

European Strategy on Key Enabling Technologies (KETs)

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Key Enabling Technologies (KETs)

Importance of KETs

- **Driving force** of the development of future goods and services
- Being at the forefront of competitiveness, innovation, **knowledge-based economy**.
- **Modernisation of the industrial base** and in the further **strengthening of the research base**
- Creating related **eco-systems of SMEs**.

Defining KETs

- **Knowledge intensive** (high R&D and capital expenditure)
- Associated with **highly-skilled employment**
- **Multi-disciplinary**, cutting across many technology areas, converging
- Create **multiplier effects**
- Enabling process, good and service **innovation** and are of **systemic relevance**.



Importance of a strategic approach

- EU has good R&D capacities in some KETs, but is not as successful in commercialising these results.
- Several MS & other regions have started to identify enabling technologies that are relevant to their future competitiveness. But there are **differences between MS** on what should be regarded as KETs and there is **no shared understanding** of importance of KETs
- A more **strategic approach is required** to deploy these technologies in the EU.
- Conclusions of Competitiveness Council of 28/05/09 “welcomed the Commission’s initiative to develop a proactive policy for enabling high-technologies”.

COM(2009)512*

- Tries to identify the KETs that strengthen the EU’s industrial and innovation capacity to address the societal challenges ahead and
- proposes a set of measures to improve the related framework conditions.

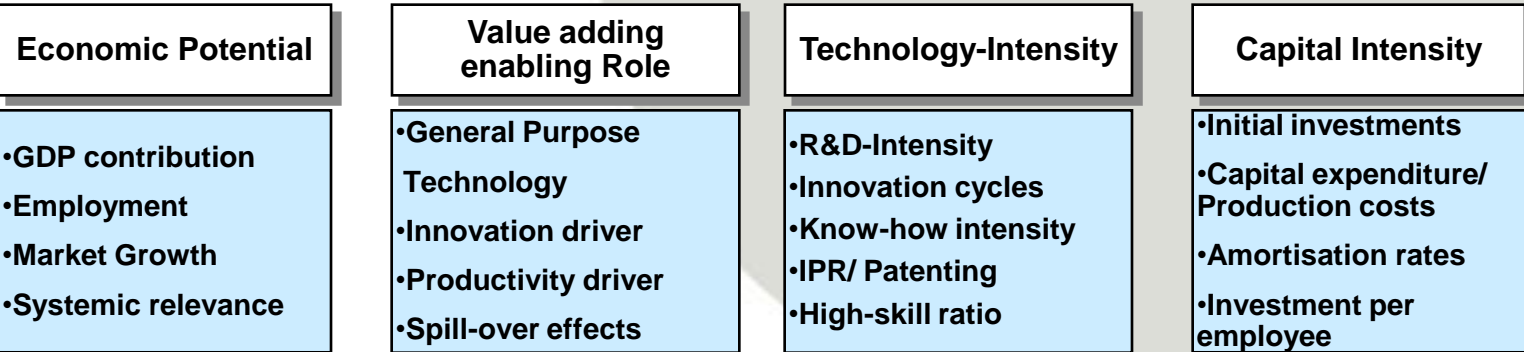
*The COM is complemented by the Staff Working Document SEC 2009(1257)



Performance Indicators to select KETs

Initial selection

Screening of the common high-tech areas at Member State-level



Economic criteria

Based on objective criteria most promising examples of KETs can be selected



Identifying KETs

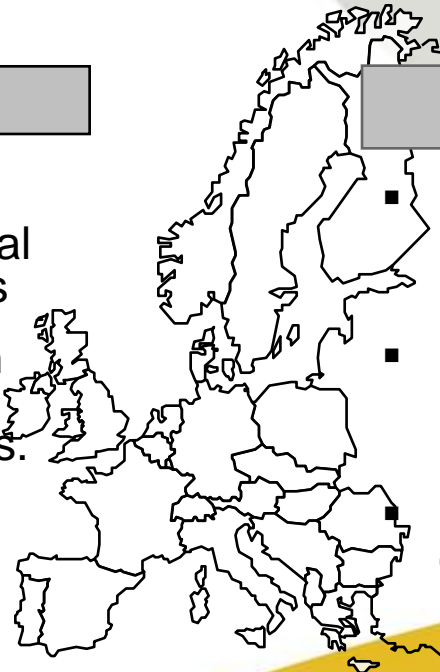
- **Nanotechnology** holds the promise of leading to the development of smart nano and micro devices and systems;
- **Micro- and nanoelectronics**, including semiconductors, are essential for all goods and services which need intelligent control;
- **Photonics** provides the technological basis for the economical conversion of sunlight to electricity which is important for the production of renewable energy;
- **Advanced materials** such as lightweight materials facilitate lowering the carbon footprint and energy demand as well as limiting the need for raw materials;
- **Biotechnology** brings cleaner and sustainable process alternatives for industrial and agri-food operations

Strengths

- Good industrial base, e.g. advanced materials for chemical automotive, space, aeronautics
- Significant research strength in nano and micro electronics, industrial biotech and photonics.

