

Trading in knowledge. University patenting policy for the benefit of utilising knowledge.

Focus and question addressed

This advisory report of the Advisory Council for Science and Technology Policy (AWT) discusses the policy of public research institutes, in particular universities, towards patenting. The report focuses on the usefulness and effectiveness of the patenting policy of universities; in other words, how universities deal with patentable knowledge. This raises the following questions:

- What are the appropriate objectives of patenting policy in universities? What is the relationship between patenting and the public tasks of universities? Should universities apply for patents more actively and more frequently?
- Given the objectives, what basic principles should apply for university patenting policy? Who is the most appropriate party to apply for a patent? On what subjects should further agreements be made with the user of a patent?

Main arguments

The wider context

The Council's intention is not to look at the patenting policy of universities in isolation, but to place it in the wider context of more intensive use of the knowledge developed in public research institutes. The ultimate aim of this is to stimulate innovation and step up the intensity of innovation in the Netherlands. This leads the Council to express the following reservations about, and even warn against, placing too great an emphasis on patenting by universities as such:

- the number of patents submitted is not synonymous with the degree of innovation in a country; innovation is determined by many other factors;
- patents are not the only way of promoting the use of knowledge from universities. There are many other – and also more important – ways of doing this;
- utilising knowledge and stimulating innovation are neither the only nor the most important reasons for publicly-funded research.

Aim of university patenting policy

The AWT takes the view that the patenting policy of universities must above all contribute to a more intensive use of knowledge. This is its principal objective, which leads the Council to the following conclusions:

- patenting policy is part of the 'public service task' of universities. In this context, the priority should be on the use of patents, not on the number of patents granted to universities;
- Generating income for the research institute concerned should not be a principal aim of university patenting policy; any income should at best be a positive spin-off;

Society benefits more from a university patenting policy based on considerations of knowledge transfer and utilisation of knowledge than from a policy based on considerations of local profitability.

Basic principle of university patenting policy

The above formulation of the objective of university patenting policy leads the Council to the following basic principle for this policy: universities should preferably leave the actual patenting of knowledge or inventions developed in universities to companies. Applying for and holding a patent by a university itself should be an exception to this rule. The Council has two underlying reasons for this view. Firstly, patents are 'by their very nature' of far more direct relevance for companies. One of the core activities of companies is to review possibilities for the commercial development of knowledge – including knowledge protected by patents – and to act accordingly. In principle, this is not a core activity of universities. Secondly, and more pragmatically, universities lack the (market) insight, the necessary expertise and the financial resources to establish a worthwhile patent portfolio or to manage, protect and make a profit from it.

Basic conditions for university patenting policy

Because the knowledge concerned is, at least in part, publicly financed, the formulation and instruments of university patenting policy must reflect a number of basic conditions. The Council identifies the following aspects:

- agreements with the company concerned on the actual use of the patent;
- stipulation of a 'fair' price for the exclusive right granted to a company for the use of publicly-financed knowledge;
- agreements with the company concerned to prevent unnecessary restrictions on publication and access to knowledge.

Recommendations

Preamble: responsibility of universities and of the government

The Council realises that the universities, as autonomous research institutes, are primarily responsible for their own patenting policy. In this report, the council suggests that this policy should be seen as a vehicle for the transfer and utilisation of knowledge. Universities should formulate their patent policy from this perspective. In this sense, the report offers a framework and ideas for universities.

In this advisory report the Council suggests that patenting policy is just one of the ways of making knowledge public and stimulating its use. It underscores the importance of patenting in some situations, but at the same time warns that this policy can only flourish in a climate where universities are very alert to possibilities for transferring knowledge and stimulating the use of knowledge. The Council wants to take this opportunity to highlight this particular aspect. In the following box it gives a number of suggestions for fostering such a climate.

Networking and interaction between universities and companies

The AWT attaches great importance to stimulating the creation of networks and interaction between universities and companies. This calls for entrepreneurial scientists, scientists whose antennas are finely attuned to what is happening in the private sector and society, and who are alert to economically and/or socially valuable research results. Heads of faculties and research directors can play a role in promoting this.

Embedding a sense of which knowledge can be patented in regular activities

The AWT feels that awareness of economically and socially valuable knowledge—which is sometimes patentable knowledge – can best be embedded in the regular activities of a university. The Council does not favour the appointment of individuals whose task is to recognise economically and /or socially valuable research results internally and bring researchers in contact with interested companies and/or civil organisations. Liaison officers of this type are only useful in exceptional cases.

But Ph D students (AIOs) or post-docs could act as ‘patent scouts’: this would involve spotting research results which could be commercially interesting in their research group. This could be encouraged by promising a bonus for the ‘discovery’ of patentable research results.

Using patent literature in education and research

There is a great deal of valuable knowledge to be found in patent literature which is not sufficiently used for education and research. In scientific research, patent literature can form an important source of knowledge. In education, the use of patent literature can alert students to the value of this source. In this way, universities can stimulate the actual use of knowledge and hence – in time – promote innovation.

As already mentioned, universities themselves are primarily responsible for their patenting policy. Nevertheless, the government (the Ministry of Economic Affairs and the Ministry of Education, Culture and Science) also have a responsibility in this area. After all, the government has set itself the task of creating the right conditions for innovation and removing as many obstacles to innovation as possible.

