Consulting and extension services by universities and PRIs

While academic consulting consists of researchers advising or working with firms on particular problems, extension services often consist of providing off-the-shelf solutions to small- and medium-size enterprises’ technical problems. Through consultancy and extension services, universities and public research institutes help organizations achieve certain short-term and strategic objectives in their innovation activities. Consultancy and extension services are a form of auxiliary activity that does not have direct innovation output but rather helps other agents to improve their capabilities and identify critical issues needed to produce innovative products, processes, or services.

What are consulting and extension services by universities and PRIs?

Universities and public research institutes not only actively participate in direct research and development activities but also often share their soft innovation skills through a set of mechanisms, including advice, consultancy and extension services. These mechanisms are usually realized through formal or informal links between the scientific community, business and/or government and may be a result of either contractual relations or informal contacts. As a rule, such services do not imply a transfer of intellectual property but rather aim to help businesses and governments achieve particular short-term and strategic objectives in their innovation activities.

In this context, the following definitions may be applied:

- **Academic consulting.** Public sector researchers have knowledge and specialized skills, which are valued by firms and are generally unavailable elsewhere. Researchers therefore often engage as consultants, either on their own or through their institutes, to advise or work with firms on particular problems.

- **Extension services.** Traditional small- and medium-size enterprises (and even larger firms) often lack knowledge of and access to readily available technologies that could improve their productivity or help resolve a particular problem at the later stages of their innovation cycle. Extension services try to modernize SMEs’ operations by inducing them to innovate through technology adoption. Assistance often consists of providing off-the-shelf solutions to SMEs’ technical problems but they can also channel more recent innovations generated by public sector research to SMEs, especially to those that may not normally have access to such information. Such services are commonly administered by technology centers that have relatively close relations with universities and PRIs.

- **Scientific advice.** This includes membership in standing expert committees, invitations to contribute to scientific enquiries, and informal contacts with policy makers and regulators. (See Policy Advice and Consulting by Universities and PRIs for details)

How do consulting and extension services by universities and PRIs contribute to innovation performance?

As a rule, consultancy and extension services are a form of auxiliary activity that does not transfer specific technologies or research results directly to the customer.
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Published on Innovation Policy Platform
(https://www.innovationpolicyplatform.org)

• Poehl et al. (2004) noted that consulting and contract research is especially useful with product
differentiation and improvement.

• Thus, the main contribution of consulting and extension services is in sharing innovative
innovation with industry, although firms first need to recognize the problem that is impeding effective
innovation development.

• These services also allow innovative firms to use extension infrastructures through task-
specific collaborations with universities and public research institutes.

• Extension services are explicitly designed to diffuse new technologies and practices, and can
build a strong base of relationships between industry and public research organizations promoting
extension services.

• Networking and standardization are an important type of extension services where university
quality of their products, processes and services.

• New entrants and existing firms participated in activities related to proof of concepts that were
prototypes and ideas at initial stages.

• The process of collaboration between publicly funded research organizations and industrial
universities facilitates the establishment of extension services can have positive impacts on
the incremental innovation output of local firms.

Conditions ensuring the contribution of consulting and extension services by universities and PRIs to innovation performance

• One of the main rules of consultancy work is not to talk clients what they already know.

• Prior business or consultancy experience and background of services, researchers generally have
stable relations with industry and policy makers.

• Mutual trust is a critical factor in the success of consultancy and extension services that will
remain within the confines of the partnership.

• Although networking is an important tool for continuous R&D collaboration, a good match in
building trust and sustainability is needed in industry links.

• Experienced scientists who have been involved in consultancy and extension services related contracts.

• The types of university-industry collaboration have been found to be quite diverse across
technologies. While basic science research in physics and chemistry is more in demand, research services are more in demand.

Measurement

Some countries measure income from academic consulting services, but such data tend to be
available only at the institutional level and are likely to be incomplete, given the amount of private
consultancy academics engage in. Perkmann and Walsh (2007) also mention that the evidence on
such activities is obscured by the fact that academics may choose not to report their consultancy
work to their respective employers.

Extension services are regularly reported by PRIs at an organizational level, though this information
is rarely collated at a national level.
What policies relate to consulting and extension services by universities and PRIs?

Policy rationales

In general, consultancy is considered a lower-level activity that may be self-regulated by universities and public research institutes, since these services are usually delivered by individual researchers or small groups of scientists. Therefore, the major arrangement to be made concerns the amount of time available to the members of staff for consultancy work in their overall workload. For example, in some western countries, including USA, UK and Germany, universities provide an incentive for researchers to conduct consultancy work by allowing them spend up to 20% of their time on such activities (Schmoch, 1999). Some universities also choose to establish special research departments to concentrate needed resources and specialized expertise in one place for effective contract research (Debackere and Veugelers, 2005).

However, when it concerns systematic science-industry links and consistent knowledge exchanges, the government has every reason to intervene to support these kinds of activities. In this context, extension services should be considered separately from advice and consultancy, since they often imply direct knowledge and technology transfer to SMEs that lack certain capabilities and resources, hence helping them to grow.

Usual market failure arguments are useful as good policy rationales, since consultancy and extension services may resolve certain information asymmetries by disseminating more expert knowledge among market agents, as well as prevent risk aversion by providing scientific evidence of certain phenomena or carrying out a proof of concept.

System failures can also be used as an appropriate policy rationale, as any sort of collaboration between industry and academia permits to resolve capabilities and network failures by improving innovation networks and interactive learning.

Infrastructure failures can be overcome by allowing innovative enterprises to use the R&D infrastructures of universities and PRIs that agreed to provide them consultancy or extension services.

Policy objectives

Policy objectives regarding consulting and extension services by universities and PRIs include:

- improving legal and regulatory frameworks, allowing for more open collaboration between firms and universities on consultancy projects and beyond
- encouraging firms to establish stable links with universities and PRIs, where advice and extension services may be an important first step in building a more stable relationship
- facilitating the participation of researchers in task-specific collaborative activities with firms, even if they will source some knowledge and data from publicly funded research projects
- promoting institutional development, enabling effective science-industry consultancy links and other forms of collaboration.

Policy instruments

Policy may support consulting and extension services by universities and PRIs by:
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Aligning legal and regulatory frameworks with the objective of better science-industry links in the innovation system.

Promoting innovation networks and clusters. This could include establishing specialized forums, technology platforms, expos and other events/institutions where scientists and entrepreneurs may meet each other, exchange ideas and continue to collaborate afterwards.

Promoting the development of special intermediary organizations, such as technology transfer offices to facilitate science-industry links, and providing professional assistance for the management of consultancy and extension service agreements.

Providing incentives for university researchers to collaborate more openly with the private sector.

References


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