STI GOVERNANCE STRUCTURES AND ARRANGEMENTS

Rationale and objectives

The term "governance" is generally ill-defined and has gained a range of meanings. For the purposes of this profile, the definition of STI governance is limited to the set of publicly defined institutional arrangements, including incentive structures and norms, that shape the ways in which various public and private actors involved in socioeconomic development interact when allocating and managing resources for innovation. The emphasis on interaction naturally raises issues of co-ordination, and "failures" in governance are, more often than not, related to failures of co-ordination.

Co-ordination is a difficult challenge and governments often encounter a mix of imperatives when seeking to co-ordinate innovation-related policies across different ministries and agencies. Furthermore, recent years have seen a significant expansion in the number and range of interested ministries and agencies, owing in part to new public management (NPM) reforms and emerging multi-scalar governance arrangements, but also to changing perceptions of innovation processes and their determinants. In particular, policy makers and analysts have widely adopted an innovation systems perspective that has resulted in increased attention to a wide range of actors and their interactions.

Major aspects

Co-ordination relies upon a mix of hierarchical, market and network-based interactions. As such, it has both vertical and horizontal aspects, the former referring, for example, to co-ordination between a ministry and its delivery agencies and the latter covering inter-ministry relations. Instruments of co-ordination can be based on regulation, incentives, norms and information. They can be top-down and rely upon the authority of a lead actor or bottom-up and emergent.

Co-ordination can be fostered at different points in the policy cycle. For example, in agenda-setting processes, high-level policy councils often support shared problem and solution definition. The formulation of strategic, long-term policies and visions that set the direction for priority setting also plays an influential role. Co-ordination can also be achieved in implementation processes, for example through joint programming. Recent trends in such co-ordination mechanisms are outlined below.

In many countries co-ordination efforts have been affected by a growing regionalism, in which more control over policy and resources is devolved to sub-national authorities. This movement has seen the emergence of innovation, and increasingly science, agendas in sub-national regions. Matters have been further complicated by the growth of international governmental organisations and international regulations that increasingly shape governance regimes. This is especially true in Europe, where the European Commission plays a prominent role in supporting research and innovation agendas, mostly at the European level, but also at the sub-national level. Several countries report specific arrangements to improve co-ordination between these different levels. For example, institutionalised forums – in the form of roundtables or policy councils – are reported by Argentina, Australia, Brazil and Denmark, while Spain relies on the articulation of STI collaboration agreements between state and regional governments.

Recent policy trends

While efforts at improving STI policy co-ordination are often part of wider initiatives to improve policy coherence across government, domain-specific measures are also common. The *OECD Science Technology and Industry Outlook 2012* policy questionnaire invited countries to rate the importance of eight common arrangements directed at STI policy co-ordination. The results are shown in Figure 5.3 and discussed below.

Figure 5.3. **Arrangements contributing to the co-ordination of innovation policy, 2012**

Based on own country ratings, where 7 = high importance, 1 = low importance and 0 = non-existent

Source: Country responses to the *OECD Science Technology and Industry Outlook 2012* policy questionnaire.

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National strategies and visions are considered to contribute the most to innovation policy co-ordination. While such strategies often highlight the need to improve co-ordination and accountability, they are themselves instruments to these ends. They typically involve wide consultation and deliberation and provide diagnostic overviews of innovation system strengths and weaknesses and the opportunities and threats that are likely to arise in the near future. Belgium rates this factor at zero, a reflection of its strong devolution to regions, while the United Kingdom rates it as the factor contributing the least to co-ordination.

