

**Innovation without invention
Knowledge utilisation in SMEs**

Summary

Request for advice: improving knowledge utilisation in small and medium-sized enterprises (SMEs)....

The Minister of Economic Affairs (EZ) has requested advice from the Advisory Council for Science and Technology Policy (AWT) on the government's role in improving knowledge utilisation among small and medium-sized enterprises (SMEs). The Council based its advice on the assumption that there is no single, defining SME per se; instead, SMEs are characterised by tremendous diversity in terms of the way in which the various enterprises are innovative, and consequently also in terms of needs and problem areas related to knowledge utilisation. Policy must be developed accordingly.

....with a focus on the 'appliers'

This advice is geared toward the 'appliers' of knowledge; specifically, the broad middle category of SMEs that innovate by using and applying existing knowledge. Or, to paraphrase, this advice centres on businesses that 'innovate without inventions'. The focus on appliers defines two sides. One is the large group of 'other SMEs' where innovation is not part of regular operations and which is therefore not among the innovation policy target groups. The other side defined by the focus on appliers is the group of SME leaders in innovation, which are companies that have in-house R&D staff and are very much involved in developing new knowledge.

They are largely overlooked in policy at the moment...

The Council's choice of the appliers was motivated by two factors. First, there was the fact that much of the current innovation policy anticipates the needs of companies that innovate by developing new knowledge. The government sets aside the majority of its innovation budget to stimulate such efforts.

...even though they are a large and economically significant group of SMEs

Second, the Council noticed that the group of appliers means a great deal to our economy and level of employment. The group of companies involved is quite large, specifically an estimated 200,000, with considerable innovation potential. The strength of their specific innovation practices is based on the utilisation and application of existing knowledge. As a result, they can often innovate both quickly and effectively. There are thus many innovative companies among the appliers that deliver outstanding economic performances. This group of companies is essential for turning the Lisbon ambition into reality.

Therefore, strengthen the appliers' innovation practices

This advice is mainly geared to supporting the appliers in a way that suits their 'innovation without invention' innovation practices. Therefore, the object of innovation policy for this segment of SMEs should not be to transform the appliers into knowledge-driven front-runners. The fact that this is a large group of companies cannot justify neglecting these businesses. Instead, the very challenge lies in developing a set of policies that fits this group of businesses - and is feasible given the group's size.

Characteristics of these innovation practices: pragmatic, goal-oriented, instructive

The appliers innovate in a pragmatic, goal-oriented manner. In many cases, identifying new opportunities in the market or customer requests act as the impetus, with the result being improvements to existing products, processes or services. As such, appliers start with a more or less concrete idea of what they wish to develop. Next, they launch a specific search for outside knowledge and expertise to flesh out the knowledge that they have in terms of market, product and production process. The acquisition of knowledge is therefore strongly geared toward utilisation and application. All in all, the appliers' innovation process can be described as 'learning by doing', not inventing. Hence the concept of 'innovation without inventions'.

Points to improve as regards knowledge acquisition and utilisation

A number of problems emerge during the process in which appliers arrive at innovations, and in the accompanying knowledge acquisition. In terms of the appliers, an important factor is the relatively low level of education among personnel. As a result of this, they often do not know their way around the public knowledge institutes, and they frequently do not have enough capacity to absorb knowledge. Additionally, the AWT noted shortcomings in structural facilities for knowledge diffusion, and moreover that businesses often have trouble pinpointing where it is they need to go with specific questions. Finally, accessibility to those parts of the public knowledge infrastructure that are relevant to the appliers could stand improvement; in this sense the AWT places special emphasis on colleges and the Netherlands Organisation for Applied Scientific Research (TNO).

Businesses are primarily responsible on their own, but the government, too, plays a role
The AWT believes that the aforesaid information problems facing appliers and the ensuing market failures justify an active government policy. The AWT adds that reinforcing the innovation potential of appliers by developing competency should also be a concern of the state. To a significant degree, it determines the development of these companies' productivity and their competitive muscle, which is in the public interest.

Recommendations: strengthen the appliers' innovation capacity

With this advice, the AWT is expressly arguing that policy should focus on the group of appliers in the SME sector. The Council realises that these policy waters are not entirely uncharted. The recommendations do in fact partly stem from existing policy and policy experiments such as knowledge vouchers and the Regional Attention to and Action on Knowledge Circulation (*Regionale Aandacht en Actie voor Kenniscirculatie* - RAAK) initiative. The Council expressly argues for the reinforcement and tightening up of such initiatives geared toward the appliers. The following recommendations are directed first and foremost at the Minister of EZ. In a number of them the AWT also addresses the Minister of Education, Culture and Science (OCW) as the party directly responsible for the public knowledge infrastructure. Coherent and effective policy for the appliers calls for harmonisation with EZ and OCW policy.

The Council's recommendations are as follows:

Recommendation 1: Increase the level of knowledge in companies

- Promote contact between SMEs and students.
- Stimulate education of employees.
- Encourage the hiring of people with higher levels of education in the SME sector.

Recommendation 2: Provide a solid infrastructure for knowledge diffusion

- Build on the existing infrastructure for knowledge diffusion and make it more transparent.
- Provide structural financing for the knowledge diffusion infrastructure and guarantee that the business sector provides direction.

Recommendation 3: Support the obtaining of advice for innovation

- Support the obtaining of advice for innovation by expanding the knowledge voucher tool and broadening its permitted use.

Recommendation 4: Improve the alignment with colleges and TNO

- Stimulate colleges to focus more on appliers and call them to account accordingly.
- Order TNO to concentrate more on appliers and test the strategic plan accordingly.

Recommendation 5: Involve appliers in government calls for tenders

- The government should pay special attention to appliers within the SME sector in its tendering policy, and avoid unnecessary restrictions.