One aspect of the government’s role as facilitator is to formulate clear objectives and tasks for public research institutes. On the specific point of university patenting policy, from a macro perspective this means specifying what is needed and what contribution the public research institutes are expected to make. The universities themselves will not automatically adopt this macro perspective.

Recommendations

1. The Council feels that the government (the ministries of Economic Affairs and Education, Culture and Science) can exert the greatest influence by defining the goal of university patenting policy. This opinion presents the Council’s views on this: the aim of university patenting policy must be to intensify the use of knowledge developed in universities rather than the generation of income for the research institutes concerned. What ultimately counts is the use of patents, not the number of patents granted to universities.

The AWT therefore makes the following recommendation to the ministries of Economic Affairs and Education, Culture and Science:

- *Do not encourage universities to seek more patents as such. Far more important than stimulating universities to apply for more patents is stimulating an active university policy focused on the actual use of patentable knowledge. This issue should be raised in discussions of respective responsibilities.*

2. Given the major differences between the various business sectors as regards the need for and practical use of patents, university patenting policy should be flexible. It

should enable the different scientific fields to properly serve the sectors relevant to them. Uniform regulations governing university patents are therefore pointless and undesirable. What is needed, the Council feels, is consensus on the aim of university patenting policy, its basic underlying principles and the basic conditions to be adopted. The Council observes that every university – where applicable – currently has its own considerations and makes its own choices in this regard. This is problematical for companies because they usually do business with a number of research institutes. They are consequently confronted with differing patent 'regimes'. Moreover, companies are sometimes confronted with unrealistic expectations and negotiating conditions. The current situation is also disadvantageous for universities because each institution has to make its own choices, which leads to unnecessary repetition. In addition, the universities can be played off against each other, which can lead to less favourable agreements.

The AWT therefore calls on the universities to reach agreement with each other and with the ministries, but preferably also with the commercial sector, on the main points of university patenting policy. Our recommendation to the Association of Universities in the Netherlands (VSNU), the Netherlands Organisation for Scientific Research (NWO), the ministries of Economic Affairs and Education, Culture and Science and the employers' organisations VNO-NCW and the organisation representing SMEs in the Netherlands (MKB Nederland) is:

- *Try to reach agreement on the broad general principles of university patenting policy (according to the AWT: preferably leave patenting to companies) and the basic conditions that should apply (according to the AWT: stipulate fair price, make active use enforceable and limit confidentiality). The University Patent Policy Platform (Platform Universitair Octrooibeleid), formed by the Netherlands Industrial Property Office of the Ministry of Economic Affairs, could provide the forum for these discussions.*

3. In light of the basic principle that universities should leave the actual patenting to companies, as formulated by the AWT in this advisory report, it is unnecessary for the universities to build up extensive experience in the area of patenting as such. On the other hand, the universities must have access to expertise in the area of valuation of intellectual property, as well as knowledge of and negotiating skills relating to the terms that should be included in patent contracts. The Council feels it is inefficient for each university to develop the necessary expertise individually. This leads to the following recommendation to the universities and the ministries of Economic Affairs and Education, Culture and Science:

- *Facilitate a national helpdesk for transfer of (options to) patents, which universities can consult for professional support and advice on the drafting and practical implementation of their patent policy. This helpdesk can also promote the exchange of knowledge. In setting up the helpdesk seek the advice of organisations that already have the necessary expertise, such as the Technology Foundation STW.*

4. In this advisory report, the Council states that the number of patents awarded to universities is not a good indicator of the contribution made by universities to innovation. A better indicator is the number of university co-inventors named in patents of companies and the references to university research in corporate patents. Some of this information is registered: Dutch and European patents do contain the names of university co-inventors, but not the references to scientific

research. But where this information is available, it is not sufficiently used as an indicator. To monitor the contribution of universities to research-based (company) patents, additional and more targeted research is needed. As regards monitoring of the university contribution to patent-based innovation, the AWT recommends that the ministries of Economic Affairs and Education, Culture and Science:

- *Commission regular research into university co-inventorship for the purpose of the Science and Technology Indicators. In addition, the government should press to have references to scientific research included in Dutch and European patents, as is customary in the United States.*

5. Researchers are nowadays assessed and 'judged' primarily on their scientific publications. The Council is of the opinion that a broader definition of the quality of research is needed: research should be assessed not just on scientific criteria (measured by the number of publications and citations), but also, for instance, on its response to social issues. The theory is that in this way researchers will be encouraged to expand their horizons, to look for interaction with companies and civil organisations, and will be alert to the economic/social usefulness of research. One of the indicators of this last point could be co-inventorship as registered in Dutch and international patents; citations in patents might also be taken into account. The AWT makes the following recommendation to the VSNU and the Ministry of Education, Culture and Science:

- *During reviews by review committees give more attention and assign greater weight to alertness of research groups to potential economic/social utilisation of knowledge. The Council realises that responsibility for this rests with the VSNU; the government (the Ministry of Education, Culture and Science) should insist that this point is raised more expressly during reviews.*

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B.P.Th. Veltman
chairman

Mrs V.C.M. Timmerhuis
acting secretary