

# **INTEGRATION OF NANOSCIENCES AND NANOTECHNOLOGIES INTO THE ERA: are ERA-Nets real assets ?**

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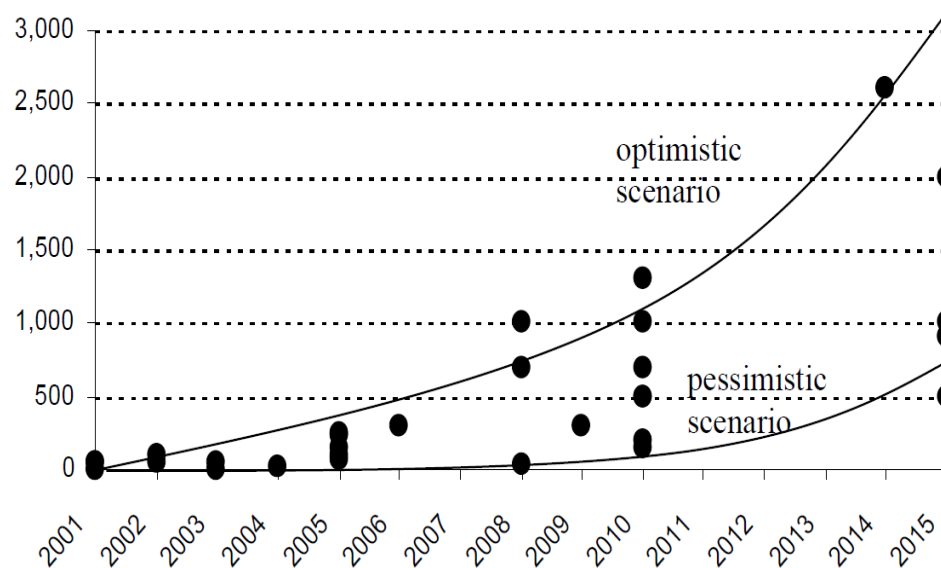
**Coordinator of the EuroNanoMed ERA-Net initiative  
Mirror Group Chair of the ETP in Nanomedicine**

- **Huge range of applications**
  - **Materials,**
  - **Electronics,**
  - **Pharmaceuticals + Healthcare**
  - **Chemical processing**
  - **Aerospace**
  - **Sustainable processes**
  - **others**

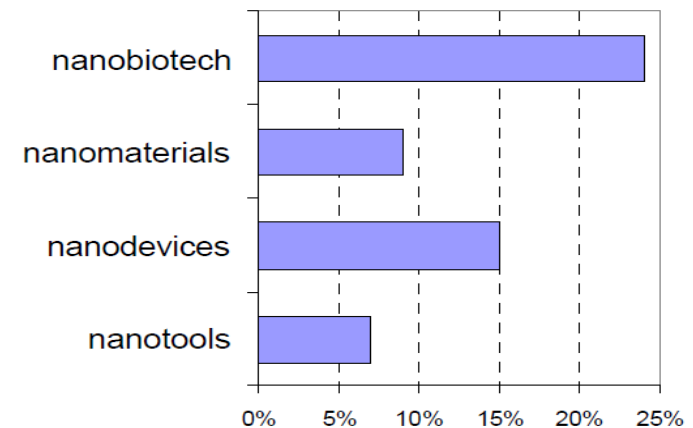


**Potential impact  
on economy**

(A; Hulleman, Nov 2006)

