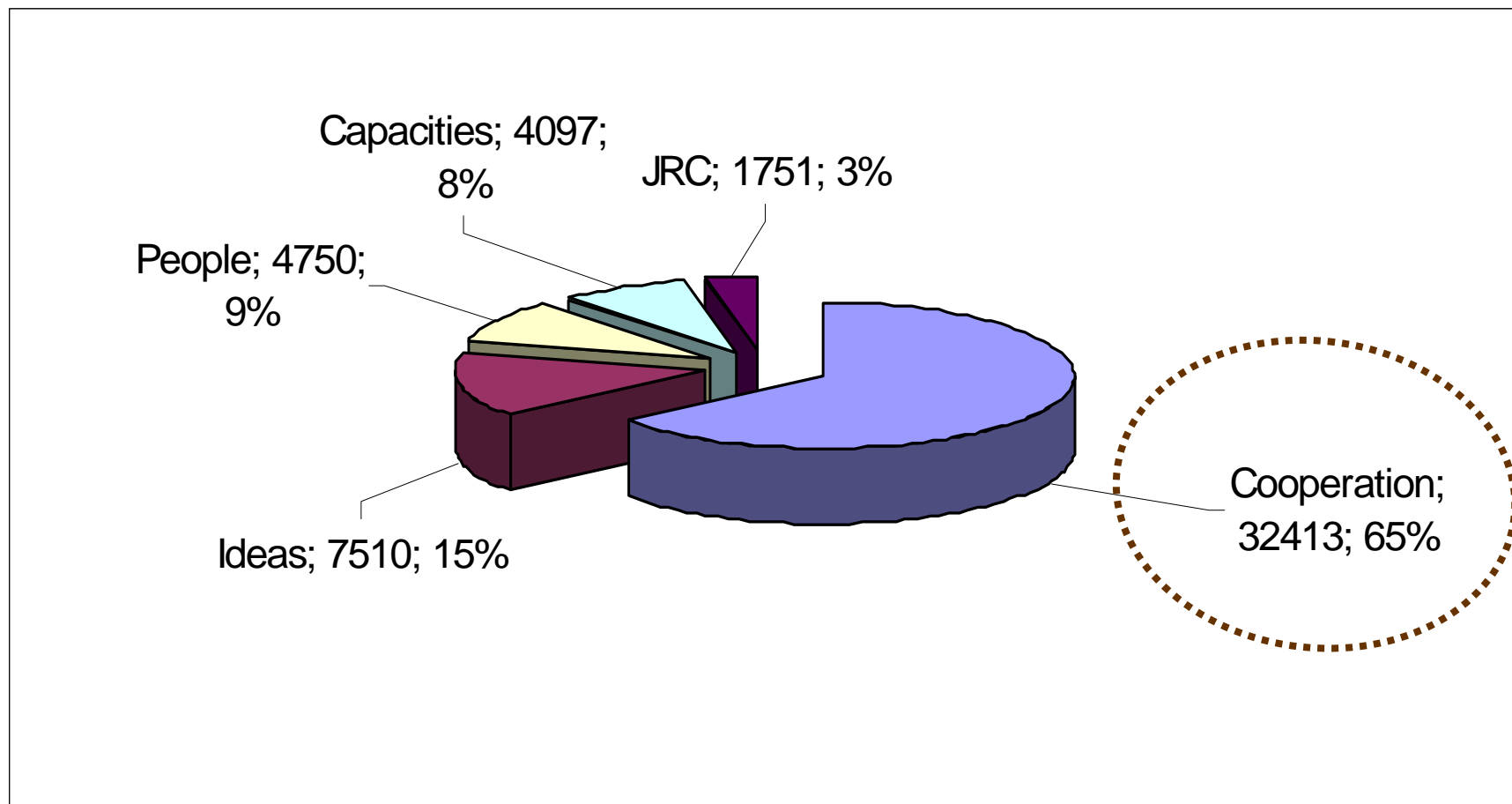
- ➔ • ICT in FP7: What is it?
 - Where do we stand?
 - What's next?
 - the 2011-13 agenda



