Technology platforms and fora

Technology platforms and fora aim to define research priorities and action plans in strategic technological areas for regions and countries and to coordinate research efforts in these areas. They do so with a view to significantly contributing to technological development. Technology platforms typically draw together a mix of actors, such as industry, research funding organisations, policy-making and regulatory organisations, research universities, public research institutes, as well as civil society. Several factors should be taken into account when implementing technology platforms and fora, including: the implications of the technology for the economy and society, the size and relations of firms present in the platform, the ability of public sector research to participate in and contribute to technology platforms, the flexibility of PSR regimes to react/adapt to the emerging research needs of technology platforms (e.g. through the establishment of new collaborative R&D programmes), and existing traditions of public-private partnership.

What are technology platforms and fora?

Technology platforms are industry-led stakeholder forums that aim to define research priorities and action plans in a broad range of strategic technological areas where achieving competitiveness at the national or regional level requires major research and technological progress in the medium to long term. Technology platforms can range from loose networks among participants to legal structures with membership fees. They can influence the development and deployment technological breakthroughs in strategic technological areas for which the involvement of various key stakeholders and the mobilisation of sizeable funding are required.

The primary goal of technology platforms is to define R&D priorities in strategic technological areas (e.g. industries, societal grand challenges) for regions and countries and to coordinate research efforts in these areas with a view to significantly contributing to technological development. They can also be important in fostering R&D collaboration between the public and private sectors, and they may indirectly contribute to the development of inter-sectoral mobility and knowledge markets.

How do technology platforms have an influence?

Technology platforms seek to address a number of failures common to innovation systems, notably weak coordination between key actors, high entry barriers to emerging technology areas, and a lack of critical mass to develop and exploit new technologies. They operate as follows:

- Technology platforms draw together a mix of actors with a stake in a given strategic technological area, including industry, research funding organisations, policy-making and regulatory organisations, research universities, public research institutes, as well as civil society (often represented by third-sector organisations). By involving a mix of stakeholders, technology platforms aim to avoid duplication of investment in R&D, on the one hand, and to overcome potential obstacles for the development of new technologies in these areas, on the other.

- Technology platforms allow for a strategic view of technological development to emerge, with, for example, a strong focus on identifying future needs for investments in infrastructure and human resources.

- The mode of operation of technology platforms can generally be characterised as having a three-stage life cycle. In the first stage, stakeholders articulate a vision for the future of a particular strategic technology area. They then define an action plan by agreeing on the research efforts to undertake and framework conditions to improve in the medium- to long-term, with a view to developing and deploying technological breakthroughs in the area. In a final third stage, they implement this action plan by mobilising sizeable public and private

funding. It is important to highlight that the process of envisioning and defining action plans is often as important as the product (visions and action plans) and contributes to the creation of advocacy coalitions active in promoting developments in the given strategic technology area.

What factors should be considered when implementing technology platforms?

The following factors will influence the implementation of technology platforms:

- **Implications of the technology for the economy and society.** The nature of the strategic technologies to be studied differ in their complexity, their opportunities for future advancement and exploitation, and their social acceptability. Technology platform schemes should be sensitive to this diversity and be rolled out flexibly.
- **Industrial ecology.** The dynamics of technology platforms will vary according to the size and relations of firms present. It is usual for large competitor firms to come together on technology platforms to explore and promote pre-competitive R&D needs. Suppliers and customers—often SMEs—also tend to be present. Where no large firms participate, industry associations or even PRIs might instead anchor technology platforms.
- **Scope and scale of public sector research.** The ability of public sector research to participate in and contribute to technology platforms will depend upon whether the institution attains a critical mass of relevant research activity. Where this is missing, an outcome of a technology platform might be to develop such activities in research universities and/or PRIs.
- **Public and private commitment.** Because technology platforms set out to develop and deploy breakthrough technologies in the medium-term to long-term in areas characterised by high entry barriers, public and private commitment is required. In particular, policy-making organisations and funding organisations need to directly and indirectly support technology platforms during their lifecycle. In this regard, the flexibility of PSR regimes to react/adapt to the emerging research needs of technology platforms, e.g. through the establishment of new collaborative R&D programmes are crucial factors for their success.
- **Existing traditions of public-private partnership.** If firms and the public sector already work closely together, then technology platforms can be useful to disrupt existing agendas and networks and to shift actors to make new connections. If, on the other hand, existing relations are weak, then technology platforms can help bring actors together in spaces of mutual learning and visioning.
- **Technology Platform.** Technology platforms are closely related to other core policy instruments, including collaborative R&D programmes, university-industry linkage schemes and cluster initiatives.

References

- European Commission (2004), Technology Platforms: From Definition to Implementation of a Common Research Agenda, European Union Publications Office Luxembourg.

- European Commission (2010), Strengthening the role of European Technology Platforms in addressing Europe's Grand Societal Challenges, Report of the ETP Expert Group, European Union Publications Office, Luxembourg.
- IDEA Consult (2008), Evaluation of the European Technology Platforms, Final Report to the European Commission, European Union Publications Office, Luxembourg.
- OECD (2003), Turning Science into Business, OECD Publishing, Paris.
- OECD (2002), Benchmarking Industry-Science Relationships, OECD Publishing, Paris.
- Government-University-Industry Research Roundtable (1999), Overcoming Barriers to Collaborative Research: Report of a Workshop, National Academy of Sciences, Washington, D. C.

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