

COMPENDIUM OF BEST PRACTICES

CREATING DEMAND

FOR LOCAL INNOVATIONS



INDIAN INNOVATORS
ASSOCIATION





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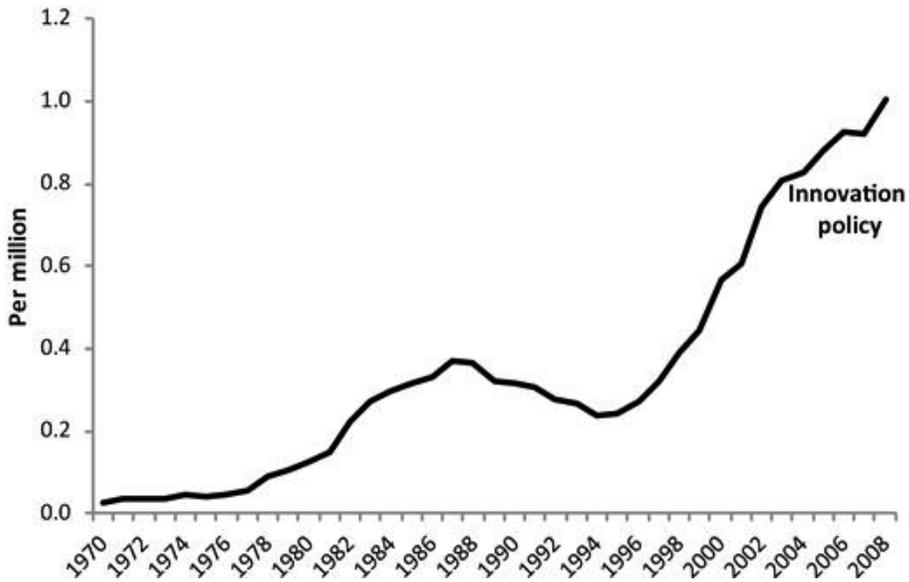
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Chapter 1

DEMAND SIDE INNOVATION POLICIES

Innovation policy is a relatively new item on policy-makers' agendas. As Figure below shows, the term innovation policy wasn't much used a few decades ago. It is only from the mid-1990s onwards that the term became popular among users. In generic terms, '*innovation policy*' is traditionally conceived as a way to support the capability of countries or regions and their innovation systems in producing novelties and putting them to use. The academic and political debate about innovation policy has focused for decades on supporting the generation of innovations. This is best illustrated by the concepts and indicators used to assess and compare the innovativeness and competitiveness of countries, which concentrate primarily on supply-side conditions, activities, capabilities, and interactions. Moreover, innovation policy rational and policy instruments have been developed mainly in the context of developed countries.



(Source: <https://academic.oup.com/oxrep/article/33/1/2/2972712>)

It was the founding father of innovation theory, Josef Schumpeter, who introduced the distinction between invention (*a novel idea for how to do things*) and innovation (*carrying it out into practice*). This perspective points to two aspects of innovation: novelty and implementation. The importance of the exploitation phase was emphasized by the economic historian and innovation scholar, Nathan Rosenberg, who pointed out that *'most important innovations go through drastic changes in their lifetimes—changes that may, and often do, totally transform their economic significance. The subsequent improvements in an invention after its first introduction may be vastly more important, economically, than the initial availability of the invention in its original form'*. Many of these improvements, Rosenberg pointed out, occur in the diffusion phase, through interaction with various involved parties, such as customers and suppliers. Hence, according to this view, innovation policy needs to focus both on the creation of new solutions and their exploitation and diffusion, including the many feedbacks back and forth that occur between the various phases of the innovation process. On this basis three main types of innovation policy may be distinguished.

MISSION-ORIENTED POLICIES

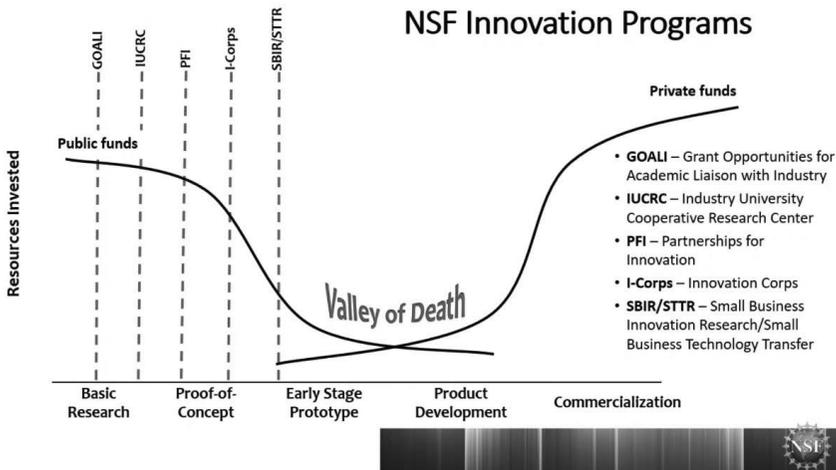
Mission-oriented policies are aimed at providing new solutions, which work in practice, to specific challenges that are on the political agenda. Since the requirement is that the suggested solution works in practice, policy-makers need to take all phases of the innovation process into account when designing and implementing policy. Policy-makers have adopted such policies for number of years for defence purposes, long before innovation policy or even innovation became part of their standard vocabulary, using a variety of labels. Many important innovations, with great economic impact (the internet, for example), have come as the result of such policies.