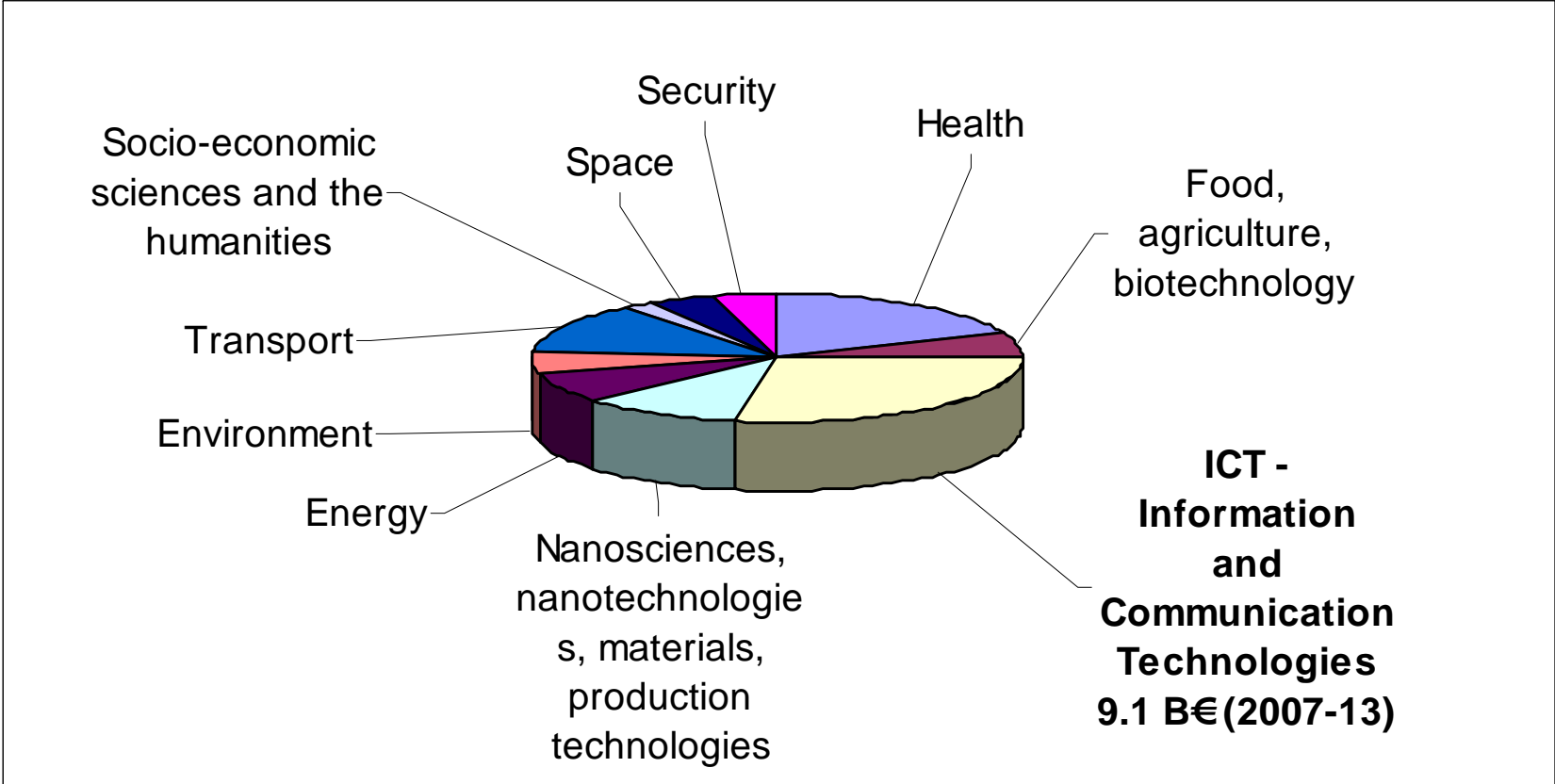
ICT in the FP: some key figures

- ICT in the FP supports collaborative R&D projects
 - Bringing together industry & academia from at least three Member or associated States
 - Project size varies between 3M€ and 20 M€ of funding
 - 4 to 20 partners per project
- 40% of participants are industry, 40 % academia, the rest is public organisations