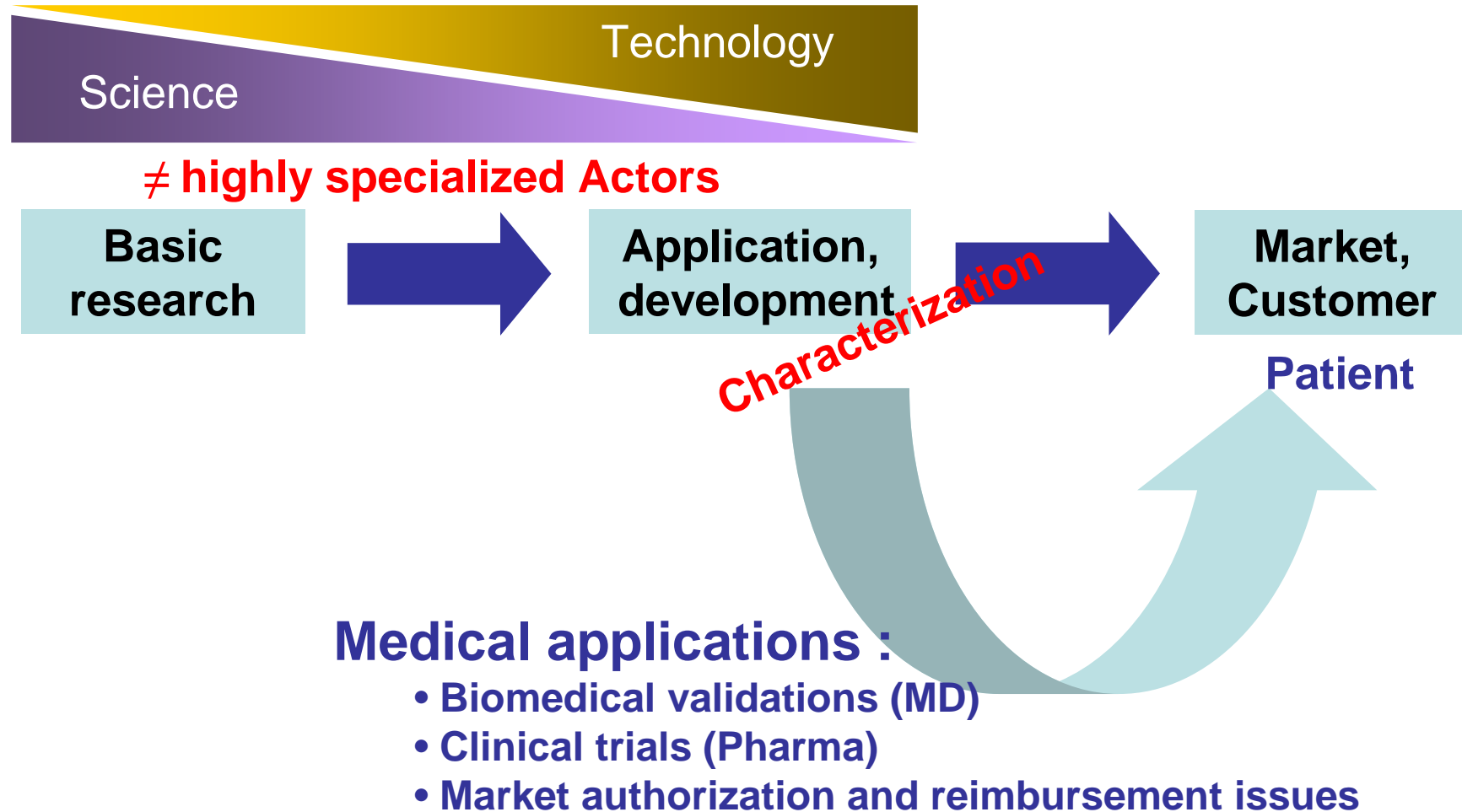


World market forecasts for nanotechnology in billion US Dollar



average annual growth rate 2002-2006 in %.

