

附 件

附件一、歐盟 ISTAG 會議邀請函

附件二、台灣 ISTAG 會議代表團成員名單

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附件四、技術處簡報

附件一、歐盟 ISTAG 會議邀請函

EUROPEAN COMMISSION

Information Society and Media Directorate-General
Policy Coordination and Strategy
The Director

Brussels, 18 Aout 2011
INFSO/C2/CO/eh

Subject: Meeting with ISTAG (IST Advisory Group) - 19 September 2011

Brussels (14:00-17:30)

Dear Mr Chen,

On behalf of the ISTAG Working Group on international cooperation, Directorate-General *Information Society and Media* (DG INFSO) of the European Commission is pleased to invite a delegation from Taiwan to Brussels for a meeting in order to examine the possibilities for enhanced cooperation between the EU and Taiwan under the ICT part of the EU's framework programme for research and innovation.

ISTAG was set up to advise the European Commission on the overall strategy to be followed in carrying out the ICT thematic priority under the EU framework programme for research and innovation. It reflects and advises on the definition and implementation of a coherent policy for research and development in ICT in Europe, both to help strengthen industrial competitiveness and to address the main European and global societal challenges. ISTAG thus makes recommendations on priorities and activities of EU-funded research and innovation in ICT. ISTAG has recently set up a working group on international cooperation.

Following in particular the recent visit of DG INFSO Deputy Director-General Zoran Stančić to Taiwan, we have conveyed to ISTAG the interest of the National Science Council and of research institutes under the Ministry of Economic Affairs (ITRI) in enhanced cooperation with the EU. ISTAG would be interested to hear presentations from the Taiwanese side with focus on priority areas on which we could achieve results for our mutual benefit. We have taken note of the areas of interest already presented to DDG Stančić during his meetings with the NSC and ITRI and believe that the Taiwanese delegation will further elaborate on them during the meeting with ISTAG.

http://cordis.europa.eu/fp7/ict/istag/home_en.html

Commission européenne/Europese Commissie, 1049 Bruxelles/Brussel, BELGIQUE/BELGIE - Tel. +32 22991111
Office: BU25 1/24 - Tel. direct line +32 229.59014 - Fax +32 229.66272
carlos.oliveira@ec.europa.eu

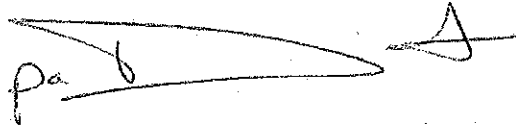
Ref. Ares(2011)893620 - 19/08/2011

Further information on the funding possibilities and the management of research and innovation programmes from the part of Taiwan would also be welcome. ISTAG and the European Commission would of course also be willing to address any other questions from the Taiwanese side.

We will send a draft agenda to you in the near future. We would envisage the format of the meeting to be of half a day of presentations/discussions on 19 September possibly followed by a dinner. The meeting will be held in Avenue de Beaulieu 25, 1160 Brussels. For further information about the specific arrangements for the meeting please do not hesitate to contact Christophe Forax (Christophe.Forax@eeas.europa.eu) from the EU External Service as well as Carlos Oliveira (Carlos.Oliveira@ec.europa.eu) and Alison Birkett (Alison.BIRKETT@ec.europa.eu) in Brussels.

Yours faithfully,

Yours faithfully,

A handwritten signature in black ink, consisting of a long horizontal line with a small loop at the end and a vertical stroke on the left side.

Detlef Eckert

Detlef Eckert
Mr Cheng-Hong Chen
Deputy Minister of the National Science Council
No106Ho-PingE. Rd
Sec. 2 Taipei
Taiwan

附件二、台灣 ISTAG 會議代表團成員名單

ISTAG Meeting Taiwan Delegation List & CV September 19 – 20, 2011

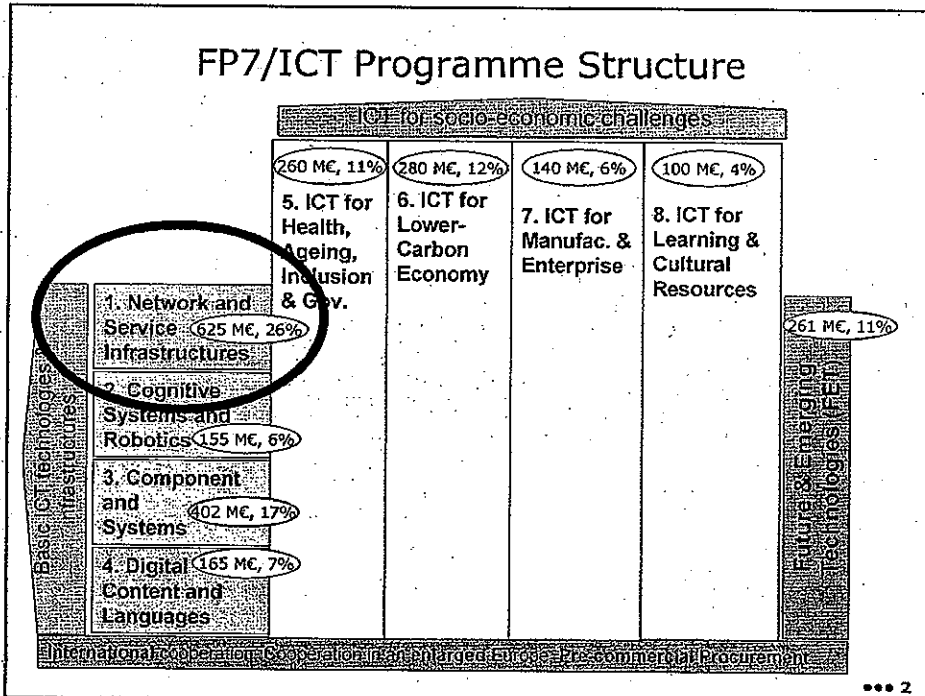
Taiwan Delegation List:

No.	Name	Title
1	Youn-Long Lin	Chair Professor, Department of Computer Science, National Tsing Hua University, Taiwan
2	Ren Chyuan Luo	Chair Professor, Electrical Engineering at National Taiwan University; President, Robotics Society of Taiwan
3	Wen-Hsin Chan	Advisor, Science & Technology, Department of Industrial Technology, Ministry of Economic Affairs of Taiwan
4	Kuen-Jong Lee	Professor, Department of Electrical Engineering, National Cheng Kung University of Taiwan
5	Chung-Ta King	Chair, Department of Computer Science, National Tsing Hua University of Taiwan
6	Chun-Hung Huang	Deputy Division Director, Mechanical and Systems Research Laboratories, Industrial Technology Research Institute of Taiwan
7	Ming-Jer Kao	Deputy Division Director, Department of Electronics and Optoelectronics Research, Industrial Technology Research Institute of Taiwan
8	Jen-Hui Tsai	Deputy General Director, Mechanical and Systems Research Laboratories, Industrial Technology Research Institute of Taiwan
9	Liang-Han Hsieh	Industrial Technology Research Institute, Taiwan Representative, Western Europe Office (WEO)
10	Meng-Fan (Marvin) Chang	Associate Professor, Department of Electrical Engineering, National Tsing Hua University of Taiwan
11	Louis Chen	Program Director, Department of International Cooperation, National Science Council of Taiwan

Meeting with delegations of Taiwan and Korea 19/09/2011

DG INFSO
Directorate D
Converged Networks and Services

Peter Friess



Challenge 1: Pervasive and Trusted Network and Service Infrastructures

- The Future Internet, beyond the limitations of today's Internet
- Holistic approach
- Evolutionary and Clean slate approaches
- Critical Mass, FIA process
- From research to innovation, the FI-PPP

Challenge 1, Content (Research)

- 1.1 Future Networks
- 1.2 Cloud Comp, Internet of Services, Advanced Software Engineering
- 1.3 Internet Connected Objects
- 1.4 Trustworthy ICT
- 1.5 Networked Media and Search Systems
- 1.6 Future Internet Research and Experimentations

Challenge 1, Content (details)

1.1: Future Networks objects

- **Wireless and mobile broadband systems**
- **High capacity end-to-end infrastructure technologies**
- **Internet architectures, Mgt, Ops**
- **Satellite communication**

1.2: Cloud Computing, Internet of Services and Advanced Software Engineering facilities for experimentally-driven R&D on Future Internet, supporting new areas or extending existing capabilities.