- It supports ~17000 researchers and engineers/year
- In FP6 (2003-2006),
 - ICT supported ~ 5000 distinct organisations
 - through ~14000 participations
 - in 1125 projects (in FP6)
 - 20% of participations are from SMEs

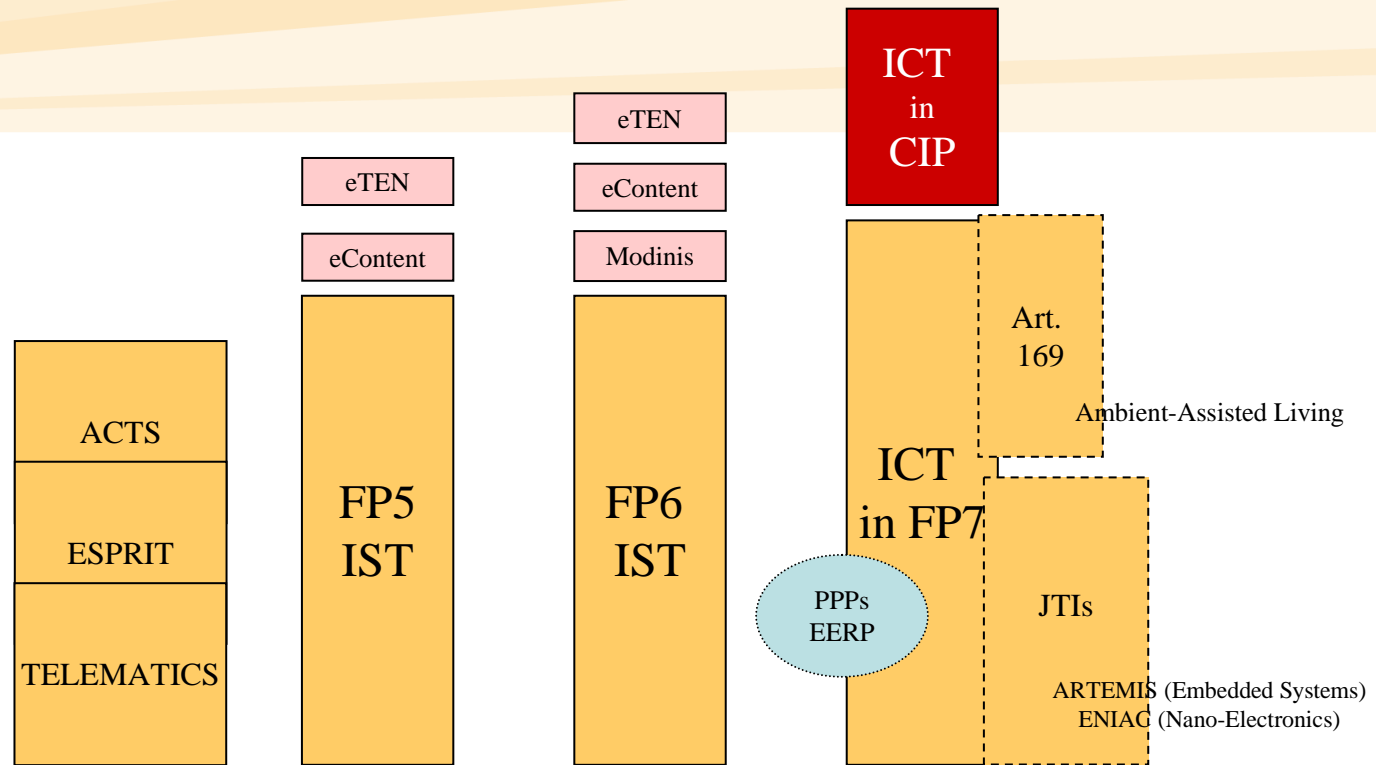
Seventh EU Framework Programme for RTD: total ~50 B€ 2007-13



