

# EU industrial technologies strategy and “guidance” for Finland

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- Europe needs to pursue strong industrial base and address critical changes and challenges
- FP7 can help
  - To address European paradox and promote industrial transition
- What we already do in industrial research (Nano, Materials, Production – NMP)

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- Industrial production and manufacturing remain central in wealth generation in Europe.
- Growing interdependence between
  - Competitive service-based economy
  - ...and...
  - Competitive industry-based economy (1 job in manufacturing → 2 jobs in service)

## European Specificities

- Europe does not **invest** enough in RTD especially in **industry**
- Europe needs to be stronger in **transferring results into marketable innovation**

## FP7 to prepare industrial transition

- Industrial transition: use less increasingly costly resources (since 2004 oil prices X4 , gas or steel X2, coal and iron by 3)
  - >ie minimise, recycle, reuse, reskill
- Move towards knowledge based industry where Europe can have competitive advantage by achieving simultaneously the 3 Lisbon objectives:
  - competitiveness
  - sustainability
  - social dimension

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## FP7 – addressing the “European Paradox”

- Brings industry, academia, & research centres together in multi-partner collaborative research projects
- Encourages industry to invest more in research (shared cost approach)
- Complements other instruments to strengthen research-industry link (ETPs, JTIs)
- Stimulates Research-innovation link and market uptake (ERC, Lead markets, RSFF)
- While preserving potential for breakthrough

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## Strengthening links for industry European Technology Platforms

- Bottom-Up Approach with **Industry in lead** on strategically important issues for Europe's future growth & competitiveness
- Wide Stakeholder Involvement
- EU Role: Facilitating and Guiding but not Leading or Owning
- Around 30 TPs linked to the NMP theme
- **Majority** of TP "Strategic Research Agendas", where appropriate, are taken into account in Themes of FP7 – particularly in Theme 4 "NMP"
- A **very few** Strategic Research Agendas: Identified with industry according to specific criteria may become "**Joint Technology Initiatives**" – *much larger commitment*

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## Strengthening links for industry Joint Technology Initiatives

- A new approach to establish **public-private partnerships** in research at European level
- 6 chosen of which 4 signed:
  - ARTEMIS (Embedded systems)
  - IMI (Innovative medicines for the Citizens of Europe)
  - Clean Sky (Aeronautics and air transport)
  - ENIAC (Towards new nanoelectronics approaches) & 2 under negotiation
  - Hydrogen & fuel cells for a Sustainable Energy future
  - Global monitoring for Environment & Security

- Potential for new JTIs

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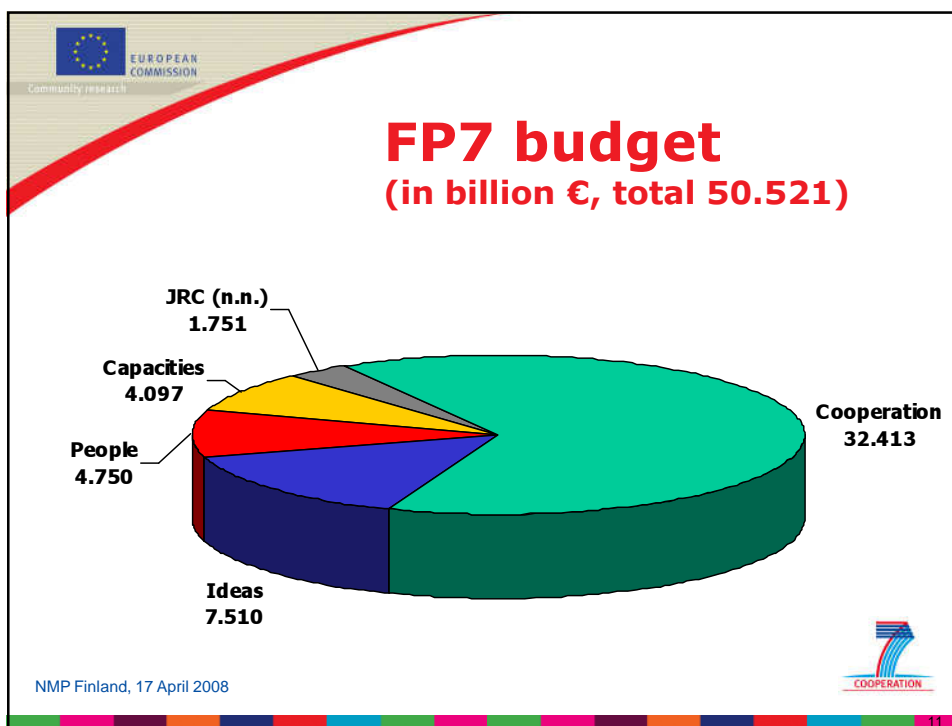


## ..while improving potential of basic research

- NMP domains can benefit from step change research
- Partly within NMP (1 or 2 « open » topics with application potential)
- Primarily within ERC or IST FET

## What we already do in NMP

- Make optimal use of FP7 opportunities
- Reinforce links to industry (including SMEs)
- Strengthen exploitation potential