- **Cloud Computing**
- **Internet of Services**
- **Advanced software engineering**

1.3: Internet-connected objects

- **Architectures for context aware, reliable, flexible.. Sensor nets. Interoperability**
- **Software for Smart applications and data management**
- **Roadmaps, Inco**

Challenge 1, Content (details)

1.4: Trustworthy ICT

- **Heterogeneous networked, service and computing environments.**
- **Trust, eIdentity and Privacy management Infrastructures**
- **Data policy, governance and socio-economic ecosystems**
- **Networking and Coordination activities (max 10M€)**

1.5: Networked media and search systems

- **Digital media delivery platforms**
- **End-to-end immersive and interactive media technologies:**
- **Multimedia search technologies**

1.6: Future Internet Research and Experimentation

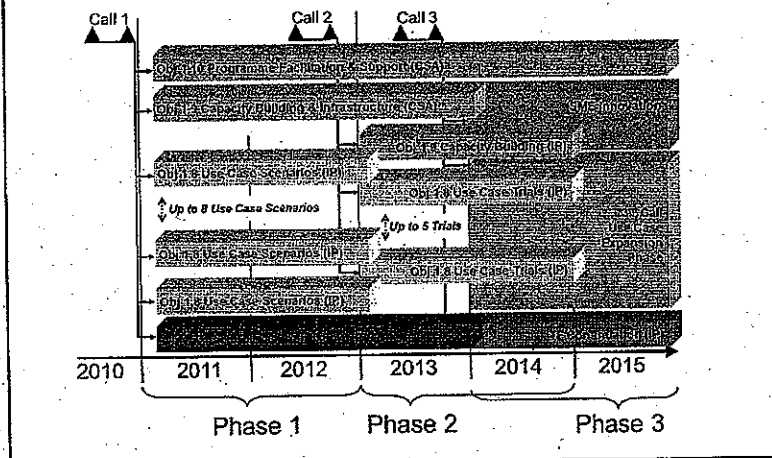
- **FIRE Federation: facility self-sustainable towards 2015**
- **FIRE Experimentation and experimentally-driven research using one or more of the existing FIRE facility prototypes**

Challenge 1, Future Internet PPP

Holistic approach, piggybacking on multiple technologies, towards smart environments and systems. **R&D&Innovation** drive

- 1.7: Core Platform (1 IP)
 - with generic enablers e.g. composing data and objects for mash-up apps and services, ID across domains, network/service management ...
- 1.8: Use cases (IP, up to 8)
 - application scenarios using e.g. context-awareness, RT info processing, ad-hoc service composition ...
- 1.9: Infrastructure support (CSA)
 - requirements for experiments and validation ...
- 1.10: Programme facilitation and support (CSA)
 - coordination and accompanying measures ...
- + 80 M€ in FI PPP Call in 2012

Challenge 1 FI-PPP: Programme Architecture





Internet Things EU Action Plan

- Research, Public-Private Partnerships, Pilot Projects, Standardisation
- Trust, Security & Privacy - policy framework
- Internet of Things Governance development
- International dialogue (in particular with Asian countries)

Underlying foundations:

- Collaboration with Member States
- 20 20 by 2020 - Europe's climate change Action plan
- Digital Agenda for Europe
- ICT for transition to energy-efficient, low-carbon economy

DG INFSO activities
Dir E : Digital Content and Cognitive Systems
Research and Innovation activities

Brussels, 19 October 2011

Anne Bajart
Unit E5 - Cognitive Systems, Interaction, Robotics
DG Information Society and Media
European Commission

<http://www.cognitivesystems.eu>



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Outline

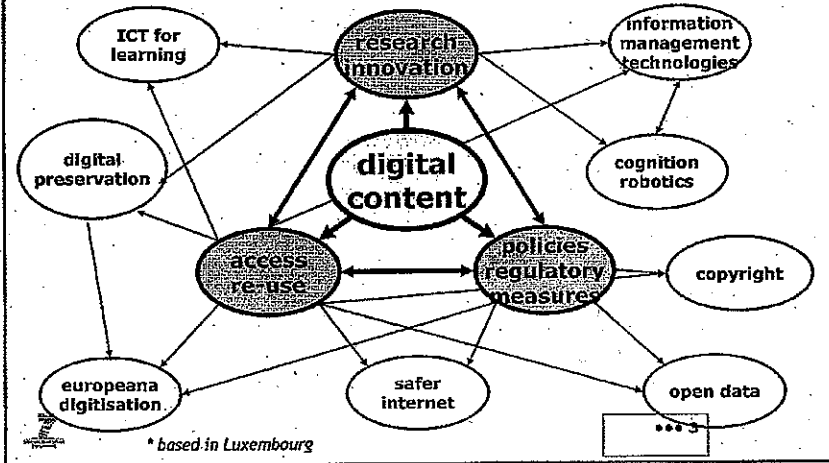
- **Dir E : Digital Content and Cognitive Systems**
 - Mission and activities
 - Structure
- **EU research in Robotics and (artificial) Cognitive Systems**
 - FP7 programme in Robotics and Cognitive Systems
 - Current project portfolio
 - Areas for cooperation: Benchmarking, Standardisation, Research projects (FP7 Call 9)



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Dir E : Digital Content and Cognitive Systems*
Mission and activities

Making content accessible to all



Dir E : Digital Content and Cognitive Systems
Structure

- ⊙ E1: Language Technologies, Machine Translation
- ⊙ E2: Technologies for Information Management
- ⊙ E3: Cultural Heritage & Technology Enhanced Learning
- ⊙ E4: Access to Information
- ⊙ E5: Cognitive Systems, Interaction, Robotics
- ⊙ E6: eContent and Safer Internet

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



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EU Research in Cognitive Systems and Robotics

Systems that perceive, understand and act



Our mission:

to foster the development and use
of cognitive systems and robots

Systems making sense of the world around them and its content
operating autonomously in dynamic, real-life environments
assist people in everyday tasks.

We contribute to the Digital Agenda for Europe through a unique mix
of activities addressing scientific, industrial and societal
challenges.



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Cognitive Systems and Robotics in FP7 (2007-2012)

Year/Programme	Objective	Call (Evaluation)	Budget	Projects ACS & Robotics (total)
2007-2009	ICT-2007.2.1 (ICT-2007.2.2): Cognitive Systems, Interaction, Robotics	ICT Call 1 (2007)	96 M€	17 (27)
		ICT Call 3 (2008)	97 M€	17 (23)
2009-2010	ICT-2009.2.1: Cognitive Systems and Robotics *)	ICT Call 4 (2009)	73 M€	19
		ICT Call 6 (2010)	80 M€	22
2011-2012	FOF.ICT.2010.1: Smart Factories: ICT for Agile and Environmentally Friendly Manufacturing	NMP-ICT-FoF (2010)	35 M€	3 (8)
		ICT-2011.2.1: Cognitive Systems and Robotics	ICT Call 7 (2011) ICT Call 9 (2012)	73 M€ 82 M€

*) No more interaction since 2009 - language-based interaction in a separate objective with its own budget

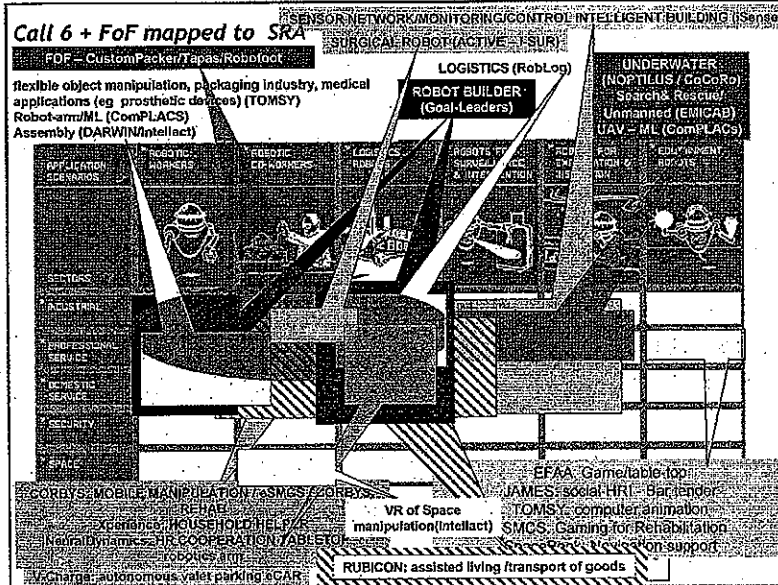
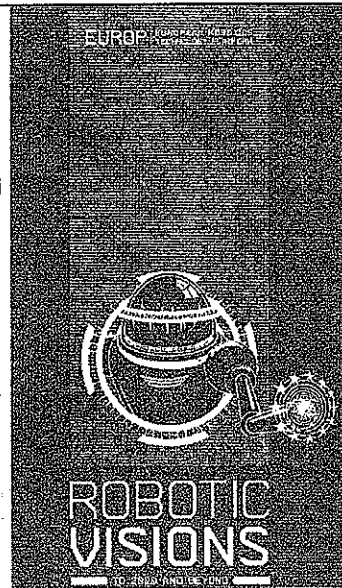


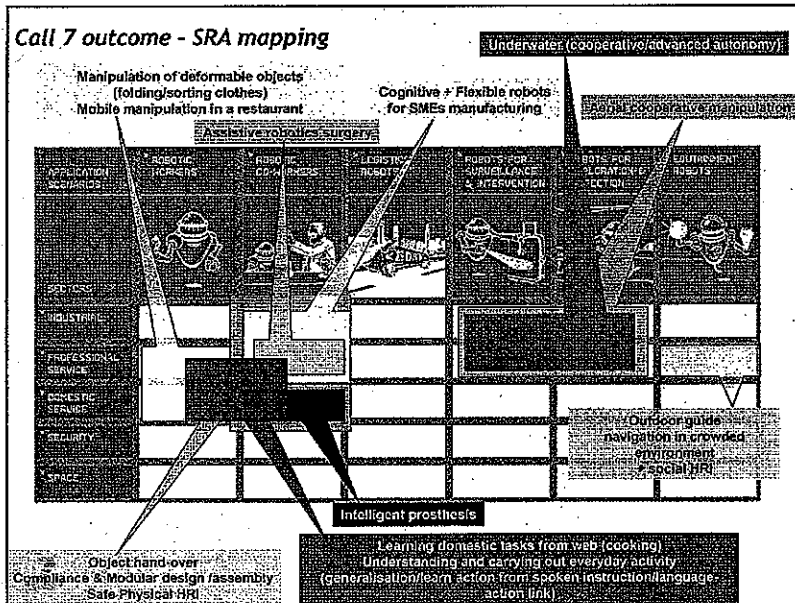
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Strategic Research Agenda for Robotics in Europe

- ⊙ **EUROP**: European Technology Platform
- ⊙ RTD strategy document developed by EUROP members in the CARE EU-funded project (FP6)
- ⊙ Industry-driven, based on extensive analysis of market development and future opportunities
- ⊙ Commitment of all European stakeholders
- ⊙ Short-term (2010), mid-term (2015) and long-term (2020) vision
- ⊙ Public release in Brussels on July 7, 2009

