



CSTP/TIP Workshop on the OECD STI Outlook and the Innovation Policy Platform

17 June 2015, Paris, OECD Headquarters

Summary notes of the “forward looking” breakout session 4:
The future of innovation policy design and delivery.

Background

The *OECD Science, Technology and Industry Outlook* (STIO) is a biennial publication that provides policy makers with the latest information on recent and expected trends in the global science, technology and innovation (STI) landscape and identifies potential implications for national policies. The STI Outlook is produced under the aegis of the OECD Committee for Scientific and Technological Policy (CSTP) with input from its Working Parties, notably the Working Party of Innovation and Technology Policy (TIP).

The OECD has undertaken a “Forward Look” exercise on future STI policy trends in preparation for the STI Outlook 2016 with a view to improve the “outlook” dimension of the next edition. The exercise seeks to project current STI and policy trends into a 10-15 year future and identify challenges and implications for STI policy makers. The approach is mainly desk-based, complemented by interviews and a small number of mini-workshops in various parts of the world. The exercise started in mid-2015 and should be completed by the end of the year.

The afternoon sessions of the June CSTP/TIP workshop aimed to scope topics of interest to CSTP/TIP that should be prioritised in the framework of this forward looking analysis. This scoping exercise has been conducted through five interactive breakout sessions during which participants were asked to present, comment and/or report on a specific topic of interest to them.



The future of innovation policy design and delivery

Breakout session n^{o4}: summary note

Prepared by Sandrine Kergroach, Chiara Petroli and Darja Vrščaj (OECD)

The opinions expressed and viewpoints herein are those of the participants and do not necessarily reflect the official view of OECD member countries and non-OECD economies. All participants were invited to contribute under the Chatham House Rule, i.e. they are free to use the information received and gathered, but neither the identity nor the affiliation of the participants may be revealed.

I. Strengths and weaknesses of national innovation systems

Part I. Identifying national strengths and weaknesses.

As a first exercise, country delegates are asked to present the major strengths and weaknesses of their respective national innovation systems (maximum 3 strengths and 3 weaknesses for each participant), and try to identify common issues and assets across countries. Country delegates are divided in 2 groups of about 8/9 persons each.

Strengths	Weaknesses
AUSTRIA	
<ul style="list-style-type: none">- High number of innovation SMEs;- A good tax system that enables strong R&D system.	<ul style="list-style-type: none">- Structural change in the design of the STI policy and little political focus on structural change in STI policy- Low rate of start-ups
CANADA	
<ul style="list-style-type: none">- In general higher education is good, but specifically entrepreneurship education is not that good;- Research excellence- Good regional clusters, e.g. ICT and aerospace	<ul style="list-style-type: none">- Low multifactor productivity
CHILE	
<ul style="list-style-type: none">- Good scientific performance at universities- Good global connections (e.g. mobility of Chilean researchers and high share of international co-authorship of scientists at Chilean HEIs)	<ul style="list-style-type: none">- A too small national market- Lack of technology transfer- Economy mainly based on the export of natural resources
CHINA	
<ul style="list-style-type: none">- Over the years, the country developed its capacity to put enterprises at the hearth of innovation policy.- Strong government commitment to innovation (very long-	<ul style="list-style-type: none">- An innovation policy system that is not particularly favourable to SMEs

term perspective – national strategies/policies often planned towards 2020 and over).	
COSTA RICA	
<ul style="list-style-type: none"> - Good entrepreneurship education - Good policies for encouraging R&D - Good unique innovation ecosystem as a country with a lot of emphasis on social innovation – there is an increase in businesses that do not focus on making a lot of money 	<ul style="list-style-type: none"> - Not enough intrinsic motivation for people to engage in innovation; - Institutional design does not allow for flexible entrepreneurship; the system and rules are too strict.
FINLAND	
<ul style="list-style-type: none"> - High volume of investment R&D - High quality education - Cooperation between various administrative domains – there are many horizontal joint initiatives between ministries with the aim to increase the level of technology integration in the society. 	<ul style="list-style-type: none"> - Weak economic situation - Weak new government programme
FRANCE	
<ul style="list-style-type: none"> - Attractiveness of the national innovation system for foreigners (e.g. foreign researchers at French universities) - Good performance of public research in some peculiar sectors (e.g. nanotechnology) 	<ul style="list-style-type: none"> - Insufficient level of R&D in industry
MEXICO	
<ul style="list-style-type: none"> - Sound macroeconomic policy 	<ul style="list-style-type: none"> - Fragmentation (lack of long-term vision) - Institutional weakness (lack of connections among institutions) - Lack of venture capital
NETHERLANDS	
<ul style="list-style-type: none"> - Flexibility in collaboration – bottom-up, public-private partnerships with well-designed R&D tax incentives; - Well-designed R&D tax incentives - Good entrepreneurship education - Active involvement of departments in responsibility regarding societal issues. 	<ul style="list-style-type: none"> - R&D funding is decreasing - Non-technological innovations are not as supported/funded as the technological ones; - Weak link between ICT policy and innovation that should be strengthened
NORWAY	
	<ul style="list-style-type: none"> - Lack of a comprehensive innovation strategy. There are sectoral strategies / strategies focussed on peculiar aspects of innovation policy but not a far-reaching national innovation strategy.
RUSSIAN FEDERATION	
<ul style="list-style-type: none"> - High-quality “brains” (highly qualified scientists and human resources for innovation) - Open-minded innovation teams in the government. Understanding from public institutions of the importance of innovation and the challenges involved. - Understanding of the need for change among professionals and the various innovation stakeholders. The main point to highlight is a strong and diffuse willingness to change. - Pretty well targeted funding system (i.e., satisfactory prioritization capacities) - High education level (good performance of the national education system, including primary and secondary education). 	<ul style="list-style-type: none"> - Existence of monopolies / resistance to change - Dependence of scientific research from government funding. - Heritage of the Soviet science system, which used to have its strengths in the past but is not appropriate anymore in the new post-soviet context. In other words, institutional weakness.
SWEDEN	
<ul style="list-style-type: none"> - Well-funded R&D. 	<ul style="list-style-type: none"> - No cross silo processes - Weak innovation incentives for education systems
TURKEY	
<ul style="list-style-type: none"> - High focus on R&D. - Adaptation to economic and technological change. - Setting strong aggressive targets and agenda for 2023. 	<ul style="list-style-type: none"> - Need to face the challenges of globalisation more s