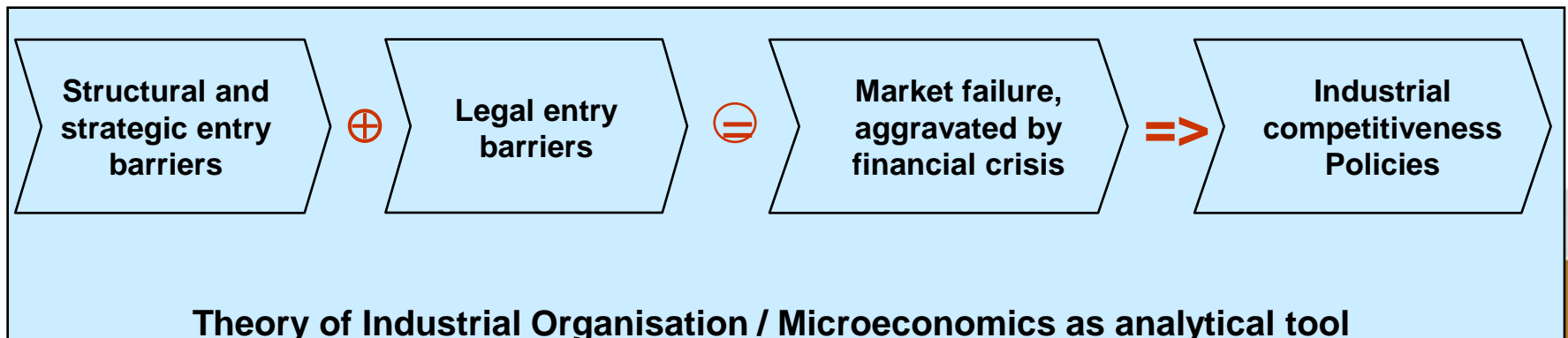
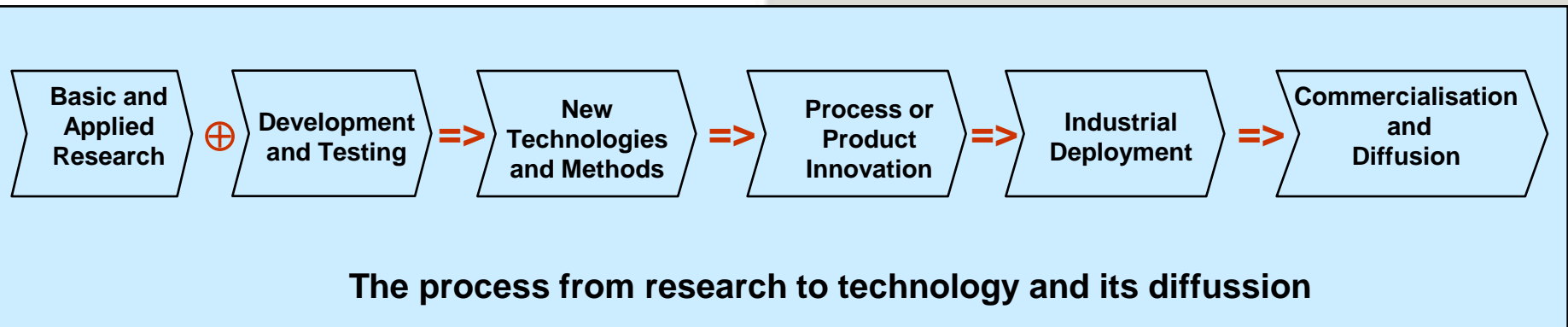
Weaknesses

- R&D intensity in high-tech manufacturing is only 25% in the EU (US: 30%)
- high tech share within total manufacturing industry is 50% larger in the US than in Europe
- Potential of industrial deployment of KETs is largely untapped



Basic Concept for the analysis of industrial competitiveness

A simplified method to strategically assess industrial competitiveness policies by forward-looking and backward induction...



Focusing on policies for an effective deployment of KETs (1/2)

Focus on innovation rather than R&D

- Reinforcing publicly supported programmes for close to market innovations

Commercialisation of R&D is not effective

- Increase the focus on technology transfer and EU-wide supply chains

Fragmentation of EU policies

- A more strategic and co-ordinated approach to R&D: Increased focus on joint research programmes and demonstration projects

State Aid

- Consider the case of KETs in Review of Community Framework for State aid for research, development and innovation in 2010

Weak link with Climate Change

- Better linking of industrial deployment of KETs with societal challenges, such as climate change policies



Focusing on policies for an effective deployment of KETs (2/2)

Non-focused demand policies

- Provide a more targeted approach for demand of KETs (Lead Market Initiative and public procurement)

Weak account of International dimension

- International comparison of high-tech policies and enhanced international cooperation

Distorted intern. trade conditions

- Ensure level playing field, i.e. avoid international market distortions, improve IPR protection, reduce the use of subsidies and use bilateral and multilateral agreements

Low access to venture capital

- Stimulate increased finance for KETs directly or through EIB.

Shortage of skilled labour

- Develop adequate skills (e.g. new innovation skills to be included in the Innovation Action Plan)



The Way Forward

Short Term

- Better application of existing state aid rules
- Trade: Ensure level playing field
- Improve access to finance
- Reinforce existing initiatives on KETs

Long Term

- Establish a high level expert group
 - Assess competitiveness situation of KETs focusing on deployment
 - Analyse R&D capacity
 - Propose policy recommendations

Shared long term vision

- Need to create a **shared long term vision and partnership** between Commission and Member states and industry and Key stakeholders.
- Invite Member States to agree on **importance of KETs** and support the orientation included in the Communication.



The anticipated Composition the HLG

To work effectively, the total size of the HLG will be around 25 members, each nominated in a personal capacity, with the following composition:

President

Technologies

- 12 representatives of the relevant European industries (5 KET areas; carbon capture and storage; advanced manufacturing systems)
- 3 representatives of downstream industries.

Research

- 4 representatives of the applied research community

Member States

- 3 representatives of Member States, which have strong R&D and industrial capacities in KETs.

Others

- 1 representative of the EIB with experience in venture capital.
- 1 representative of SMEs



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