<http://www.robotics-platform.eu>





Coordination Actions on Cognitive Systems and Robotics

- **EuCOGNITION**
 - European Network for the Advancement of Artificial Cognitive Systems, Interaction and Robotics
 - <http://www.eucognition.org/>
- **EuROBOTICS**
 - improvement of cooperation between industry and academia and the enhancement of public perception of (European) robotics.
 - <http://www.eurobotics-project.eu/cms/index.php>
- **EuroSURGE**
 - integration of research and development in Computer and Robot Aided Surgery (CRAS)
 - leading to the new field of Cognitive Surgical Robotics.
 - coming soon



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Robotics Benchmarking : EU-funded effort

- **European RObotics research Network (EURON)**
 - <http://www.euron.org/>
 - Benchmarking Initiative <http://www.euron.org/activities/benchmarks/>
 - Research Roadmap <http://www.euron.org/activities/roadmap.html/>
- **Strategic Research Agenda - SRA (CARE - European RObotics Platform EUROP)**
 - <http://www.robotics-platform.eu>
 - Benchmarking and standardisation identified as a key requirement
- **euRobotics**
 - <http://www.eurobotics-project.eu/>
 - to give the academic world a chance to test the market-readiness of their technologies in scenarios selected by industry through competitions or Grand Challenges.
- **euCogit**
 - <http://www.eucognition.org/>
 - Towards the formulation and dissemination of « Challenges for artificial cognitive systems »



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Robotics Standardisation efforts

- ◎ Monitoring work of ISO Technical Committee 184 (Automation Systems and Integration), Sub-Committee 2 (Robots and robotic devices)
- ◎ Coordination of European positions and financing of participation through Coordination Action euRobotics (a task is dedicated to standardisation activities; this task is managed by FHG-IPA).
- ◎ Informing European research strategy about relevant developments, e.g. new safety standards
- ◎ Ensuring representation of Europeans in this committee



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**Next Call for Proposals -
FP7 - ICT Call 9**

OBJECTIVE: 2.1 Cognitive Systems and Robotics
PUBLICATION: 18/01/2012 (TBC)
DEADLINE: 17/04/2012 (TBC)
INDICATIVE BUDGET: 82 M€ (TBC)

© **Target (b): Cognition and control in complex systems**

- Enabling technologies based on the acquisition and application of cognitive capabilities (e.g., establishing patterns in sensor data, classification, conceptualisation, reasoning, planning)
- Enhancing the performance and manageability of complex multi-component and multi-degree-of-freedom artificial systems, also building on synergies between cognitive systems and systems control engineering.



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**Next Call for Proposals -
FP7 - ICT Call 9**

© **Target (c): Gearing up and accelerating cross-fertilisation between academic and industrial robotics research**

- synergies between respective research agendas through joint industrially-relevant scenarios,
- shared research infrastructures,
- joint small- to medium-scale experimentation with industrial platforms and implementation of comparative performance evaluation methodologies and tools.

© **Target (e): Speeding up progress towards smarter robots through targeted competitions**

- based on suitably evolving reference scenarios
- focused on capabilities
- involving relevant stakeholders
- events, dissemination and public awareness measures



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Robotics & Cognitive Systems FP7 Call 9
Where to find information?

- http://cordis.europa.eu/fp7/ict/cognition/calls_en.html
 - Q&A document
 - INFO DAY (15/11/2011, Brussels)
- Some existing examples of international cooperation (project partners funded/un-funded; external advisory boards, EuCognition, EuroSurge)



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Thank you for your attention

anne.bajart@ec.europa.eu

<http://www.cognitivesystems.eu>



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Overview of INFSO/F Emerging Technologies and Infrastructures

Visit of Korean and Taiwanese Delegations
Brussels, 19 September 2011



Eric Mijena
European Commission - DG INFSO/F
Emerging Technologies and Infrastructures

The views expressed in this presentation are those of the author and do not necessarily reflect the views of the European Commission

FP7 2007 –2013 Specific Programmes

Cooperation – Collaborative research
Fostering collaboration to gain leadership in key technology areas

Ideas – ERC Frontier Research
Supporting basic research at the frontiers of science

People – Marie Curie Actions
Supporting mobility and career development of researchers

Capacities – Research Capacity
Building world-class infrastructures for European researchers

+

Euratom programme
Nuclear fusion and fission research

Joint Research Centre (JRC)
Conception, development, implementation & monitoring of EU policies

*** 2

Overview of INFSO/F

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e-Infrastructures

Enabling researchers with leading ICT-based research infrastructures



Innovating the scientific process:
global virtual research communities



Accessing knowledge:
scientific data infrastructure



Sharing the best resources:
e-Science computing: grid, cloud, HPC



Linking the ideas at the speed of the light:
GÉANT + global extensions



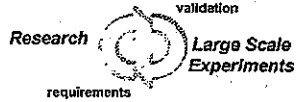
Designing future facilities:
European top-class HPC (PRACE)

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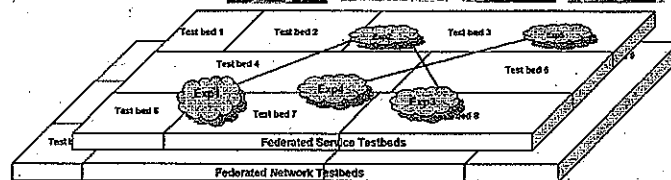
Future Internet Research and Experimentation

Experimentally-driven research for defining the Future Internet

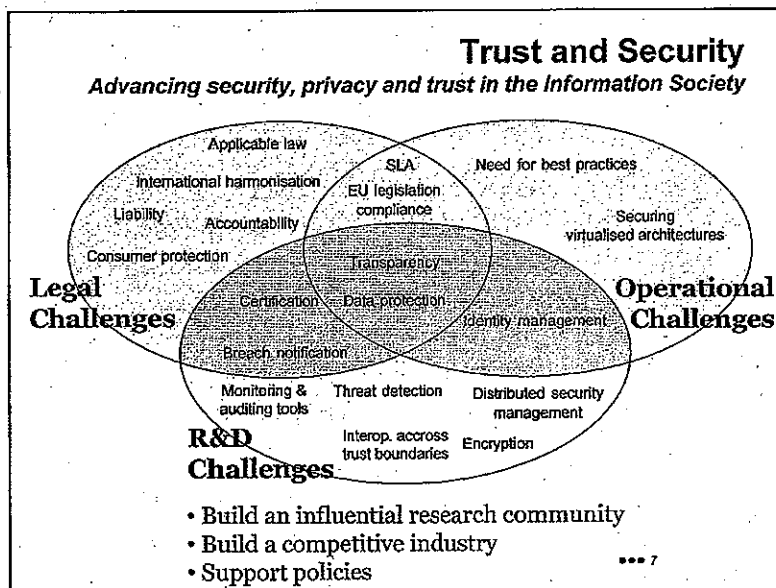
FIRE Virtuous Circle



FIRE Experimental Facility



- Research and innovation on new network and service architectures
- Large scale experimentation; predict behaviour; study non-technical impact



Further information

FET Open
<http://cordis.europa.eu/fp7/ict/fet-open/>

FET Proactive
<http://cordis.europa.eu/fp7/ict/fet-proactive/>

FET Flagships
http://cordis.europa.eu/fp7/ict/programme/fet/flagship/home_en.html

e-Infrastructures
http://cordis.europa.eu/fp7/ict/e-Infrastructure/home_en.html

Future Internet Research and Experimentation (FIRE)
http://cordis.europa.eu/fp7/ict/fire/home_en.html
<http://www.future-internet.eu/>

Trust and security
<http://cordis.europa.eu/fp7/ict/security/>

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DG INFSO Directorate G: Components and Systems

1



The Directorate at a glance

- Staff: ±120 persons
- Contribution budget of about 450M€
- R&D activities:
 - Framework Programme 6 (FP6)
 - Framework Programme 7 (FP7), incl Public Private Partnerships (PPP) on Factories of the Future (FoF) and Green Car (GC)
 - Competitiveness & Innovation Programme (CIP)
 - Joint Technology Initiatives (JTI) ARTEMIS & ENIAC
- Other activities:
 - eSafety, eCall,...
 - International co-operation...

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7

Nanoelectronics Challenges

ITRS-ERD vision of the role of Beyond CMOS and More than Moore elements to form future coaxed CMOS platforms.

- **Miniaturisation: progress is complex, expensive and global** (More Moore)
- **Moore's law will come to an end** (Beyond CMOS)
- **Increase functionality** : Changing business models & more added value operations (More than Moore)
- **Address manufacturing, integration and system competence** - Smart components and design
- **Address value chain:** equipment companies, advanced manufacturing (450mm), access for SMEs

3

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Microsystems Micro/Nanosystems

- **Integrated microsystems**
Sensor- & actuator-based systems
- **Micro/Nano-Bio-ICT convergence**
Biosensors, lab-on-a-chip, bioMEMS, autonomous implants
- **Integration of smart materials**
Integration of micro-nano technologies and smart systems into new & traditional materials, e.g. textiles, glass, paper
- **From microsystems to viable products**
Microsystems manufacturing technologies
- **Microsystems for communications & data management**
Smart micro/nanosystems enabling wireless access & facilitating intelligent networking

Challenges:
Multidisciplinarity, heterogeneity, multifunctionality, Integration.

Courtesy STELLA

RFID

Courtesy INTELLIDRUG

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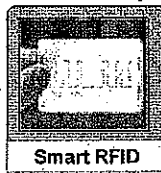
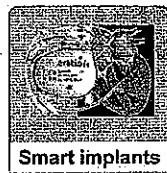
Microsystems Smart Systems Integration

Smart Systems ...intelligent miniaturised technical subsystems evolving from microsystems technology with ≥ 1 additional functionalities:

- are able to diagnose a situation, describe it and qualify it,
- mutually address and identify each other,
- are predictive,
- are able to decide and help to decide,
- enable the product to interact with the environment.