On 4th October 4, 1957, The Soviet Union launches the first artificial satellite. Called Sputnik, a combination of words meaning “*fellow-traveler of Earth*,” it weighs about 184 pounds. Sputnik circles the globe beeping radio signals, demonstrating that the Soviets have rockets that could send warheads anywhere on Earth. In 1961, Yuri Gagarin becomes the first man in space. This event triggers the space race between the United States and the Soviet Union. On May 25, 1961, President John F. Kennedy announced before a special joint session of Congress the dramatic and ambitious goal of sending an American safely to the Moon before the end of the decade. Kennedy’s goal was accomplished on the Apollo 11 mission when astronauts Neil Armstrong and Buzz Aldrin landed their Apollo Lunar Module (LM) on July 20, 1969, and walked on the lunar surface, while Michael Collins remained in lunar orbit in the command and service module (CSM), and all three landed safely on Earth on July 24. India also achieved notable success in its space programs. The Indian Polar Satellite Launch Vehicle has proven to be a very reliable vehicle and on the world market the significantly lower costs make it a contender to compete with the more established nations. India has made history by becoming the first nation to reach Mars and enter the planet’s orbit in its maiden mission, a move that catapults the country into the scientific world stage.

INVENTION-ORIENTED POLICIES

Invention-oriented policies have a narrower focus, in the sense that they concentrate on the R&D/invention phase and leave the possible exploitation and diffusion of the invention to the market. Such policies became popular in many countries in the early part of post-Second World War period, fuelled by the belief among policy-makers at that time in the potential benefits that advances in science and technology might have for society as a whole. This also led, particularly from the 1960s onwards, to the creation of new public organizations, such as (technical) research councils, for channelling such support to firms and public research organizations of various types. Such support was in the past usually considered as part of R&D, research, or science policy but is today often classified as innovation policy.

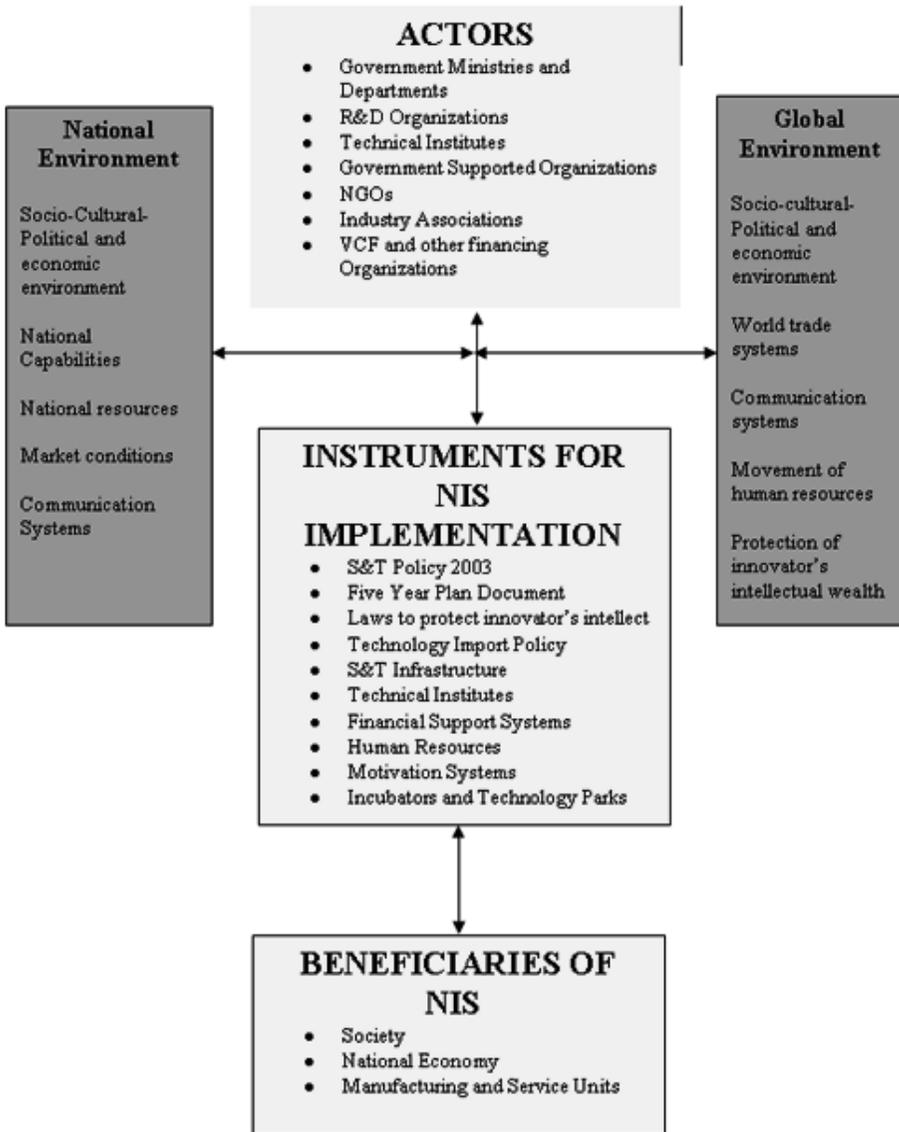
In technology transfer, the “*valley of death*” is the metaphor often used to describe the gap between academic-based innovations and their commercial application in the marketplace. Although traditional definitions of technology transfer often assume a smooth shift of intellectual property from university (or private) research laboratories to private or publicly held companies that commercially develop the technology, the valley of death suggests that the practice is anything but smooth. In fact, this rather grim metaphor implies that academic research is in some way cut off from the outside world. Different nations are working on different programs to bridge the Valley-Of-Death and all of them take commercial firm as important stakeholder.