UNESCO	
<ul style="list-style-type: none"> - There is political will to develop their own STI policies - People are enthusiastic about developing new businesses 	<ul style="list-style-type: none"> - Problem with institutional change, political instability - Lack of investment in human capital – countries are relying on developing countries for skills and knowledge

Part II. Clustering national strengths and weaknesses.

Overall, the factors most recurrently identified by country delegates as key strengths / weaknesses on national innovation systems may be clustered as follows. The diagram below is based on the standard STI policy “hot” issues used in the STIO 2014 policy questionnaire and country profiles.

Strengths	Weaknesses
<p>Sound science and knowledge base</p> <ul style="list-style-type: none"> - Good scientific performance. - Strong policy focus on R&D and high volume of investments - Strong and attractive national education systems - Good education performance, including in the entrepreneurial field. <p>Institutional stability</p> <ul style="list-style-type: none"> - Stable institutions, trust in government <p>Commitment and efficient governance, including good FWC</p> <ul style="list-style-type: none"> - Open minded governments and strong willingness to act towards major challenges. Willingness to change / open mind to change / innovation culture (e.g. in the Russian Federation). - Good priority setting (i.e. capacity to identify priorities and major issues, good knowledge of the problems). - New ways of policy making - Efficient governance systems (including macroeconomic and framework conditions – attractiveness for investments, etc.), including good tax systems - Cooperation between agencies and PPPs in some countries <p>Good integration into international networks</p> <ul style="list-style-type: none"> - Global connectivity and exchange of information. 	<p>Weak innovation culture</p> <ul style="list-style-type: none"> - Lack of innovation culture in some countries / sectors of societies (e.g. education systems). <p>Fragmentation in governance and lack of evidence on policy impact</p> <ul style="list-style-type: none"> - Lack of good governance, fragmentation, insufficient evaluation and impact assessment activities. - Lack of a coherent / comprehensive / systematic approach to innovation policy (e.g. no comprehensive national innovation strategy, or no systemic approach to national innovation policy). - Lack of continuity in policy <p>Financing gap in both public and private sectors</p> <ul style="list-style-type: none"> - A certain “shyness” of the private sector (lack of venture capital, private investment, etc.). - Some lack of both public and private funding. <p>Insufficient knowledge transfer</p> <ul style="list-style-type: none"> - Need to improve technology transfer, commercialisation and exploitation of technology among society.

Part II. Drivers of change

Delegates are invited to discuss possible drivers of change of the current situation that might reshape / transform national innovation systems towards 2030.

The Secretariat proposed the following drivers of change:

- Technology convergence.
- Shifting economic gravity.
- Globalisation (research internationalisation) and GVCs.
- The changing nature of innovation (new business models, non-tech innovation).
- Grand challenges (Ageing, pressure on strategic resources, climate change etc.).
- 21st century society (interconnected, mobile, urban).

The following additional major drivers of change have been identified:

- **Privacy issues** related to the management of big data.
- **Security issues** related to cybersecurity and the role governments are playing in catching-up.
- **Changing democracy, work, education and labour market.** Change in people's perception and expectations of quality of life, professional opportunities, and personal improvements (what are my personal and professional perspectives? Which are the opportunities available to improve my socio-economic conditions? How to improve my family and children's quality of life?). This phenomenon is related *inter alia* to factors such as mass education and the broad diffusion of social networks and western cultural models in the developing world. Growing level of education and individualism; skill mismatch expected.
- **Claims for growth sustainability and equality.** More focus given to wellbeing and sustainability rather than growth.
- **Strong "Keynesian push"** (i.e. governments spending more money to boost investments and policy infrastructures) to cope with "grand challenges", such as ageing and big data.
- **Disruptive technologies** and the convergence of sectors.