FP7 Cooperation Programme



EU Framework Programmes evolution: Complementary instruments and wider mobilisation of resources



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FP4

FP5

FP6

FP7



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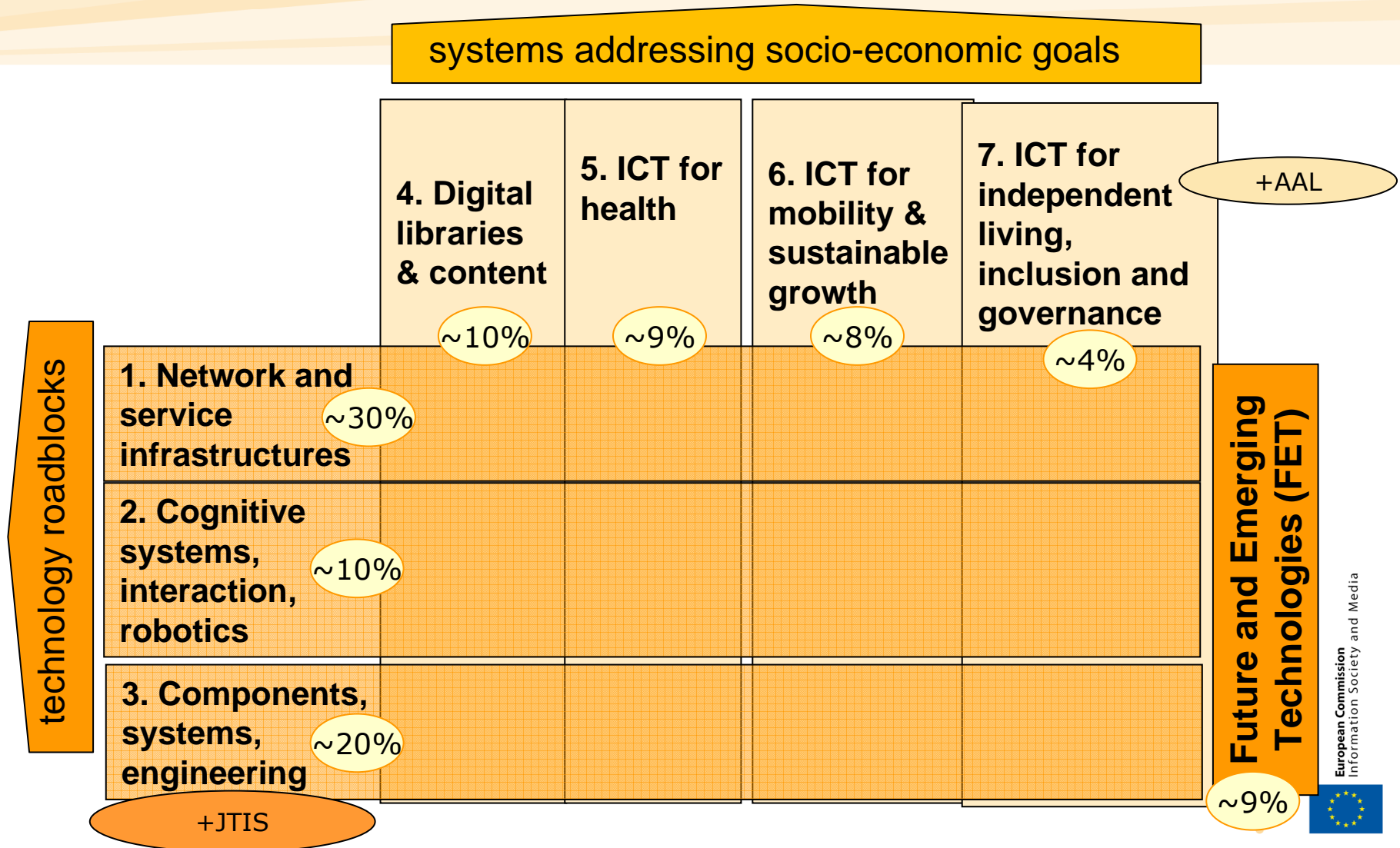