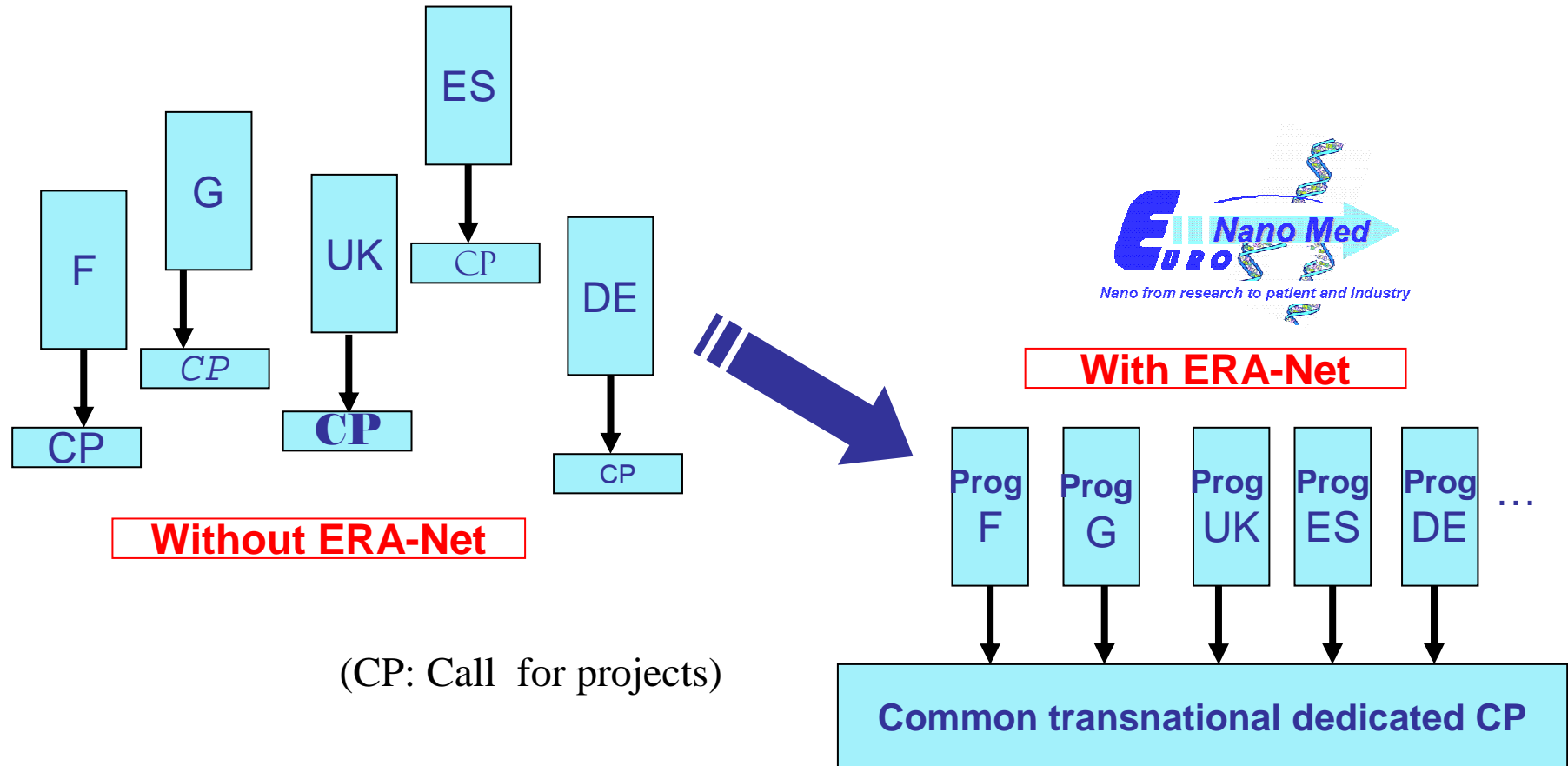
- **Economy: potential impact on the GDP growth**
- **Health : improve public health and welfare**
- **Day to day life of citizen : unpredictable changes today**



- **Fostering a Multidisciplinary approach means**
  - ☞ to promote and support **co-operations and partnerships**
    - National level
    - European level
  - ☞ within a policy covering a **significant period of time**

- **Type of Programs supporting RTD in Nano**
    - **National programs and calls**
    - **FP programs**
      - Thematic calls for proposals
      - ERA-Net and ERA-Net+
    - **Technology Platforms**
    - **Joint technology initiatives**
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# Principle of the ERA-Net Scheme



- € : - EC supports the coordination costs. Each national program supports its national partners within the selected projects
- ERA-Net plus : top up of the EC on the call budget