They are networked, energy autonomous and highly reliable.

R&D in advanced microsystems driven by application



Courtesy of EPoS

5



Embedded Systems and Control Overview

Computing

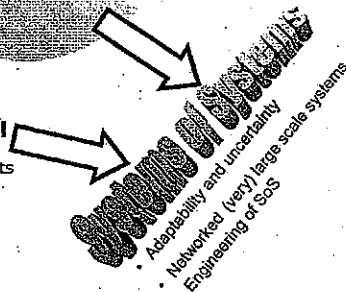
- Programmability
- Multicore and Reconfigurable Architectures
- Increase performance
- Reduce power consumption
- Improve reliability

Embedded Systems Design

- Theory & Methods
- Platform-Based Design
- Novel architectures and tools
- Energy efficient and energy-aware heterogeneous ES

Networked Monitoring & Control

- Complex Systems Engineering
- Wireless Sensor Networks & Cooperating Objects
- Control of Large-Scale Systems
- Energy-aware, self-organising M&C systems
- Robustness; distribution; cooperative control



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7
7th Framework Programme


Photonics Photonics and Organic Electronics (OE)

Photonics

- Photonics components and subsystems
- Core and disruptive Photonics Technologies
- Optical data communications
- Biophotonics for early, fast and reliable medical diagnosis of diseases
- Imaging & sensing for safety and security
- Lighting and displays


Organic Electronics

- Organic and disruptive Photonics
- Flexible organic and large area electronics and photonics
- Organic and large area electronics & display systems



Foster R&I capabilities of European Photonics and Organic Electronics stakeholders to address global challenges

Specific actions in solid state lighting – 20% overall reduction in energy use on lighting by 2020



7

7
7th Framework Programme

ICT for Transport Main challenges

Mission: ICT-based applications, systems and services for **safer, cleaner and smarter mobility**. The long term goal is to achieve mobility in Europe that is virtually accident and carbon free, efficient, adaptive, clean and comfortable. In more concrete terms:

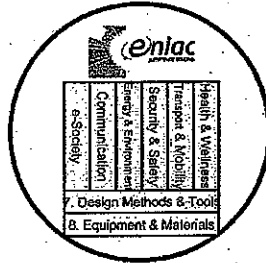
- Safety (-50%)
- Congestion (-2% GDP)
- Energy efficiency and emissions (- 80 to 95% by 2050)

Focus of research: ICT for Low-carbon economy: (1) Low-carbon multi-modal mobility and freight transport (2) Cooperative Systems for energy efficiency and sustainable mobility (3) ICT for Fully Electric Vehicle (with G2), standardisation, international cooperation (USA, Japan)

Platforms: The Intelligent Car Initiative/the eSafety Forum, Transport Technology Platforms (ERTRAC, ERRAC, ...)

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Public Private Partnerships Nanoelectronics and embedded systems



Maintain and consolidate European world leadership in embedded systems technologies which are crucial for the competitiveness of many important industries and for key applications (e.g. energy, security, safety, health, environment and well-being)

Public Private Partnership

- **Green Car Initiative:**

Research areas and research needs:

- * vehicle concepts and integration
- * energy storage
- * drive train
- * grid integration and interfaces
- * EV integration in transport system



- **Factory of the Future**

Objective: Help European manufacturing enterprises to adapt to global competitive pressures by improving the technological base of manufacturing across a broad range of sectors.

Themes:

- **Smart Factories:** More automation, better control & optimisation of factory processes
- **Virtual Factories:** To manage supply chains; to create value by integrating products & services
- **Digital Factories:** "To "see" the product before it is produced"



Potential co-operation areas

- Transport
 - Deployment of eCall
 - Decarbonisation of transport
 - Cooperative system
- Advance nano-electronics research on devices and their manufacturability
- Assessment of process and metrology for semiconductor equipment
- Next generation wafer size
- Technology roadmap – nano electronics and smart systems

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THANK YOU

Willy.VanPuymbroeck@ec.europa.eu

Information Society and Media:

http://ec.europa.eu/information_society

http://cordis.europa.eu/fp7/ict/nanoelectronics/mission_en.html

European research on the web:

<http://cordis.europa.eu>

<http://www.eniac.eu>

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Digital Agenda
 for Europe





19 September 2011
 Brussels

ICT addressing societal challenges

Loris Di Pietrantonio
 European Commission - DG Information Society and Media
 Policy Development Officer - Assistant to Director

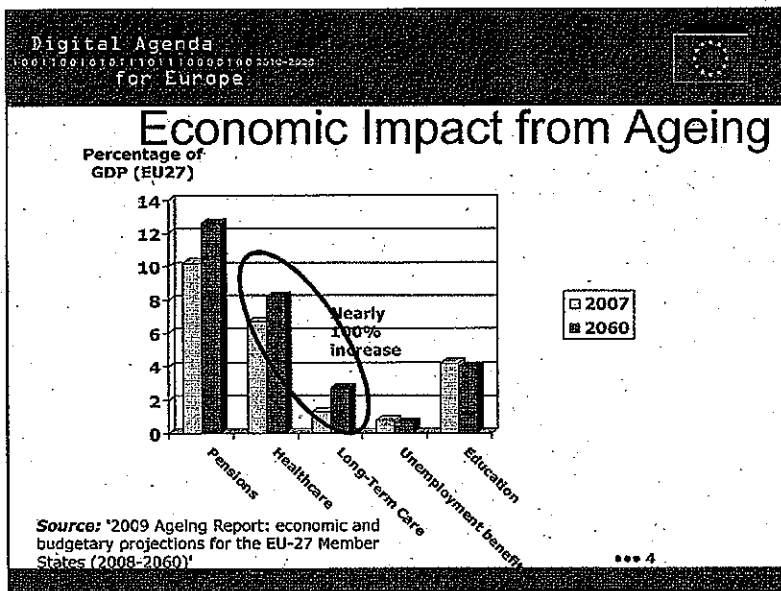
ICT addressing societal challenges
 BU31 - 7/50 - 31 Avenue de Beaulieu - 1049 Brussels
 Tel. +32 2 296 54 70 - Fax. +32 2 296 66 13
 e-mail: Loris.dj-pietrantonio@ec.europa.eu

Digital Agenda
 for Europe

	Sustainability and affordability of Health <ul style="list-style-type: none"> Increasing costs of care (up to 16% of GDP by 2020) ICT for personal high-quality health Best quality care & new business opportunities
	Digital Exclusion and Demographic Ageing <ul style="list-style-type: none"> 30% of Europeans digitally excluded (elderly, low education, disabled); Need for innovation in social care ICT for cost-effective and personalised independent living Social Innovation, Empowerment, Skilled labour
	Empowerment in the digital single market <ul style="list-style-type: none"> Increase the use and take-up (30%) of public e-services ICT for more open, flexible, interactive e-services across EU Better public services to empower users with fewer resources
	Energy Demand and Climate Change <ul style="list-style-type: none"> Energy use up by ~1,3% p.a. ICT sector CO² = aviation's ICT for best resource use and energy efficiency Energy saving & Security of supply; Eco-Innovation

Digital Agenda
for Europe

Ageing



Digital Agenda
for Europe

The Ageing & Health Challenge

- About 10% of people aged over 65 have Alzheimer's disease; worldwide, around 35 million people with dementia.
- Cost of dementia: estimated at >€170 billion in Europe in 2008; > \$172 billion in USA in 2010.
- Parkinson's disease: prevalence around 1.6% of people aged over 65 years; according to the WHO: > 5 million patients worldwide, > 2 million in Europe.
- Cost of Parkinson's disease in Europe: about €20 billion per year.
- More than 15 million people worldwide suffer each year from stroke.
- Cost of stroke in EU: > €38 billion in 2006.
- Worldwide mortality due to diseases related to liver: 1.5 million.
- Market for liver support: estimated to be > \$2 billion worldwide.

Digital Agenda
for Europe

FP7 & AAL programmes

Ongoing: FP6 + FP7 + AAL

- Smart navigation
- Robotic manipulators
- Brain-neural computer interfacing
- Hearing aids
- Wheelchairs
- Audio-description
- Software for dyslexia
- Embedded accessibility
- User simulation
- Smart homes, monitoring
- Cognitive support
- Robotics for elderly
- Cooperation networks & Research.Roadmaps

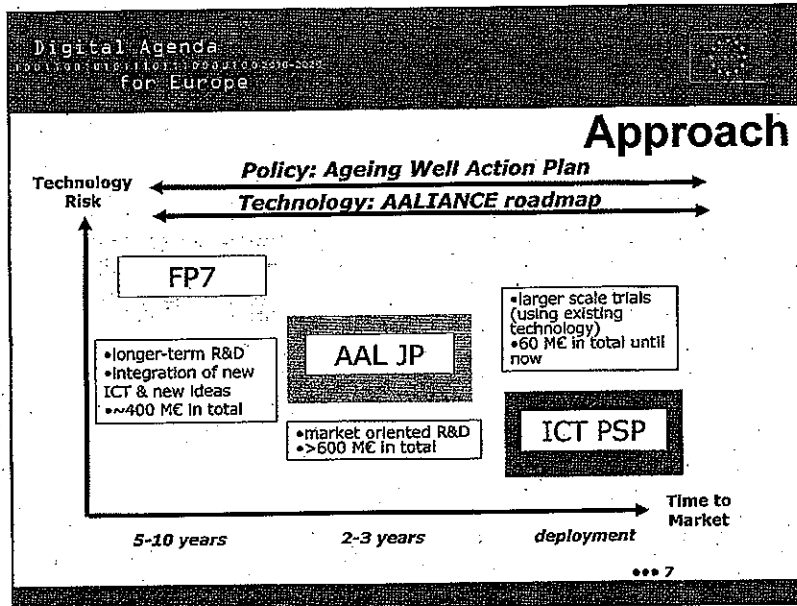
to come

- AAL current and next calls
- FP7-WP2013
- FP8

e.g. EU4ALL (FP6 IP) for organising e-learning for universities

e.g. VERITAS (FP7 IP) for designing: automotive, smart living spaces, workplace, ehealth and infotainment environments

e.g. (FP7) Active Ageing (coming)