 EUROPEAN COMMISSION  
 Community research

## FP7 – SP Cooperation

### 10 Themes

	(€ million)
1. Health	6 100
2. Food, agriculture and fisheries, and biotechnology	1 935
3. Information and communication technologies	9 050
4. Nanotechnologies, materials and production	3 475
5. Energy	2 350
6. Environment	1 890
7. Transport	4 160
8. Socioeconomic research	623
9. Space	1 430
10. Security	1 400
<b>Total</b>	<b>32 413</b>

\* Not including non-nuclear activities of the Joint Research Centre: €1 751 million

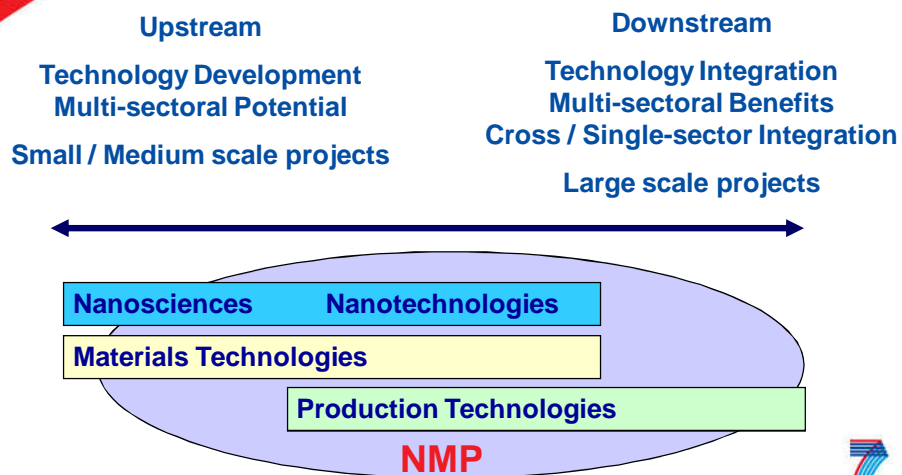
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## Structure of NMP theme activities

- 4.1. Nanosciences and Nanotechnologies
- 4.2. Materials
- 4.3. New Production
- 4.4. Integration of technologies for industrial applications

## NMP Strategic Framework NMP – Technology coverage



## Nanosciences - nanotechnologies

### 4.1.1 Nanosciences and converging sciences

Development of new knowledge at the nano scale to open new horizons in collaboration with other scientific fields (bio, physics, chemistry, math, environmental, social, engineering, etc.)

### 4.1.2 Nanotechnologies and converging technologies

Promote industrial innovation towards new products, services, components, devices, systems and manufacturing processes through an inter-disciplinary approach.

### 4.1.3 Impacts on Health and the Environment

Support the scientific assessment of potential health and environmental risks associated with nanotechnology-based materials and products at the earliest possible stage.

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### 4.2.1 Mastering nano-scale complexity in materials

### 4.2.2 Knowledge-based smart materials with tailored properties

### 4.2.3 Novel biomaterials and bio-inspired materials

### 4.2.4 Advances in chemical technologies and materials processing

### 4.2.5 Using engineering to develop high-performance knowledge-based materials

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## Activity 4.3 New Production

- 4.3.1 Development and validation of new industrial models and strategies**
- 4.3.2 Adaptive production systems**  
Develop agile production systems
- 4.3.3 Networked production**  
Develop the tools and methods for cooperative networked production
- 4.3.4 Rapid transfer and integration of new technologies into the design and operations of manufacturing processes**
- 4.3.5 Exploitation of the convergence of technologies**  
Stimulate the creation of new industries

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## Main features of NMP process

- **Tough competition in NMP** because of wide coverage of topics and sectors
- 10 times more applications than funded projects
- **Strategic use** of funding schemes (one funding scheme per topic)
- Calls by **funding scheme**
- 2-stage approach for collaborative projects (Small, Large, SME)
- Single stage approach for coordination and support actions (CSAs)

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## Strengthening importance of industry in NMP

- Industrial relevance of topics – in “specific features” of 2/3 of topics in W.P.
- A third of expert evaluators from industry
- We have a collaborative project funding scheme for SMEs - 35% of EU funding for SMEs
- Stimulate industrial exploitation from outset of projects (ESIC seminar service)

## Exploitation Strategy Seminars

- Aimed at **identifying and addressing potential obstacles** to the exploitation of project results
- Consists of a **project risk analysis** by a specialised contractor and a (1 day) brainstorming **seminar** (contractor + project partners)

## International cooperation in NMP

- Competition for collaboration at world level (sharing knowledge, resources...)
- But while preserving European industrial interest
- Need to define mutual interest with industry (upstream research far from IPR, Health & Safety impacts, sound S&T for standards, regulations etc)
- How far and with which boundary conditions can we cooperate on more downstream activities?

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## Theme 4 information

- Cordis NMP activity service - **Calls info!**  
[http://cordis.europa.eu/FP7/cooperation/nanotechnology\\_en.html](http://cordis.europa.eu/FP7/cooperation/nanotechnology_en.html)
- Industrial Technologies website  
[http://ec.europa.eu/research/industrialtechnologies/index\\_en.html](http://ec.europa.eu/research/industrialtechnologies/index_en.html)
- Commission Nanotechnologies homepage  
<http://cordis.europa.eu/nanotechnology>
- New theme 4 enquiry service (helpdesk)  
<http://ec.europa.eu/research/enquiries/>



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