Innovation and growth:
1. SMEs in the EU Economy
## CONTRIBUTION IN MAIN WORLD ECONOMIES

<table>
<thead>
<tr>
<th>Category</th>
<th>EU (&lt;250)</th>
<th>US (&lt;500)</th>
<th>Jap (&lt;300)</th>
<th>Chi (&lt;500)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprises</td>
<td>99.5%</td>
<td>96.0%</td>
<td>99.5%</td>
<td>95.0%</td>
</tr>
<tr>
<td>Manufacturing Enterprises</td>
<td>94%</td>
<td>92%</td>
<td>93%</td>
<td>90%</td>
</tr>
<tr>
<td>Employment</td>
<td>68%</td>
<td>58%</td>
<td>67%</td>
<td>55%</td>
</tr>
<tr>
<td>Employment Share 1990</td>
<td>+9%</td>
<td>-1%</td>
<td>-3%</td>
<td>n.a.</td>
</tr>
<tr>
<td>GDP</td>
<td>61%</td>
<td>47%</td>
<td>53%</td>
<td>40%</td>
</tr>
<tr>
<td>Total Exports</td>
<td>40%</td>
<td>&lt;20%</td>
<td>&lt;15%</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>High-Tech Exports</td>
<td>8%</td>
<td>18%</td>
<td>8%</td>
<td>n.a.</td>
</tr>
<tr>
<td>Innovations</td>
<td>25-30%</td>
<td>35%</td>
<td>4%</td>
<td>n.a.</td>
</tr>
</tbody>
</table>


April 2012 - 2
WRA: EXPORTING KNOWLEDGE

Export of high-tech products: World market share

- EU25
- JAPAN
- CHINA
- USA

US: Electronics & telecom

EU: Pharmaceuticals

China: Computers & Office Mach.

Export of high-tech products: High-tech trade balance
### Proportion of Total R&D Investment in Each Group

2006 R&D industry scoreboard - % companies – (% investment)

<table>
<thead>
<tr>
<th>World region – nr. of companies analysed (average R&amp;D intensity)</th>
<th>Group 1 High R&amp;D intensity (&gt; 5%)</th>
<th>Group 2 Medium R&amp;D intens. (2-5%)</th>
<th>Group 3 Low R&amp;D intensity (1-2 %)</th>
<th>Group 4 Very low R&amp;D intens. (&lt; 1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU 338 ($I_T = 2.9 %$)</td>
<td>35 % (12.4 %)†</td>
<td>51 % (4.3 %)</td>
<td>7 % (1.6 %)</td>
<td>6 % (0.4 %)</td>
</tr>
<tr>
<td>Japan 237 ($I_T = 3.7 %$)</td>
<td>40 % (6.0 %)</td>
<td>50 % (4.0 %)</td>
<td>6 % (1.6 %)</td>
<td>3 % (0.9 %)</td>
</tr>
<tr>
<td>US 587 ($I_T = 4.4 %$)</td>
<td>67 % (11.0 %)</td>
<td>29 % (3.0 %)</td>
<td>1 % (1.4 %)</td>
<td>2 % (0.3 %)</td>
</tr>
<tr>
<td>Rest of the World 176 ($I_T = 3.0 %$)</td>
<td>44 % (9.3 %)</td>
<td>42 % (3.5 %)</td>
<td>5 % (1.3 %)</td>
<td>8 % (0.7 %)</td>
</tr>
</tbody>
</table>
SMEs are much more important in EU

Figure 2.3.11 Share of BERD performed by SMEs (%), 2002 (1)

SMEs do most of EU RTD.

RTD in France as much by big business as in the US!
SMEs are much more important in EU

Figure 2.3.13 Publicly funded R&D executed by SMEs in the business sector as % of total BERD, 2002 (1)

Public research programmes support most EU SMEs.

US Public programmes support SMEs more than 3 out of 4 major EU countries!
SMEs are much more important in EU

Figure 2.3.14 High-Tech venture capital by stage per 1000 GDP, 2003

Private equity does not support most EU SMEs.

Innovating EU countries support early investment but not expansion: is small really so beautiful?
MOTOR OF EUROPE’S CHANGING ECONOMY

I. BY GENERATING NEW PRODUCTS & TECHNOLOGIES
   High tech SMEs create two-times more innovations per employee than large companies

II. BY SUPPORTING THE COMPETITIVENESS OF LARGE COMPANIES
   50% of SMEs are subcontractors

III. BY CREATING EMPLOYMENT
   SMEs and especially micro-firms are the main source of new jobs
EU RTD PROGRAMMES: An OPPORTUNITY for SMEs

- Completion of Economic & Monetary Union
- Globalisation of Economy

SMEs NEED TO:
- Internationalise strategy
- Modernise their production systems and products
- Widen their networks of knowledge suppliers

Widening of the Knowledge base required for core business

Increasing technological content of products and services

EU RTD Programmes allow SMEs to simultaneously:
- improve their technological base
- develop new transnational partnerships
- widen their knowledge base

April 2013
1. TECHNOLOGY DEVELOPERS (~3-5%)
   - Well established R&D capabilities
   - Mostly active in EU collaborative RTD
   - May need support to participate effectively in international R&D cooperation

2. LEADING TECHNOLOGY USERS (~10-15%)
   - Have R&D needs but limited or no R&D capability
     - research is mainly carried out by third parties on their behalf
   - Although many can find adequate solutions at national/regional levels...
   - ...an increasing number is involved in EU RTD activities through CRAFT projects

3. TECHNOLOGY USERS - FOLLOWERS (~80%)
   - Absorption of new technologies through the purchase of equipment, etc.
   - Generally no need or interest in RTD projects

Basis: 2 Million manufacturing SMEs in EU-15 - 1999
2. Innovation and growth: A key role for SMEs
"Innovation is more than just a 'research and development' policy. Innovation is the ability of a system not only to produce new ideas but also to bring them to the markets, and translate them into economic growth and prosperity. In short, innovation stands for turning new ideas into growth and jobs.