Digital Agenda
 for Europe

CIP → ICT Policy Support

From calls 1-4


- Deployment pilots in
 - accessible DTV
 - Emergency services
 - Independent living of elderly
 - accessible public digital terminals, e.g. ATMs
- Thematic networks
 - Support to accessibility policy (Web accessibility, AV:DTV+TC, accessible public digital terminals)
 - Assistive technologies portal

to come

- CIP current call:
 - Web accessibility pilot
 - Ageing (fall prevention)
 - Digital competencies for carers
- CIP next calls
- CIP 2


-Contact: peter.wintlev-jenssen@ec.europa.eu

Digital Agenda
100110010101101100001002250-2020
for Europe



Health

Digital Agenda
100110010101101100001002250-2020
for Europe



Objectives

- Personal Health Systems
- Virtual Physiological Human
- Patient Guidance Services (PGS), safety and healthcare record information reuse

Digital Agenda
 100110010101110110001001110110101
 for Europe

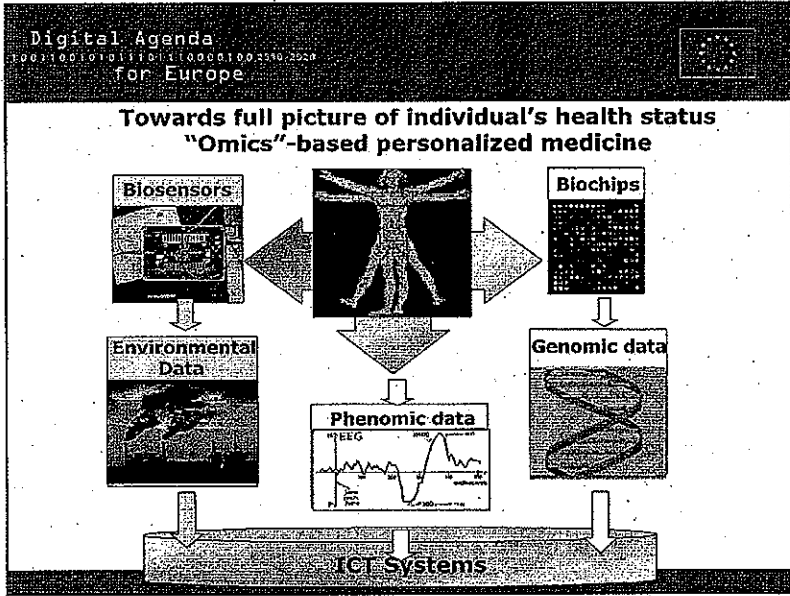
What is VPH?

What?
 EU initiative ICT research enabling collaborative investigation of the human body/organ/systems as a single complex system.

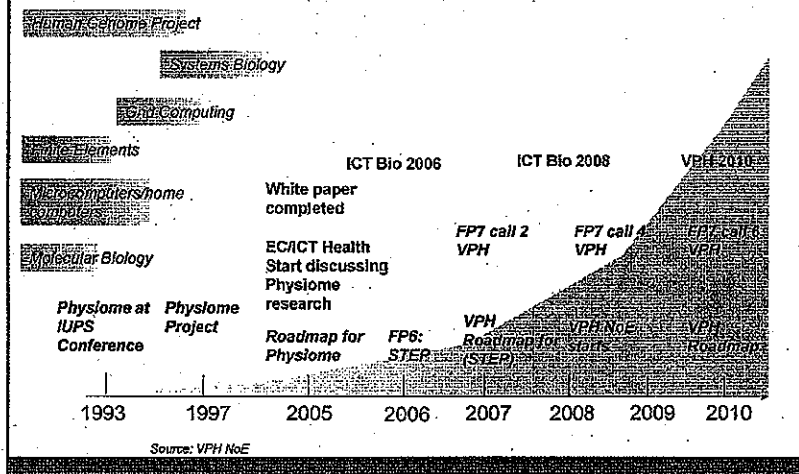
How?
 Development of patient-specific computer models and simulators for applications in personalised and predictive healthcare.

Integrative approach:

- Vertical: biological levels: from molecule, cells to organ
- Horizontal: coupling of different physiological functions
- Different scales: spatial and temporal scales



VPH/Physiome History



Digital Agenda

1001100101011101110000100101010010

for Europe



Potential Market:

- **Pharmaceutical industry** (to shorten drug development, avoid animal testing, personalised drug)
- **Medical industry** (devices and imaging benefit from simulation)
- **Software industry** (development of models/simulators)

Expected impacts:

For all target outcomes

- More predictive, individualised, effective and safer healthcare
- Reinforced leadership of European industry and strengthened multidisciplinary research excellence in supporting innovative medical care



FP7-WP 2011-12 - Objective 5.2 VPH


- Target outcomes
 - Patient-specific predictive computer based models and simulation with focus on environmental factors
 - ICT tools, services and infrastructures to obtain more elaborate and reusable multi-scale models and larger repositories
 - Early demonstrators and proof of concept of digital representations of health status
- Call 9: open 18/01/2012 deadline 17/04/2012



Contact/Information


- DG Information Society and Media
Unit "ICT for Health"
http://ec.europa.eu/information_society/ehealth
- Calls information:
http://cordis.europa.eu/fp7/ict/participating/calls_en.html
- VPH projects' portfolio:
http://ec.europa.eu/information_society/activities/health/docs/projects/fp7/binder-fp7-vph-projects.pdf
- Virtual Physiological team:
 - Joël Bacquet (joel.bacquet@ec.europa.eu)
 - Amalia Vlad (amalia-irina.vlad@ec.europa.eu)
- email:
INFSO_HEALTH-CALL_9@ec.europa.eu

Digital Agenda
for Europe



Citizen empowerment & eGovernment

Digital Agenda
for Europe



Policy modelling


Societal simulations to forecast potential impacts of policies

- including non-classical economic and societal modelling;
- identifying emerging societal trends;
- building on previous research in the domain of reflexivity;
- advancing research in simulation and visualisation techniques, process modelling, gaming-based simulation, mixed reality technologies and crowd-sourcing techniques;

ICT tools enabling modelling the next generation of public services as complex service systems;

- analyse and model complex systems;
- monitoring societal trends resulting from economic environment;
- taking into account the needs of the younger generation;
- building on Web2.0/Web3.0, social networking, dynamics methodology and exploiting the vast reserves of public sector collective data.

Digital Agenda
1001100101011101100001002510-2020
for Europe




Research 2009-10

OCOPOMO
an integrated platform for efficient policy development by integrating **formal policy modelling, scenario generation and open collaboration** supporting the engagement of a wide range of stakeholder groups.

+Spaces
novel technologies and instruments that will allow government bodies to measure public opinion on a large scale by using **Virtual Worlds (VWs)** as testbeds for policy simulation.

IMPACT
formal, computational models of policy and arguments about policy, to **facilitate deliberations about policy** at a conceptual, language-independent level.

Digital Agenda
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for Europe




Roadmapping and Networking International co-operation

- Build on the considerable interest at international level (industrialised and emerging economies)
- Build a network of leading experts in government, industries and academia
- Collect and share the different experiences of implementing them in the developed countries


Contact: Aniyah.varghese@ec.europa.eu

Digital Agenda
for Europe



ICT for Sustainable Growth

Digital Agenda
for Europe



Green ICT

ICT enables energy reduction

- Teleconferencing/teleconferences: 390 Mn tons
- Optimised freight logistics & transport: 2.3Bn tons
- Reduced paper: 130Mn tons
- Process efficiency in manufacture: 970 Mn tons
- Smart Grid for energy: 2.4 Bn tons
- Energy efficient buildings: 1.7 Bn tons

By 2020, GeSI forecasts 15% global reduction in emissions by applying ICTs, some 7.8 Bn tons

ICT is ~8% of total electricity consumption [-15% by 2020]

