OECD STI Outlook: 20-year tradition

• “What’s new in the field of science, technology and innovation policy?“
• International review of key recent trends in STI for the STI policy community and analysts
• Based on latest STI policy information and indicators
• OECD Flagship publication
Drawing on a unique policy questionnaire

Country coverage of the STI Outlook from 2008 to 2014
The three components of the STI Outlook 2014

- Overall STI Performance and Policy Trends
- Policy Profiles
- Country Profiles
Asia on the rise

Total world R&D expenditure, in million USD 2005 PPPs and Share of major performers in the total world estimate (%)

Source: OECD, based on OECD MSTI Database, January 2014 and UNESCO (UIS) 2014.
Benchmarking Japan’s performance (1)

Normalised index of performance relative to the median values in the OECD area (Index median = 100)

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Benchmarking Japan’s performance (2)

Normalised index of performance relative to the median values in the OECD area (Index median = 100)

b. Interactions and skills for innovation

Public funding systems differ

Allocation of public funds of R&D, by sector, type and mode of funding

Selected key messages and implications for Japan
Policy priorities differ across countries …
(Priorities based on self-assessment, % of countries)

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http://dx.doi.org/10.1787/888933151619
.. as does the policy mix …

(Relative relevance of funding instruments for business R&D and innovation, based on country responses)

http://dx.doi.org/10.1787/888933151731
.. which continues to change

(Change in the relative relevance of funding instruments for business R&D and innovation, country responses)

http://dx.doi.org/10.1787/888933151731
1. **Skills and job creation** and the ability of economy and society to adjust to rapid change

2. **The science system of the future?**

3. **Innovation policy mix and the scaling of firms**

4. **Focusing innovation on social and global challenges, such as:**
   - The transition to a low-carbon economy
   - Ageing and health
   - Growing income inequality

5. **The role of government – “new” industrial policy**

**Towards a “new deal” for innovation?**
1. Skills are a major challenge: 2 out of 3 people lack the skills to succeed in a technology-rich environment …

... and human resources for science and technology are a challenge

Percentage of entrants to tertiary education in engineering, science and health fields, 2012

2. Reforms to research systems

Challenges:
• Science and Business
• Globalisation and openness
• Technology convergence
• Ageing workforce
• Funding breakthroughs

Policy actions:
• Reforms to funding, incl. research excellence
• University reforms
• Commercialisation
• Multidisciplinarity
• “Open” science
3. The Innovation Policy Mix needs to be considered …

Direct funding of business R&D and R&D tax incentives, 2011

As a percentage of GDP, 2011

http://dx.doi.org/10.1787/888932891112
.. as the balance in the policy mix shifts ...
(based on own country ranking)

Population-targeted versus generic instruments

Competitive versus non-competitive instruments

http://dx.doi.org/10.1787/888933151708
.. and services innovation becomes a key driver of competitiveness in global value chains

Services value added content of gross manufacturing exports, % 2009

Source: OECD
Growth of young innovative firms is also a challenge in many OECD countries …

Average size of start-ups and old firms, in persons employed, services sector

Source: Criscuolo, Gal and Menon (2014), [www.oecd.org/sti/dynemp.htm](http://www.oecd.org/sti/dynemp.htm)
Policies to unlock growth and innovation by young firms

• **Enable experimentation:** Reduce barriers to the entry (e.g. red tape), growth (e.g. size-specific regulations), and exit/failure of firms (e.g. penalising bankruptcy legislation, overly strict employment protection legislation).

• **Level the playing field for new and innovative firms:** Some policies favour incumbents and MNEs (e.g. R&D tax credits).

• **Strengthen the innovation system for young and innovative firms,** e.g. through enhanced access to (risk) capital, network development, mentoring of entrepreneurs, skills development, etc.

• **Improve access to foreign markets,** so firms can scale more easily across borders.

• **Celebrate entrepreneurship.**
5. Focusing on Global Challenges: e.g. the growing social and economic burden of Alzheimer’s disease and other dementia

Source:
6. Industrial policy is being discussed in many countries, but lessons need to be learned

(Rodrik, 2008)

“The emerging consensus is that the risks associated with selective-strategic industrial policy can be minimised through a ‘soft’ form of industrial policy, based on a more facilitative, coordinating role for government, consistent with the systems approach......

“The goal of ‘soft’ industrial policy is to develop ways for government and industry to work together to set strategic priorities, deal with coordination problems, allow for experimentation, avoid capture by vested interests and improve productivity.”
Some emerging lessons

• **Remove barriers** before providing support - i.e. “don’t push on a string”

• **Clarity in objective(s)** – such that success and failure can be assessed in an non-discretionary manner

• **Competition - keep the outsiders and the unborn (e.g. young firms) in mind** – resist political economy pressures from insiders and incumbents

• **Evaluate** (preferably *ex ante* and *ex post*) – and incorporate evaluation in policy cycle

• Ensure public bears **risk which is “proportionate”** (enough to matter, not too much to lead to moral hazard)

• **Plan for exit** – and make plan known

• **Incentives/subsidies**: Only for “new” activities
Thank you

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