# Existing type of tools and programs supporting RTD in Nano

Type of program	Example	Target / scope	Comment
National		Variable (basic /applied)	<ul style="list-style-type: none"> <li>- No support for transnational partnerships</li> <li>- Nano "border line " in large or "generic" programs</li> </ul>
European (FP7)	FP7 thematic calls under NMP and Health auspices	Variable	<ul style="list-style-type: none"> <li>- Narrow focus</li> <li>- Lack of medium/long term programming</li> <li>- Often, considered as "heavy" by applicants</li> </ul>
	ERA-Nets /ERA-Net + ( NanoSci-EPlus, Era-Chemistry EuroNanoMed, MNT-ERA.II, AceNet...)	Calls + other: Basic  Applied	<ul style="list-style-type: none"> <li>- Flexible and reactive for call applicants</li> <li>- Medium/long term programming</li> <li>- At least a virtual common pot</li> <li>- If large number of partners : Initiate the momentum...</li> <li>- ERA-Net+: a strategy based on one call: no long term vision and very heavy for partners</li> </ul>
EC : Technology Platforms	ETP Nanomedicine	Applied (Industry driven)	<ul style="list-style-type: none"> <li>- A vision, a policy, a network, a strategic research agenda, application and needs driven...</li> <li>- but no funding to support it</li> </ul>
EC: Joint Technology Initiative	ENIAC	Calls + other: Applied (Industry driven)	<ul style="list-style-type: none"> <li>- Appropriate for "mature fields" where innovation breakthroughs are beneficial for all the actors (≠ medical )</li> <li>- A common pot</li> </ul>

## Complementary tools

- **ERA :**
  - **A community of actors addressing all development steps of innovation, partnering and networking**
  - **The willingness from (some) MS to develop a specific field supporting common transnational RTD programs, calls and multidisciplinary approaches**
  - ↳ **leverage effect in the calls :**  
**[€ EC/ € national funding]**



# Toward ERA in Nano: partnering-networking

TOOL	Community of networking actors
FP7 Thematic calls	++ but in mosaic
ERA-Nets and ERA-Net+ calls	++ (1 Science driven, others being application driven)
Platforms	++ (application driven)
JTI	++ (application driven)

- FP thematic calls have created in the different fields a community of actors, networking,
  - ➔ A **first step** toward a real ERA , but ≠ ERA
  - ➔ **ERA-Net may create the 2nd step**: communities of national agencies having the same objective

- **Data on ERA-Net (EC data, 2009 draft survey on FP6 ERA-Nets):**

**115 joint calls / 773 m€**

**☞ 6,7m€/call**

<b>Field</b>	<b>Leverage effect</b>
<b>Life sciences</b>	<b>≈ 7,5</b>
<b>Fundamental sciences</b>	<b>≈ 9</b>
<b>Industrial technologies and SMEs</b>	<b>≈ 5</b>
<b>All calls (average)</b>	<b>≈ 4,5</b>

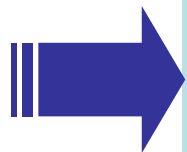
TOOL	Community of networking actors	Leverage effect
FP7 Thematic calls	<b>NET</b> ++ "in mosaic"	- ( very large amount of funding)
ERA-Nets and ERA-Net+ calls	<b>ERA</b> ++	<b>+++</b> <b>MNT:10,</b> <b>Nanomedicine: 20</b> <b>(15% national €) ...</b>
Platforms	++ (industry driven)	-
JTI	++ (industry driven)	<b>++</b>

- **ERA-Net are relevant and efficient to develop ERA in Nano for areas in which**
  - **Breakthroughs are not common to all the actors,**
  - **The need for multidisciplinary partnerships is critical,**
  - **Maturing basic research into specific industrial applications is now the priority (“non mature fields”).**

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- **Electronics,**
  - **Materials,**
  - **Nanomedicine: Pharmaceuticals, Medical devices**

***...ERA-Net are complementary to other existing tools !***

- **Access to infrastructures providing solutions for the characterization of Nano elements**
  - **Access for all actors (academics, clinicians, industrialists)**
  - **Characterization: Physical, chemical, biological administrations and exposures, environmental toxicology...**



- **Network of existing facilities ? supported by EC ? MS? A large virtual infrastructure ?**
- **With a close connection with the **end users** of the products and the **safety agencies****



## Key issues to be solved in a short term

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- **A need for**
  - **Definition of qualification criteria and protocols**
  - **Normalization**



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**Thank you**

**for your attention**