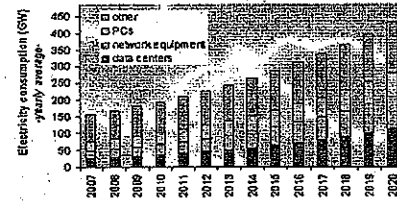
others
40 GW

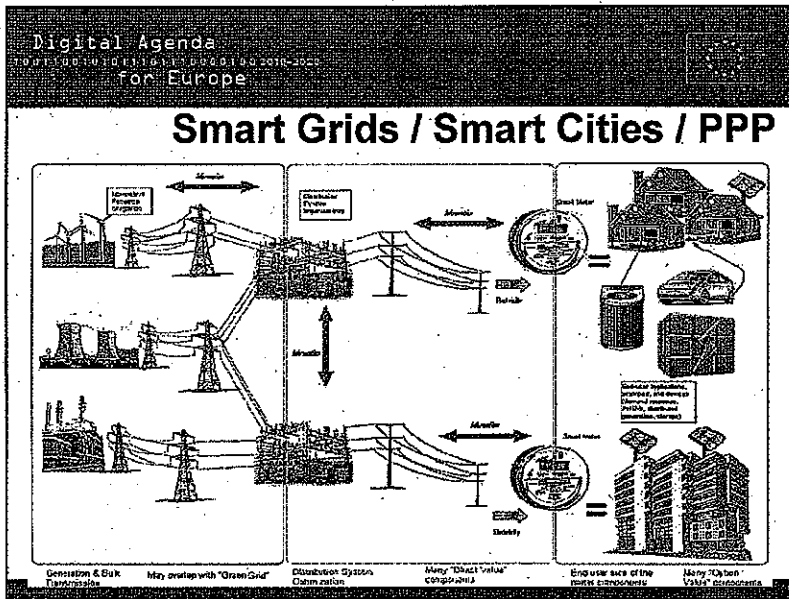
data centers
26 GW

network equipment
22 GW

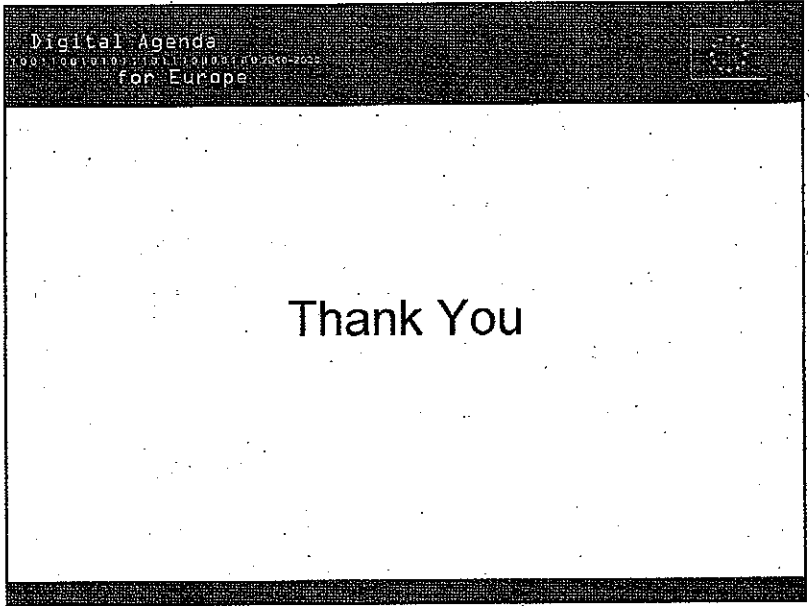
TVs
40 GW

PCs
28 GW





- Digital Agenda
1 0 0 1 1 0 0 1 0 1 0 1 1 0 1 1 0 0 0 0 1 0 0 2 0 1 0 - 2 0 2 0
for Europe
- Intelligent systems and integrated communication infrastructure that can assist in the management of the electricity distribution grids in an optimized, controlled and secure manner
 - integration of renewable energy sources
 - security and reliability
 - Data management infrastructures
 - Home energy controlling hubs
 - consensus on industry-driven open standards
 - ICT for Efficient Water Resources Management
 - Real-time monitoring and control on a wide scale
 - Integrated resources management incl. decision support
 - interoperable standards
 - Empowering users with real time information
 - Water smart meters
 - ICT for Energy-positive neighbourhoods
 - Addressing the dynamics of energy supply and demand in neighbourhoods
 - Management and control systems
 - Decision support systems
 - Beyond buildings
 - Integration of renewables
 - Connection to the electricity grid
- Contact: Merce.Griera-I-Fisa@ec.europa.eu



Common Strategic Framework for EU Research & Innovation

Beyond 2013: HORIZON 2020

Visit of Delegations from TAIWAN and from KOREA
Brussels, 19 Sep 2011

Carlos.Oliveira@ec.europa.eu

ISTAG INCO - 19 Sep 2011

Europe 2020 Strategy

- Objectives of **smart, sustainable and inclusive growth**
 - headline targets including 3% of GDP invested in R&D
- Includes the **Digital Agenda for Europe** flagship
 - ICT research and innovation as a central pillar
- Includes the **Innovation Union** flagship
 - key conditions to make Europe attractive for research & innovation
- Includes the **Industrial Policy** flagship
 - ICT as a Key Enabling Technology
- Innovation endorsed by February 2011 European Council as key to future growth and jobs

ISTAG INCO - 19 Sep 2011

Why a Common Strategic Framework? - Increasing IMPACT -

- **FROM** different priorities in each programme and initiative
 - **TO common strategic priorities**, focusing on societal challenges, competitiveness and research excellence
- **FROM** gaps between the stages (R&D, demonstration, piloting, market uptake ...)
 - **TO coherent support for projects and organisations** across the innovation cycle

ISTAG INCO – 19 Sep 2011

Why a Common Strategic Framework? - Achieving SIMPLIFICATION -

- **FROM** a large variety of funding schemes within and between programmes
 - **TO a rationalised toolkit of funding schemes** across the CSF
- **FROM** different rules in each programme and initiative
 - **TO more standardised rules** across all initiatives – which meet the different needs and with flexibility where needed
- **FROM** multiple websites, guidance documents, applications
 - **TO common entry point**, one stop shop, common IT platform

ISTAG INCO – 19 Sep 2011

Financial Support to DAE Actions (MFF)

Research and innovation

- Earmarking of ICT Research & Innovation activities plus eInfrastructures in a Common Strategic Framework (CSF) for R&I
 - €2.1 billion in 2014 + 5% annual increase for ICT R&I
 - €200 million in 2014 + 10% annual increase for e-Infrastructures

Infrastructure - connecting Europe

- Earmarking of support to ICT Infrastructures of the Future
 - €1 billion/year for deployment of high speed broadband networks
 - €400 million/year for deployment of digital service infrastructures

Dedicated support to the DAE in cohesion funds

In addition

- e-Communications and Audiovisual and media policy support
- Institutional obligations in relation to ENISA and BEREC

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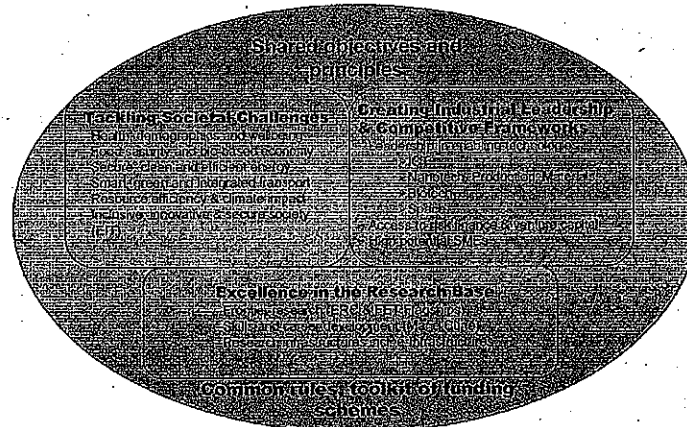
CSF/H2020 Architecture (I)

Three block architecture as basis for clear priority-setting and focusing of activities

- With flexibility to use full toolkit of funding schemes
- INFSO management of generic ICT R&I + e-Infrastructures
- Co-management of societal challenge specific ICT R&I
- Co-management of FET Flagships

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CSF/H2020 Architecture (II)



ISTAG INCO - 19 Sep 2011

ICT industrial and technological leadership challenges

1. "A new generation of components and systems" – Micro, nanoelectronics and photonics tech., components and embedded systems engineering
2. "Next generation computing" – Advanced computing systems and technologies
3. "Future Internet" – infrastructures, technologies and services
4. "Media technologies and information management" – ICT for digital content and creativity
5. "Advanced interfaces and robots" – Robotics and smart spaces

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ICT-based solutions linked to major societal challenges

It is expected that the big themes will be able to cover the full range of needs.

These would include industrial leadership in the ICT-based solutions, products and services linked to major societal challenges, and will cover application-driven ICT research and innovation agendas.

- ICT-based solutions to all societal challenges
- ICT tools for
 - design, engineering, prototyping and manufacturing
 - digital lifestyle including information, entertainment, skills building, and access to public services

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Societal challenges

- **Health demographic** change and **well being**
- **Food security, sustainable agriculture** and the **bio-economy**
- Secure, clean and **efficient energy**
- Smart, green and integrated **transport**
- **Climate action** and resource efficiency, including raw materials
- **Inclusive** innovative and **secure societies**

ISTAG INCO – 19 Sep 2011

附件四、技術處簡報

Industrial Innovation System in Taiwan


Wen-Hsin Chan Ph.D.

Department of Industrial Technology, MOEA Taiwan

Sep. 19, 2011

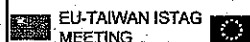

 EU-TAIWAN ISTAG
MEETING 

Contents


 A Glance at Taiwan's Industrial Innovation

Taiwan's Industrial Innovation System

Synergizing EU-Taiwan Strength to Achieve Horizon 2020



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A Glance at Taiwan's Industrial Innovation

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Why Taiwan Matters

Cooperation Model with MNCs

 Design, Assembly & Production
 Design, Assembly, Production, Global Logistics & After-Sale Services

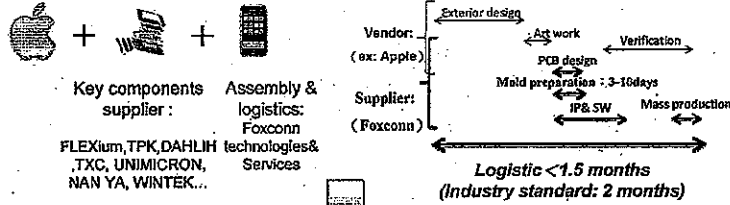


	Innovation of key component	65%	50%	65%
		LCD, keyboard, chassis, AC adapter and wireless LAN module, etc.		
	System integration	Compal, Wistron	Quanta, Foxconn	Quanta, Inventec
		98.2 (98% shipment in two days) global logistics services		
	Logistics hub (% of system product)	95%	100%	95%

Smart Brains behind the Smartphones

《Well-established
supply chain》

《World-leading
commercialization process》



iPhone phenomenon
Apple's profit represents 50% of total mobile industry

Source: MIC/II, Nov. 2009

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Taiwan Inside®

Innovation + Global Supply Chain Management

The Speed of Taiwan ICT Production...