ICT in FP7 so far: Work Programme approach & structure

- A limited set of Challenges that
 - respond to well-identified industry and technology needs and/or
 - target specific socio-economic goals
- A Challenge is addressed through a limited set of Objectives
 - that form the basis of Calls for Proposals
- An Objective is described in terms of
 - target outcome
 - expected impact on industrial competitiveness, societal goals, ..
 - Funding schemes
- A total of ~25 Objectives expressed within 7 Challenges



ICT in FP7 so far: 7 Challenges + FET



ICT in FP7: Where do we stand?

- In 2009 the FP7 ICT Programme is in its third year of implementation.
- Four main calls have been launched
- Three Calls for proposals have been finalised and projects contracted
 - 581 projects have been launched so far for a total Community funding of about 2 B€.
- A fourth call has just been evaluated
 - contracts in negotiation for 801 M€
 - Around 225 new projects selected
- Call5 for 722 M€ is in evaluation
- Call 6 launched in Nov 2009 will DL in April



Still one call to go in 2009
 Call 6: Open 24 Nov 2009, Close **13 April 2010**; 286 M€

| Challenge | Objectives |
|--|--|
| Challenge 2: Cognitive systems, interaction, robotics | ICT 2009.2.1 Cognitive Systems and Robotics |
| Challenge 4: Digital Libraries and Content | ICT 2009.4.1 Digital Libraries and Digital Preservation |
| Challenge 5: Towards sustainable and personalised healthcare | ICT 2009.5.3 Virtual Physiological Human |
| Challenge 6: ICT for mobility, environmental sustainability and energy efficiency | ICT 2009.6.2 ICT for Mobility of the Future |
| Future and emerging technologies | ICT 2009.8.7,8,9,10 FET-Proactive |
| Horizontal support actions | ICT 2009.9.1 International Cooperation ICT 2009.9.2 Supplements to support International Cooperation between ongoing projects |

ICT in FP7: JTIs +AAL so far

- Joint Technology Initiatives (JTIs) in ICT
 - Two “Joint Undertakings” with pooling of resources from EU, MSs and Private sector
 - Have their own budgets and work programmes
 - Address: Embedded systems, nano-electronics
 - Total budget ~4.5 B€ including ~850 M€ from the FP
 - Two calls so far and 18 projects selected
- The AAL joint programme using Art 169
 - Addresses ICT for ageing
 - EU + MSs funding of 350 M€ (50% EC, 50% MSs)
 - Two calls so far: 24 projects selected



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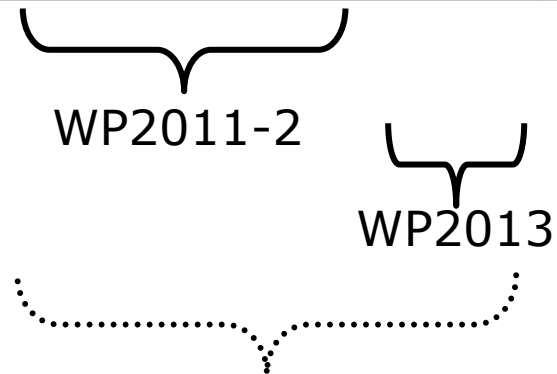
The 2011-13 plans

- A Work Programme for 2011-12 followed by a Work Programme for 2013
- WP2011-12 to be announced in July 2010
 - Orientations to be discussed with programme Committee in February 2010.
 - ICT Call 7 in July/Sept 2010
 - Partnering/information in ICT event in Brussels on 27-29 September
- JTIs and AAL have annual WPs and Calls



