Vietnam's science, technology and innovation strategy 2011-2020
International conference

International Advisory Board
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Contribution

The work produced by MOST, ONIDO and NISTPASS to define the roadmap for a STI strategy for VIET NAM clearly enlightens the interaction between science and technology (S&T) and policy.

In addition, the importance accorded to S&T by the Government (ref. draft decision – Approval of the strategy for S&T Development) accentuates this interaction and gives to the S&T policy framework a leading position within the development strategy of the country.

Taking these considerations into account and learning from the French experience in developing and implementing a STI strategy, we would like to pinpoint the central aspect of the governance in this precessus, thus to identify the methodological instruments useful to decision-makers.

The French experience.

France as a national strategy to promote technological innovation. This strategy aims at creating a cross fertilization between innovation and economic development in order to slow down the deindustrialization processus and to create a re industrialization momentum.

But the definition of an ambition, even of a vision is not sufficient for a successful implementation and development of such a strategy. Governance through a strategic intelligence policy appears as a central condition of efficiency. The French experience revealed a weakness in governance. Our point of view is that we lack coordinating actors and using forecasting and assessment tools in an efficient way.

The efforts are made by numerous actors including CCI, at different levels. Many problem appear,

- at no moment of the policy implementation appears a monitoring process to verify that the strategy is understood and share par the great number of actors;

- no synchronisation of actions or no governance of the implementation;
- no progress measurement adapted to what technological innovation concerns that is to say knowledge-based economy. Here we mean for example methodologies brought by artificial intelligence (discovery of knowledge in databases, text mining) or the fact that the evaluation of a technological project takes exclusively into account the financial situation of the enterprise that carries it and never its talent, social capital, its networks or capacity to think out of the box.

As a consequence, the impact of such a strategy is less efficiency compared to the ambition at the origin.

In France public research is produced by 83 universities, more than 100 advanced schools or high teaching organizations, more than 30 research institutions and foundations. 160 000 employees, 96 000 researchers considered as main actors of technological innovation in France.

Private research sector employs 200 000 persons in four industrial branches: electronics, automotive industry, informatics services, pharmacy. To develop R&D in France it exist almost 4 000 financing procedures.

At the end the processus to promote and facilitate innovation from research, generation of ideas or new usage through development, financing to the end user and the market is so heavy and unreadable that it is inefficient and has an impact on the development pace.

Concerning the Vietnam's science, technology and innovation strategy 2011-2020

The previous and preparatory works that have conducted to a policy formulation processus push ahead new challenges.
The methodological challenges have been addressed. Know, reading and analysing the complete set of documents on the STI strategy, it appears that the new policy will have to adapt to new governance models. Decision–makers including all the stakeholders, will have to take into account the rapid and unforeseen technological changes and societal developments.

They will have to give a particular attention to impact and measurement of these changes and development. In the same time to match their ambition they will have to strictly monitor the implementation phases of their strategy and policy.

In that sense, it appears clearly to us that technology forecasting, technology assessment and technology foresight[1] that have been the methodological support for the building of the strategy shall become the core methodologies for decision-makers in charge of implementing the STI strategy. As a consequence, it has to be organized and better defined in the governmental draft documents.

Let us take the time of a short definition and utility of them.

Technology Forecasting produces for the decision-makers a continuous monitoring of technological developments. It makes possible an early identification of future applications and an assessment of their potential. If it takes broad technological developments and socio-economic aspects into account, the methodology does not produce detailed analyse.

Technology Assessment support decision-making on technology through the analysis of social, economic and environmental potentials of new scientific and technological developments. It is often based on a previous Technology monitoring exercise and helps to better exploit opportunities arising from new technologies. As for the concern of the Government expressed in the following terms: "to pay attention to the adaptation and assimilation of imported technologies", Technology Assessment shall help to focus on societal problems arising from the application of a technology (problem-driven) and to solve it.

Technology Foresight implies a wide range of themes and stakeholders in order to examine the social, economic and environmental aspects of science and technologies. We guess that it will remain the support methodology for strategy-formulation.

Evolution

Today, it is no longer possible to assert that the future can be reliably 'predicted' over the medium to long term: unpredictability becomes the rule. As for Technology Forecasting, it is less oriented toward "quantitative prediction of key characteristics of a certain technology through extrapolation of technology trends" and tends more and more to determine "the factors that govern how technologies develop within a certain field. It proposes recommendations and implementation measures.

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[1] IPTS (Sevilla institute for prospective studies) on strategic policy intelligence (2001)

A second trend arises in which in each area developers consider that the development of technologies is defined not just "by immutable laws of science and engineering, but by the context of application": how different stakeholders analyse and understand the opportunities and risks of a new technology.

A third trend appears to be the most significant change. Each uses and implementers of these three methodologies have become more proactive regarding the development of new technologies and of innovation.

For example, Technology Forecasting application is to evolve more towards supporting the process of technology transfer through facilitating dialogue between suppliers and potential users of technology. This evolution shall be useful to Vietnamese STI strategy decision makers in respect to the concern of assimilation of foreign technologies for example.

As Technology Assessment is concerned, it evolves towards identifying social and political choices concerned with technological developments, going beyond its former role consisting in identifying potential negative impacts of specific technologies. It then evolves toward a combination of the classic technology monitoring with a prospective assessment methodology.

At least, technology foresight evolves toward a process that supports policy-makers mainly at the national and supra-national level in the definition of policy and strategy due to the globalization process.