- ◆ Every 0.2 second produce a WLAN
- ◆ Every 0.2 second produce a Motherboard
- ◆ Every 0.3 second produce a LCD Monitor
- ◆ Every 0.3 second produce a Mobile Phone
- ◆ Every 0.3 second produce a Notebook Computer
- ◆ Every 0.4 second produce a Optical Disk Drive.
- ◆ Every 0.6 second produce a Digital Still Camera
- ◆ Every 0.7 second produce a Desktop Computer
- ◆ Every 3.7 second produce a CDT Monitor
- ◆ Every 10.7 second produce a Server



- ◆ 85% of PCs with Windows® OS are produced by Taiwanese IT companies
- ◆ 80% of WW data communications equipment is produced by Taiwanese networking companies
- ◆ "Taiwan Inside®" would probably be the most suitable description of Taiwan's vitality and its position in the worldwide ICT industry

Source: MIC/II, April 2009

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International Competitiveness MIT Products

☆ High technology manufacturing Industry with the fast development

- ❖ The production value of the Flat Panel Display Industry has been exceeded NT\$1 trillion, and the production value of the Panel Industry is the Top 2 in the world.
- ❖ The production volume of the Synthetic Fiber Industry is the Top 3 in the world. (Only behind the Mainland China and India)
- ❖ The production value of the Semiconductor Industry stands the fourth in the world. (IC Foundry, IC Packaging, and IC Testing Top 1; IC Design Top 2)

☆ The World's Top Three MIT Products in 2010

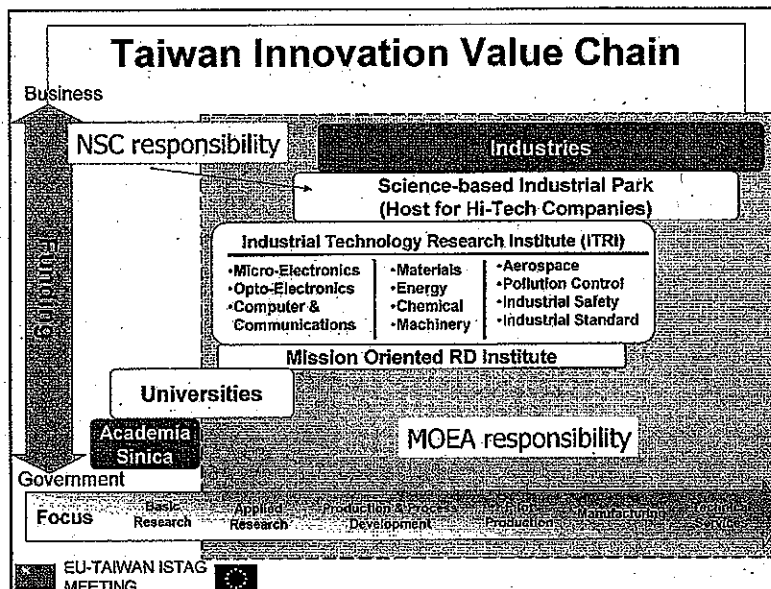
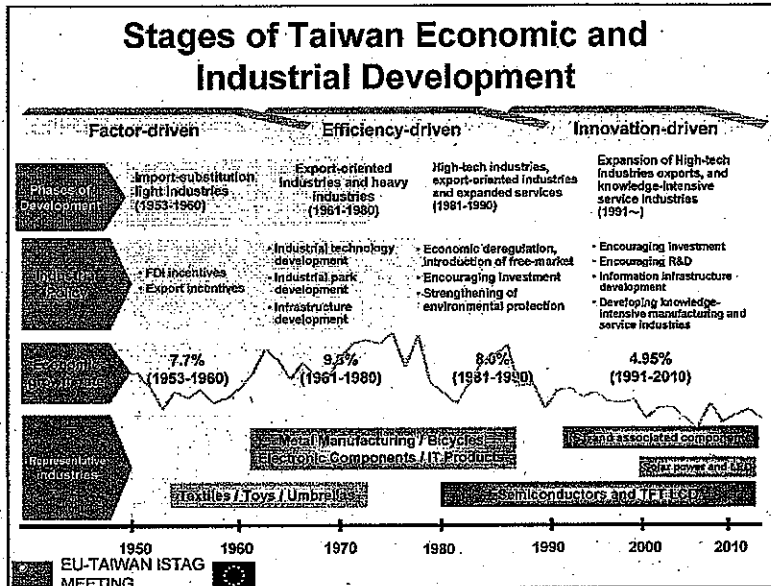
Top One			
IC Foundry · Mask ROM · IC Packaging · IC Testing · Optical Disc · ED Foli · Chlorella		LCD Monitor* · Motherboard* · Server* · Desktop PC* · Netbook* · Notebook PC* · PND* · WLAN* · DSL CPE* · Cable CPE* · Glass Fiber* · Golf head* · ABS* · Instant Noodle* · Power wheelchair & Power scooter*	
Top Two		Top Three	
IC Design · Large size TFT-LCD Panel · Small & medium size TFT-LCD Panel · TN/STN-LCD Panel · OLED Panel · IC Substrate · Crystalline silicon solar cell	PCB* · DSC* · PTA* · TPE*	DRAM · Polyester Filament · Nylon Fiber · PU Leather · β -Carotene	LED* · MSG*

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Notes: * including offshore production; PTA and TPE are calculated based on capacity.
Source: MOEA, Industrial Technology Information Service (ITIS) Program, May 2011.

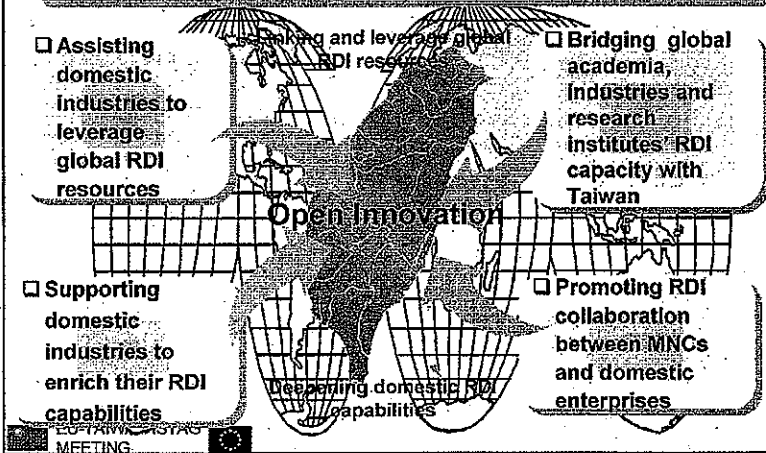
Taiwan's Industrial Innovation System -And the role of DoIT (Department of Industrial Technology)

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Innovation Policy of DOIT / MOEA

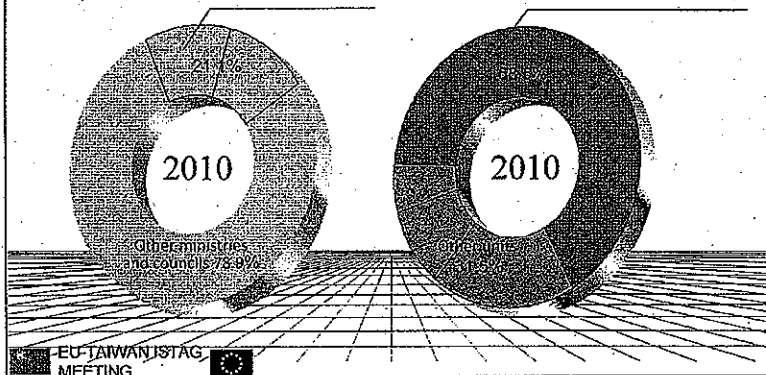
Creating an open RDI environment through deepening capabilities and expanding global linkage



DoIT's R&D Expenditures

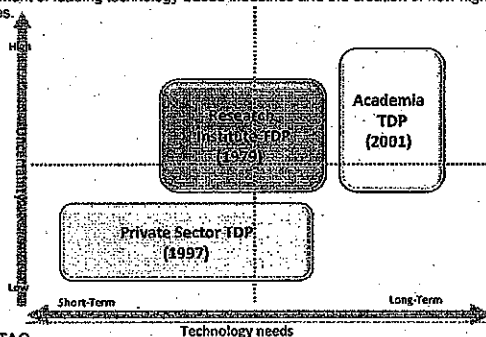
• DoIT expenditure on technology R&D accounts for 21.1% of all central government expenditure on technology R&D.

• DoIT expenditure on technology R&D accounts for 68.5% of all MOEA expenditure on technology R&D.



DoIT's Policy Tools

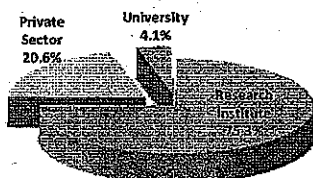
- **Research Institute TDP** is responsible for the implementation of industrial technology R & D with key importance, foresight prospects, and commonality, while improving the R & D environment and infrastructure required for the development of industrial technology.
- **Private Sector TDP** is mainly for assisting domestic enterprises to develop technology for commercialized production to enhance industrial added value.
- **Academic TDP** develops forward-looking, innovative industrial technology, promotes the development of leading technology-based industries and the creation of new high-tech industries.