ICT in FP7: The budget profile

| | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | Total |
|-------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| ICT in FP7 | 1.107 | 1.114 | 1.142 | 1.202 | 1.323 | 1.512 | 1.710 | 9.110 |



WP2011-12: Setting priorities

- Reinforce Europe's strongholds
 - Europe's industry and technology position
- Seize new opportunities
 - Technology and use driven innovations
- Ensure that interventions are significant and that Europe has the capacities to implement
 - high-risk, medium-to-long term, trans-national collaborative research



Significance of the intervention

- Total public investment in ICT RTD in the Union: 5 -7 B€/year
 - Public investment: building knowledge capacities and risk sharing with industry
- ICT in FP6: ~1 B€/year. 15-20% of total public investment
- Private investment in ICT research: 30-35 B€/year
 - Large part of private investment (> 90%) concentrated on "development" (commercial prototypes).
- Community funding logic
 - medium to long term collaborative research requiring risk sharing with industry and the academic research community.
 - Community support represents ~50 % of total EU effort



Reinforce Europe's strongholds

- Network and service infrastructures
 - communication equipment and services, business software, security solutions ...
- Components and embedded systems
 - in vertical markets mainly
 - semiconductors, equipment, photonics, plastic electronics, integrated micro/nano systems ... embedded systems in vertical markets: cars, planes, medical, telecom ...
- A strong and broad knowledge base
 - strong academic research community
 - in core ICT fields and in other disciplines relevant for ICT: biotech, materials, cognitive sciences ...



Seize new opportunities for Europe

- New technology paths
 - Future Internet: of things, of services
 - Alternative paths to components and systems
 - Technology convergence
- Innovation from ICT use
 - ICT for a low Carbon economy
 - Health, well being and ageing
 - digital content and knowledge creation and use
 - Business and manufacturing



Future Internet

New emerging network and service infrastructures

- unlimited bandwidth and computing capacity
- Cloud computing, shared and federated resources
- Mobile/wireless access anywhere
- trillions of devices interconnected
- integrated security and trust for all
- adaptive and personalised services
- 3D semantic-based browsing systems

Offering

- Anywhere anytime connection for everyone
- An internet of services,
 - Web-based, Cloud comp.
- An internet of things
 - Sensors, RFIDs, MEMS, ..