Part III. In 2030

Delegates are invited to discuss how current drivers of change may lead to new opportunities / threats for national innovation systems on the long term (to 2030).

Opportunities	Grey area	Threats
<p>Localisation of innovation, import substitution and new business conditions (as a reaction and adaptation to globalisation).</p> <ul style="list-style-type: none"> - More opportunities for small local communities to achieve higher economic independence. - Generalisation of microcredits - "Decolonisation" of innovation - Democratisation of business - Reverse/frugal innovation and leapfrogging - New business models - More and better jobs <p>Science for global challenges</p> <ul style="list-style-type: none"> - Application of science to "grand challenges" (e.g. ageing, inclusiveness, development, equity or sustainability). - There's actually enough knowledge, technology and capacity to understand and cope with the major current global issues. - The challenge is to effectively apply this knowledge to the solution of concrete problems. <p>Global/ millennial mindset and focus on driving well-being</p> <ul style="list-style-type: none"> - Global approach on environment, health and safety issues - Shared values - Social innovations 	<p>Brain circulation.</p> <ul style="list-style-type: none"> - The high circulation of talents and highly-educated people at international level can be regarded as an opportunity to exchange information and knowledge at global level. - But competition for scientists and resources. Brain drain may have negative impacts for the countries of origin. <p>Some technological changes</p> <ul style="list-style-type: none"> - Artificial intelligence - Eternal life <p>Big data</p> <ul style="list-style-type: none"> - Risks related to big data (freedom, privacy, competition etc.) and growing risks of global monopolies on data property and exploitation. - Opportunities for more adaptive policies and improved learning opportunities 	<p>National governance : overcomplexity and fragmentation.</p> <ul style="list-style-type: none"> - Governments need to face both to cope with complex tasks that require a high level of coordination at national level. - Path dependency <p>International cooperation on governance</p> <ul style="list-style-type: none"> - "Isolated actions". Dealing with global issues requires a high level of international coordination among governments. The need for increased coordination implies both opportunities and challenges. Countries "going their own" in terms of policy choices can represent a threat. - Issues deriving from fragmented tax regimes (artificial competition, tax erosion, NIS framework). <p>Climate change and competition on scarce resources</p> <ul style="list-style-type: none"> - We might go over a 3% increase in global temperature. - Compromised ecological integrity may have societal effects - Inequality within and between countries will raise geopolitics tensions <p>Uninclusive growth</p> <ul style="list-style-type: none"> - Unruled migration and inequality. - Unemployment and social exclusion (potential long-term consequences of the recent global crisis)

		<p>Education</p> <ul style="list-style-type: none"> - Raise the question of education adaptability <p>Market failures</p> <ul style="list-style-type: none"> - Without a serious commitment to boost investments, private capital might remain “blocked” and risks to be reinvested in financial markets rather than in the production sector, with a negative impact on economic recovery. - Danger of monopolisation
--	--	---

Part IV. Emerging thoughts regarding the future of innovation policy

Think backward starting from the future

- We need to look how the context will change
- It is too speculative to discuss changes in the policy mix, because it results from a constant experimentation.
- Our current mix needs to take into account a broader context.
- What is required is moving targets that can be adjusted to current circumstances.

Intelligent policymaking: if these are the trends - then what mechanisms should be implemented?

- **Intelligent policy making** = adaptive, flexible, able of learning and able of changing. This may imply a change in government settings.
- We have an intrinsic knowledge of what the good/sound policies are but we are not yet there
- There is a know-how – we have the principles- we need to improve the **implementation and the instrumentalisation**
- Combined different issues and different types of policies, outside the STI policy area, is required
- What would be the **optimal level of STI policy activities** (supra, national, regional, local)? And how should these activities broken down along these different levels of governance? The city has a central role to play.
- **Room for failures.** There should be some room for experimentation and place for a learning process. The same recipe that for the business sector (spend less, experience, experiment) stands for STI policy making.

Urgency of action

- We should **speed up** to face challenges
- There are areas where there is **urgency** of action. This may require considering more **forceful policies**.
- BUT Ensure people have a choice (preserve the principles of democracy and ensure social cohesion)
- Policies should be designed to be **inclusive**: not to exclude anyone within the country / in countries
- Publicly-funded research should only focus on the grand societal challenges and where the urgency is.

Austerity is an issue -if one thinks STI policy investment is a cost

- Scalability issue: well-designed programmes do not have the necessary scale to have large impact.
- Appropriate budgets are required