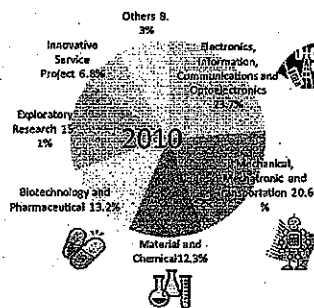
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DoIT's R&D Budget and Resource Allocation

- ❖ The total budget for Technology Development Programs (TDPs) in 2010 allocated by the DoIT was USD 618.1 Million, and research institute TDPs account for 75.3%.
- ❖ As for the budget allocation for these research institute TDPs, R&D on critical technologies such as electronics, information, communications and optoelectronics account for 23.7%.



2010 DoIT's R&D Budget
USD 618.1 Million



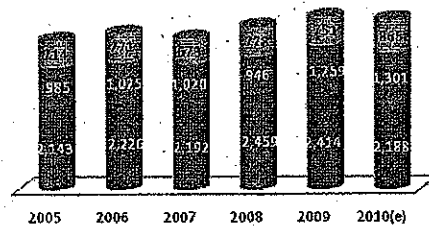
Allocation of TDP Funding Resources

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Achievements of Research Institute TDP Growth in Patents Output

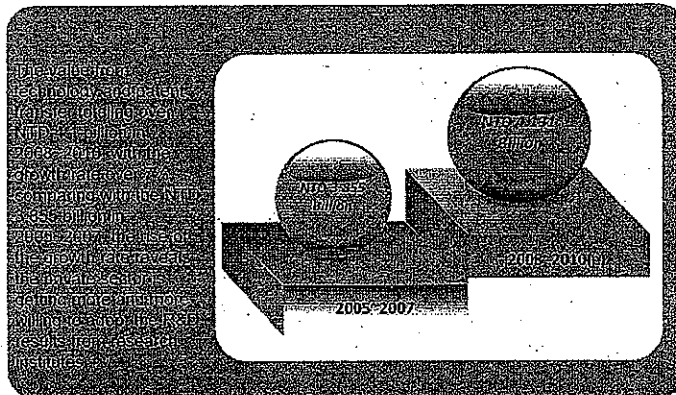
- In the past 6 years, the number of patent applications has exceeded 2,000, with on average 1,000 patents granted each year.
- The number of patent filed has increased from 714 in 2005 to 865 in 2010, with average growth rate of 5%.

■ Patents Applied ■ Patents Granted ■ Patents Filed



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Achievements of Research Institute TDP Growth in Technology and Patent Transfers

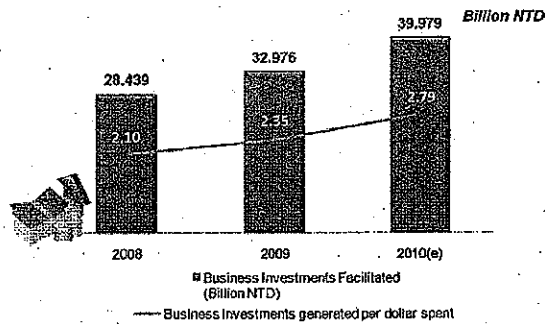


Note: the value above is calculated based on 3-year average exchange rate released by the Central Bank of the Republic of China (Taiwan)

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Achievements of Research Institute TDP Facilitation Business Investment

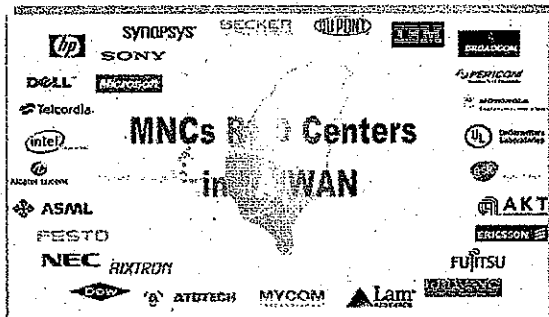
- In the period from 2008-2010, business investment value totaling over NTD 101.4 billion have been facilitated.
- Business investment value has substantially increased as every one dollar spent in 2010 resulted in 2.79 dollars from 2.10 dollars in 2008.



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MEETING

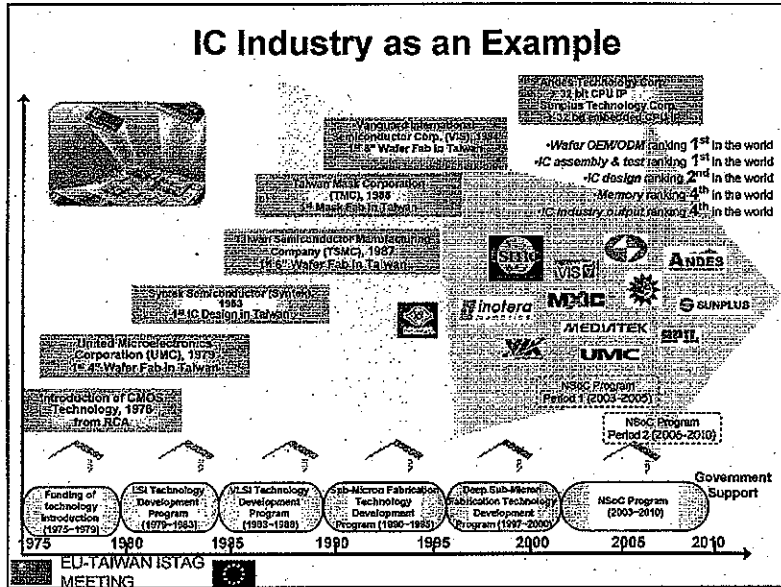
Achievements of Private Sector TDP

The "Promoting R&D Centers Establishment in Taiwan Program" was implemented to introduce international innovative resources to Taiwan, so as to influence and complement local industries. So far, we have successfully facilitated the establishment of 125 domestic R&D centers, as well as 48 R&D centers by 33 international companies, including HP, SONY, DELL, Microsoft and IBM in the communication and photoelectric fields, ASML and Festo in the machinery and transportation fields, DuPont and DOW in the material and chemical fields and GSK in the biomedical field.



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MEETING

*Statistics updated in December 2010



Achievements of Research Institute TDP

R&D100 Awards & Technology Innovation Awards

2010

FlexUPD technology

- Key breakthrough is use of a non-adhesive de-bonding layer which helps remove plastic substrate thinner than 0.01cm from glass platform.
- It allows flat panel computer and other become as thin as paper.

2010

2D/3D switchable display technology (2D/3D)

- Integrates 2D and 3D information content on the same screen visible to the naked eye.
- 2D texts keep clear while moving 3D images for optimal viewing experience.

2010

REBDEX fire resistant material

- Key breakthrough is the flexible polymer component that resists flame up to 900°C.
- Does not release toxic halogen sulfide or phosphor components and no toxic gas is generated when exposed to fire.
- Used in Coatings, thin film, tube sheet and fabric.

2009

Flexible Speaker

- The speaker is only 0.1cm thin and flexible.
- High efficiency and quality.
- Suitable for cell phone, 3C products, shopping malls and plant billboards Ads.

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Promotion of TDP - Strategic Focuses

Intelligent Technology

- Promote telemedicine applications and services
- Strengthen three-dimensional integrated circuits (3DIC) component manufacturing and system integration technology
- Promote new experience for smart life technology application (236)

Manufacturing Sophistication

- New-age intelligent factory control system development program
- Metal component sophistication device development program
- Key techniques for emerging industrial mechanics development program
- Combine R & D capacity of research institute and academia to promote local industrial innovation, technological development of SMEs, and traditional industry upgrade
- Develop 10 important basic industrial technologies



Green Technology

- Develop high-safety lithium-ion batteries to accelerate the development of intelligent cars
- Promote domestic electric car R & D alliances and industrial clusters
- Develop new generation of electricity storage components and system technology
- Develop thin film solar energy manufacturing processes and equipment

Health and Well-being


- Develop decentralized health care according to local conditions
- Establish rapid prototype medical equipment service centers (RPC)
- Promote internationalization of the generic drug industry
- Develop high-end visual medical equipment

Service Innovation

- Cloud computing system and application service technology development program
- Technological service value chain research and promotion program

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Synergizing EU-Taiwan Strength to Achieve Horizon 2020

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Europe 2020. Seven flagship initiatives

Smart Growth	Sustainable Growth	Inclusive Growth
Innovation <i>« Innovation Union »</i>	Climate, energy and mobility <i>« Resource efficient Europe »</i>	Employment and skills <i>« An agenda for new skills and jobs »</i>
Education <i>« Youth on the move »</i>	Competitiveness <i>« An industrial policy for the globalisation era »</i>	Fighting poverty <i>« European platform against poverty »</i>
Digital society <i>« A digital agenda for Europe »</i>		

EUROPEAN COMMISSION

EU-TAIWAN ISTAG MEETING

Envisaged Collaboration Opportunities in ICT Field

Smart Living	Future Factories	Public QoS	Green ICT Solutions
<ul style="list-style-type: none"> • Network & Service Infrastructure: Internet of Services, Internet of Things, Trust & Security, Future Media Internet • Cognitive Systems & Robotics • ICT for Health, Ageing Well, Inclusion & Government & Public Services • PPP Energy Efficient Buildings • PPP Future Internet • AAL JTI • ENIAC JTI • ARTEMIS JTI • EU Lead Market eHealth 	<ul style="list-style-type: none"> • ICT for Enterprise & Manufacturing • PPP Factories of the Future 	<ul style="list-style-type: none"> • ICT Components & Systems: Nanoelectronics, Microsystems, Embedded Systems & Control, ICT for Transport, Photonics 	<ul style="list-style-type: none"> • ICT for Low carbon Economy • PPP Energy Efficient Buildings • PPP Green Cars
EIT - ICT-KICS			
ICT Standardization			
Future Emerging Technologies			
SARAS & SRAs			
9 ICT ETFS - JTI			
EU Collaborative R&D Programmes & Innovation Initiatives: FP7, EUREKA, PPPs, CIP, etc.			
National R&D Programmes			

EU-TAIWAN ISTAG MEETING