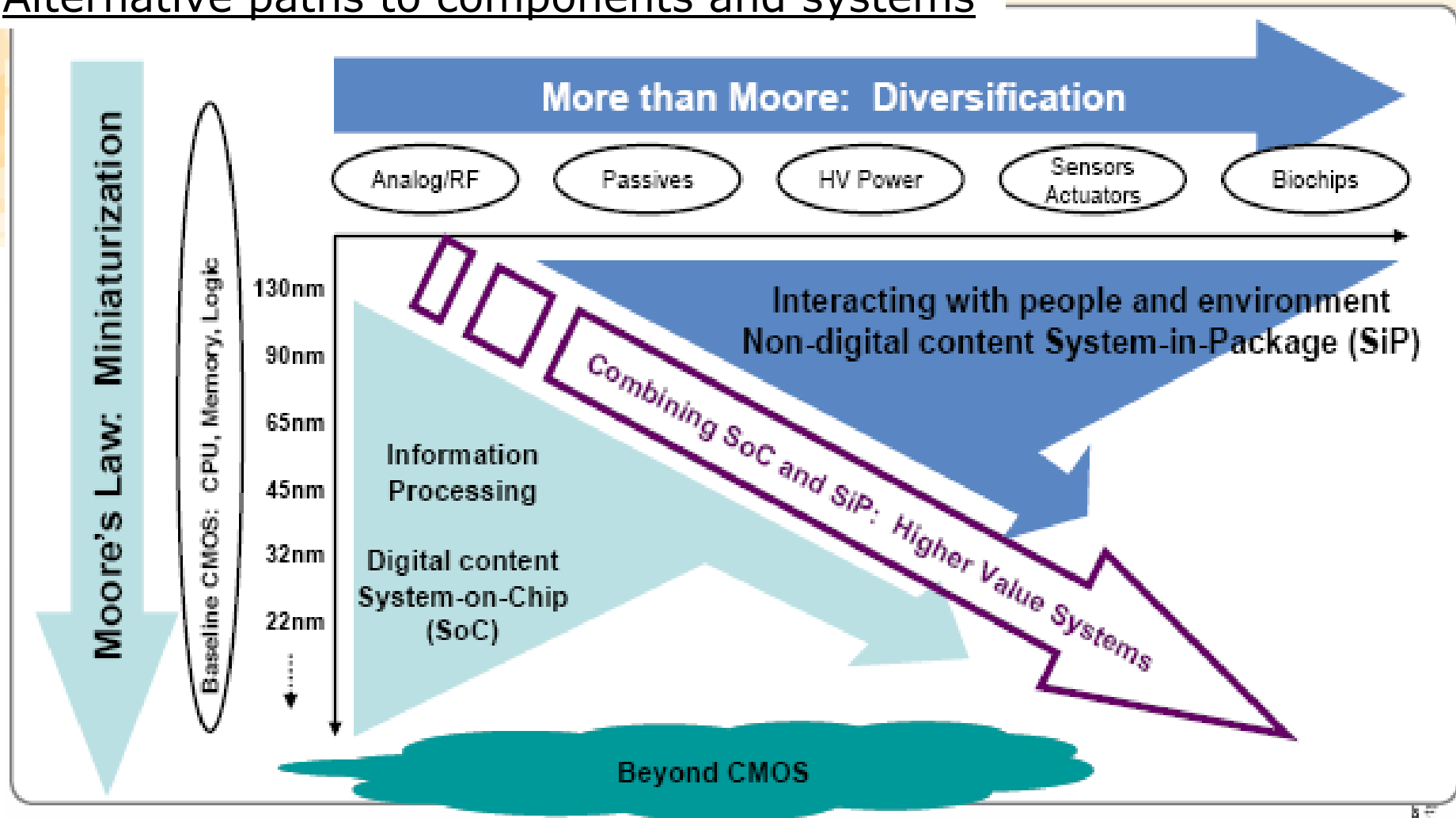


Future Internet: Innovations with 2 time scales

- In the medium term
 - Internet and web-based services based on open and shared platforms
 - and exploiting new access modes (e.g. wireless and mobile, Internet of things, etc..)
- In the longer term
 - Technology breakthroughs e.g.
 - Beyond IP networks, all optical, fully converged networks and access devices
 - New context based search tools,..
 - Advanced intuitive interfaces,..



Alternative paths to components and systems



- **'More Moore'**: more nano (miniaturisation: silicon < 45nm: smaller, higher perf, lower cost)
- **'More than Moore'**: more functions (heterogeneous techs: sensors, actuators, bio-nano)
- **Micro/nano-systems, SoC & SiP**: integration and diversification
- **Organic and large area electronics** : disposable electronics: e-paper, e-tags
- **Photonics** : light sources, fibres, lasers: lighting efficiency, medicine, biology

Technology convergence

- Bio- inspired ICT
 - Cognitive systems
 - Self-adaptable and learning systems
 - Robotics, in unstructured environments
 - New interaction techniques
- Quantum information processing
- Complexity theory



New opportunities ahead

The user drive

- Energy efficiency, low carbon economy
 - Green ICT and ICT for greening..
 - Better understanding/monitoring, etc..
 - Green transport, Green car
- Health, Ageing, inclusion
 - Personalised health systems, implants, imaging..
 - Active ageing, social interaction, health monitoring
- Enterprise, manufacturing and production systems
 - Smart manufacturing, virtual manufacturing, etc..
- Leisure, digital content
 - Games, entertainment, ..