That is why innovation, which we could also call "applied creation", is for the years to come "the" overarching priority for the European Union, a benchmark for its actions."

Herman Van Rompuy
President of the European Council
Brussels, 10 October 2013
Community Innovation Survey (CIS)

- Product (good or service) innovation
- Process innovation
- Organisational innovation
- Marketing innovation

Performance indicator 'SME' in Horizon 2020:
'Share of participating SMEs introducing innovations new to the company or the market (covering the period of the project plus three years)'
SMEs - *driving force of economic growth and job creation in Europe:*

- 20.7 Million SMEs in the non-financial business economy (~99% EU enterprises)
- 85% of new jobs in the private sector created by SMEs that provide more than two thirds of jobs (more than 87M)
- SMEs account for more than 58% of the total gross-value added

-----) *Performance indicator 'SME' in Horizon 2020: 'Growth and job creation in participating SMEs'*
What is an SME?

Any autonomous entity engaged in an economic activity, irrespective of its legal form, with the following characteristics:

- \(< 250\) employees
- \(\leq \€ 50\) Million Annual Turnover
- \(\leq \€ 43\) Million Annual Balance Sheet

*(Commission Recommendation 2003/361/EC)*
What is a fast growing company?

Definition:

High-growth: average annual growth in either turnover or employment of more than 20% over three years

Young high-growth ('gazelles'): up to five years old

% of total enterprises: less than 10% (1%), but creating most new jobs

Challenge:

In US and emerging Asian economies, young leading innovative firms are more numerous, especially in high-tech sectors, and they grow faster.
Barriers to innovation & growth in SMEs

- Access to finance (additionality of public support)
- Knowledge and skills shortage
- Weakness in networking and cooperation with external partners (open innovation)
- Internationalisation
Innovation Union Commitment n°7

Ensure stronger involvement of SME in future EU R&I programmes

* European Council 4 February 2011

Commission is invited to explore the feasibility of a Small Business Innovation Research Scheme
SME support - Objective

To stimulate growth by means of increasing the levels of innovation in SMEs, covering their different innovation needs over the whole innovation cycle for all types of innovation, thereby creating more fast-growing, internationally active SMEs.

All types of innovation

More impact!!
%SME share on EU Contribution, 2007-2013
Data of 20/06/2013

<table>
<thead>
<tr>
<th>Theme</th>
<th>%EU €</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEALTH</td>
<td>17,1%</td>
</tr>
<tr>
<td>KBBE</td>
<td>14,7%</td>
</tr>
<tr>
<td>ICT</td>
<td>14,9%</td>
</tr>
<tr>
<td>NMP</td>
<td>23,1%</td>
</tr>
<tr>
<td>ENERGY</td>
<td>18,9%</td>
</tr>
<tr>
<td>ENV</td>
<td>13,5%</td>
</tr>
<tr>
<td>TPT</td>
<td>17,8%</td>
</tr>
<tr>
<td>SSH</td>
<td>5,3%</td>
</tr>
<tr>
<td>SPA</td>
<td>15,3%</td>
</tr>
<tr>
<td>SEC</td>
<td>21,6%</td>
</tr>
<tr>
<td>THEMES</td>
<td>16,9%</td>
</tr>
</tbody>
</table>
FP7 has attracted innovative SMEs:
- 97% innovative enterprises (mainly manufacturing & knowledge-based services)
- Annual growth rate of employment: 9.5%*

SMEs that participate in European projects:
- increase their R&D and innovation capability due to possibility to tap best knowledge in EU
- get access to international networks,
- open up new markets; new customers
- get access to qualified staff
- increase reputation and visibility on EU level

*2010-2012
Pitfalls and challenges

• Less than 50% of industrial partners use the publicly funded applied research projects strategically
• Only about 22% of SMEs participating in EU research programmes are strategic innovators
• Most academics engage with industry to further their research rather than to commercialise knowledge
• Projects are not designed for exploitation

\[\text{---} \text{ need for funding mechanism that is better aligned to the strategic needs of innovative SMEs}\]
SME support in Horizon 2020 overview
SME support: integrated approach

20% budgetary target in LEITs & SC

'Innovation in SMEs'

Collaborative projects 13%

SME instrument 7%

Eurostars II
Enhancing Innovation Capacity
Market-driven Innovation

Access to Risk Finance

Horizon 2020
SME support – what continues

• SME participation in collaborative R&D or innovation projects (but no dedicated SME calls, no budget earmarked etc.)

• Eurostars II

• Enhancing the **innovation capacity** of SMEs (Europe INNOVA former CIP-EIP)

• Exchange and **mobility** of researchers involving SMEs (Marie Sklodowska-Curie actions)

• Access to **finance, but wider scope!**

what stops:

• **Research for the benefit of SMEs** scheme
FET Open

Collaborative R&D&I
Target: R&D topics
(3 participants)

Eurostars
Target: R&D
intensive SME
(2 participants)

SME Instrument
Target: Close-to market
activities in SME
(1 participant)

R&D driven projects

Market opportunity driven projects

Research and Innovation
University

Small Business

Funding Gap (range: 1-3 M€)

Public Funds

Resources Invested

Research

Development

Commercialization

Private Funds

Industry

Venture Capital

Angel Investors