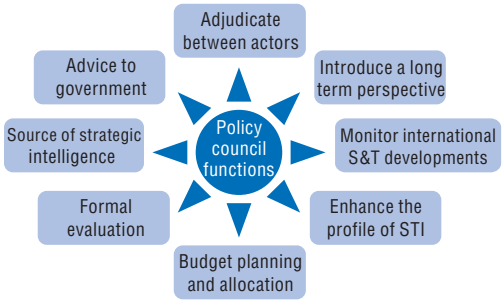
Dedicated innovation agencies or ministries come next in the ranking of arrangements that contribute to policy co-ordination. There is evidence of a growing movement to establish lead organisations for innovation policy. Italy and South Africa have recently established new agencies dedicated to innovation, while Australia, Denmark, the Netherlands and Turkey have sought to bring several innovation system functions together in newly consolidated ministries. Consolidation may present risks, however, particularly if science policy ministries assume leadership of the national innovation agenda. This may lead to "high-tech myopia" and insufficient attention to the innovation support needs of low-tech sectors. South Africa and Spain drew attention to this concern. Consolidation efforts have taken an interesting turn in New Zealand and the Russian Federation, where previous NPM reforms have been reversed and agencies have been reintegrated back into ministries. Canada, Germany, the Russian Federation, Switzerland and the United States do not have dedicated innovation agencies or ministries and therefore rate this factor at zero.

Policy evaluations and reviews are a source of strategic intelligence, which also rates highly in terms of its contribution to innovation policy co-ordination. Only in Poland, the Russian Federation and Sweden did this receive a low rating. System reviews can make more explicit the links and interdependencies between actors and institutions in innovation systems. Colombia

and South Africa also mentioned the potential role of better measurement, particularly of the systemic aspects of innovation, as a means of promoting greater co-ordination.

High-level policy councils are rated similarly to policy evaluations and reviews. Most countries have a range of councils, commissions and committees dealing with aspects of STI policy co-ordination. The role of policy councils is variable, as Figure 5.4 shows. In a few countries, notably Japan and Korea, they adopt a joint planning model, but most are confined to less ambitious co-ordination or advisory roles. Some councils are independent, others are composed of government representatives, and many are somewhere in between. Some are chaired by the head of state or a senior minister, many are not. Recent years have seen a growing number of councils dedicated to innovation policy. These sometimes extend the remit of existing S&T councils (*e.g.* Finland) but more often they are new structures (*e.g.* Australia). New Zealand, Poland, the Slovak Republic, Spain and Sweden rate them zero, indicating that such arrangements do not exist. Israel and the United Kingdom rate them as making relatively little contribution to co-ordination.

Figure 5.4. **Functions and types of high-level STI policy councils**



An *advice model* (*e.g.* Ireland, Netherlands, Switzerland, United Kingdom), where the government is happy to be proactively or reactively advised on research and innovation policy but does not want to be restricted by that advice

A *co-ordination model* (*e.g.* Finland, Canada), where the intention is that the council should communicate horizontally across ministry responsibilities so as to align policies in support of innovation, without this alignment always being binding

A *joint planning model* (*e.g.* Japan, Korea), where the government uses the council as a virtual "horizontal ministry of innovation", much as engineering companies build project teams by bringing together people across different disciplines

Source: Adapted from OECD (2009), *Chile's National Innovation Council for Competitiveness*, OECD, Paris.

The contribution of informal channels of communication between officials is also highly rated, particularly in Canada, Finland, New Zealand, Sweden and the United Kingdom. Such arrangements tend to work best where there already exists a relatively well-developed culture of inter-agency trust and communication.

While not among the highest-rated contributors to policy co-ordination, *inter-agency joint programming* can draw together a number of interested agencies around a shared programmatic agenda. Some countries have moved further in this direction. For example, a single funding stream for STI was introduced in Ireland in 2010 to maximise the efficiency and focus of STI investment. Canada, Denmark and Luxembourg report efforts to better standardise procedures across agencies – *e.g.* for funding applications and impact assessments – to facilitate co-ordination and further other aspects of governance.

High-level leadership, for example, through the *intervention of the President's or Prime Minister's office*, is important for furthering co-ordination of innovation policy agendas and programmes in some countries. Argentina, Australia, the People's Republic of China, Ireland, the Russian Federation and Turkey all rated this as important. High-level leaders are in a good position to further co-ordination and are well placed to bridge traditional interest and bureaucratic boundaries.

By far the lowest-rated contributing factor is *job circulation of civil servants, experts and stakeholders*. This may be because typical career paths tend to keep civil servants within the same ministries and discourage inter-sectoral mobility between academia, the civil service and business sectors.