What could change in WP2011-12

- A structure to be still based on Challenges
 - Revised challenges and objectives within the challenges
- Reinforced work across themes
 - to address Europe's key socioeconomic needs
 - 3 PPPs already launched in 2010 to continue and expand
 - Total budget for 2011-13: 390 M€ from ICT
- A new Future Internet PPP implemented in the WP
 - Commission Communication in Oct. 2009
 - Total budget 2011-13 of about 300 M€
- Strengthened support to ICT for a low carbon economy
- Special measures for SMEs in Content/creative industries
- Increase of 20% per year for FET
 - Already announced



PPPs implemented through the WP

- The three PPPs announced in the recovery package
 - FoF, Green car, EEB
 - Series of coordinated calls between the relevant FP7 themes
 - reflecting industry-driven research roadmaps and priorities
 - Each theme describes its contribution in a separate section of the theme's WP
- The new PPP on Future Internet
 - Idem but only for ICT



'Factories of the Future'

- Combined envelope of ~€1.2 bn
 - Help EU manufacturers, notably SMEs, adapt to global competitive pressures
 - by increasing the technological base of EU manufacturing
- R&D in production technologies, materials and ICT:
 - 'Smart' factories: agile manufacturing and customisation
 - process automation, control and optimisation, robotics ...
 - 'Virtual' factories: global networked operations
 - supply chain management, product-service linkages, management of distributed manufacturing assets ...
 - 'Digital' factories: optimised design of systems and processes
 - modelling, simulation, visualisation, lifecycle and knowledge management ...



'Factories of the Future' Budget

- Draft indicative budget envelopes:

| (M€) | ICT theme in FP7 | NMP in FP7 |
|-------------|------------------|------------|
| 2010 | 35 | 60 |
| 2011 | 210 | 340 |
| 2012 | | |
| 2013 | | |
| Total | 645 | |



'Energy-Efficient Buildings'

- Combined envelope of ~€1 bn to promote
 - green technologies
 - the development of energy-efficient systems and materials
 - in new and renovated buildings
- ICT R&D part
 - Monitoring and control of energy consumption
 - Advanced lighting systems
 - Smarter and optimised interconnections with the power grids



'Energy-Efficient Buildings' Budget

- Draft indicative budget envelopes:

| (M€) | ICT | NMP | Energy | Env |
|-------------|------------|------------|---------------|------------|
| 2010 | 15 | 30 | 15 | 5 |
| 2011 | 90 | 220 | 110 | 20 |
| 2012 | | | | |
| 2013 | | | | |
| Total | 505 | | | |



'Green Cars'

- Combined R&D envelope of ~€1 bn
 - to achieve a breakthrough in the use of renewable and non-polluting energy sources, safety and traffic fluidity
- R&D in ICT
 - ICT for Fully Electric Vehicles
 - Battery management and power supply
 - Control mechanisms
 - Interconnections with the transport and power infrastructures



'Green Cars' Budget

- Draft indicative budget envelopes:

| (M€) | ICT | Transport | Energy | NMP | Env |
|-------------|-----|-----------|--------|-----|-----|
| 2010 | 20 | 45 | 15 | 10 | 5 |
| 2011 | | | | | |
| 2012 | 90 | 175 | 35 | 50 | 45 |
| 2013 | | | | | |
| Total | 490 | | | | |



PPP on Future Internet

- Work in progress
- Focus would be on
 - Future Internet-based service platforms
 - Enabling Europe to seize the opportunities brought
 - new internet access devices and systems, wireless, mobile, internet of things
 - Web technologies enabling aggregation, composition of services etc..
 - Evolution of network architectures
 - Complements the work to be done on software, services and networks
 - Notably, cloud computing
 - interoperability, security, dependability and programming..



More Information

Thank you!!

<http://cordis.europa.eu/fp7/ict/>



European Commission
Information Society and Media