SYSTEM-ORIENTED POLICIES

System-oriented policies are of more recent origin and focus. As the term suggests, the focus is on system-level features, such as the degree of interaction between different parts of the system; the extent to which some vital component of the system needs improvement; or the capabilities of the actors that take part. The development of such system-level policies is related to the emergence of the so-called '*national innovation system*' (NIS) approach around 1990 and its subsequent adoption by the Organization for Economic Cooperation and Development (OECD) in policy advice and evaluation.

National systems of innovation evolve historically and show path-dependent character, i.e. resisting capacity towards the changes in the environment. It is also implied that there are no universal policy solutions or instruments that can be effectively implemented independently from the concrete context of the given country. National innovation systems are more than frameworks for interaction however, they are also repositories of various resources that firms depend on in their innovation activities and home to various institutions influencing these. Empirical research had shown how successful innovation depends on several different factors, such as knowledge, skills, financial resources, demand, and so on, which to a large extent have been regarded as being provided within the nation—hence the term 'national' innovation systems. Subsequently, the provision of these various factors, which are often seen as complementary, has in the innovation-systems literature invariably been labelled functions, processes, or activities. Arguably, if the system does not sufficiently provide for those factors—such as demand for innovation, access to complementary knowledge and skills, or supply of finance, we may speak of a 'system failure' hampering innovation activity.



(NIS-India-APCTT)

National innovation systems bring to the forefront the central role of the state as coordinating agent of public resources, often with the emphasis on research and development and innovation commercialisation. In sectoral innovation systems the emphasis is on a group of firms that develop and manufacture products for a specific sector and that generate and utilise

the technologies of that sector. The boundary of the system is drawn around a technological paradigm that is formed by a knowledge base, specific technologies and inputs, the different actors and networks that are systemically interacting, and the institutions supporting a specific industry. On the other hand in Local and regional innovation systems, the focus is on the configuration of regional networks, organisations and institutions, which are in turn mainly focused on a specific geographic space and the specific knowledge spill-overs that occur around certain firms, industries or institutions unique to that space. Within a particular region in a country, all three of these innovation systems perspectives could be relevant; yet industries, individuals and whole regions might not even be aware of their existence.

Thus, innovation policy, in the sense of policies affecting innovation, consists of a range of different policies (and policy instruments) that have been introduced at various points in time, with different motivations, and using a variety of labels, including, increasingly, innovation policy. For example, much of what is called innovation policy today may previously have gone under labels such as industrial policy, science policy, research policy, or technology policy. Innovation policy is going beyond the well-known “*top-down*” and “*bottom-up*” dichotomy of the stakeholders. It insists on the necessity of interactions between different players and various levels of fields of actions too. In this section we were also looking for elements of policy learning processes in the national reports, to what extent these policies are capable of learning and what kind of feedback mechanisms exist. Monitoring and evaluation tools were also assessed.

There is a shift in UK innovation policy from a knowledge-transfer and institution-focused approach towards an open and collaborative system, involving active participation of not only the government but its partner organisations and individual citizens as well. Beside the UK-level policy, Scotland, Wales and Northern Ireland have their own innovation policies reflecting much more their local needs and capabilities. In German system professional and business organisations play a decisive role in shaping the innovation policy and its projects. A good example for that

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