

The commercial exploitation of intellectual property rights by VTT Technical Research Centre of Finland

According to section 1 of the Act on the Technical Research Centre of Finland (144/1972, amended by 1041/1983), its task is to maintain and raise the level of technology in Finland and to satisfy public and private research and testing needs by procuring, creating and applying technical and techno-economic information. VTT Technical Research Centre of Finland (as it is now known) produces a wide range of technology and research services for domestic and international customers, businesses and the public sector. It is the biggest multitechnological applied research organisation in Northern Europe.

VTT Technical Research Centre of Finland had a turnover of 217 million euros in 2006. A lot of this came from the public sector (about 67% in 2006), with the private sector accounting for only about one-third.

It has been estimated that intangible assets (tacit knowledge etc) form over 75% of businesses' value. In the case of a research institute such as VTT, the share is probably even higher. VTT's activities result in intellectual property rights, of which patents form the visible, officially documented part. VTT's intellectual property rights include the patents it holds, patent applications, computer software, inventions it has claimed, confidential knowledge and other intangible rights.

In March 2007 VTT held a total of 370 patents. In 2006 it ranked fourth among Finnish organisations in terms of patent applications (55), behind Metso Corporation (155), Nokia Corporation (74) and Kone Corporation (61).

In 2007 the book value of VTT's intangible assets was 9.4 million euros, including 1.6 million euros in patent rights. The book value of patents is based exclusively on patent costs and not on the actual work or equipment costs associated with an invention. Intel-

lectual property rights should be evaluated realistically in the balance sheets of state agencies and units as well as central government accounts.

The main question in the audit was: How well has VTT Technical Research Centre of Finland succeeded in commercially exploiting the protected intellectual property rights (IPR) that it owns?

Income from the sale and licensing of intellectual property rights do not form a significant share of VTT's turnover or profit. In 2006 the objective was to obtain 1.7 million euros in licensing income, but only 52% of this was actually received. On the other hand in 2007 the objective was 2 million euros and this was achieved. In 2006 income in this category accounted for less than 1% of turnover. By comparison in 2005 the Fraunhofer-Gesellschaft organisation in Germany received 134 million euros in licensing income or nearly 11% of its turnover, and the figure in 2006 was 69 million euros or 6% of turnover.

Every year since 2005 the budget has given VTT the right to become a partner and make investments in enterprises exploiting its technology. This involves transferring state assets to a private enterprise. Such a right should be made permanent by including a provision to this effect in the Act on the Technical Research Centre of Finland, if this right is considered appropriate. In preparing the state budget each year a decision would be made on the maximum amount of investments and transfers of intellectual property rights.

In the opinion of the National Audit Office, the Ministry of Employment and the Economy should in the near future consider whether it makes sense for VTT to act as an investor, since the state has several other actors in this capacity. Investment activities require expertise and VTT's financial clout is quite modest. In any case VTT should develop a system for monitoring spin-off ventures and the Ministry of Employment and the Economy should commission evaluations of activities from time to time.

According to data collected in the audit, a total of 68 spin-off ventures were created in 1980-2005 on the basis of technology developed by VTT. At the time of the audit (16 March 2007) 45 of these were still operating, according to the Trade Register. Turnover among these 45 spin-offs ranged from 7,700 euros to 12 million euros. The average turnover was about 2 million euros. The number

of personnel ranged from 1 to 67, with the average about 13. Spin-offs were located mainly in southern Finland.

VTT created 12 spin-offs in 2000-2006 or 1.7 a year on average. The rate has slowed since 1980-1999, when the average was 3.3 spin-offs a year. It should be noted that since 2006, only enterprises in which VTT has invested capital are classified as spin-offs. According to a study conducted by Sitra, the Finnish Innovation Fund, in 2000-2006 the Helsinki University of Technology created 39 research-based enterprises and the Tampere University of Technology 37. In the light of these figures VTT's performance was quite poor compared with universities, especially since universities mainly focus on basic research and VTT on applied research.

Since the establishment of VTT's business development function, up to 31 December 2007 or in a period of two years a total of 13 spin-offs were created, exceeding objectives. The spin-off rate has clearly been improved, but only the longer term will show whether this change is permanent. Financially speaking, turnover and profit are more important than the number of spin-offs.

One problem in commercialising VTT's intellectual property rights may have been and may be that the innovation process at VTT has been based on a traditional linear model and links to markets have been weak. As a result commercialisation has been more challenging than in the case of market-oriented innovations. With a linear model commercialisation can only succeed if every stage of the innovation process always leads to the next stage (for example applied research to product development). The technology-oriented approach also helps explain why the commercialisation of VTT's intellectual property rights has been so poorly developed. The precondition for successful commercialisation is that the value of intellectual property rights can be specified or evaluated. One means is cost-based evaluation, which can be used as a measure and starting point in evaluating the market price.

With its reorganisation at the beginning of 2006, VTT has intensely developed its IPR organisation and processes so that technical, commercial and legal expertise can be combined in commercialising investments. VTT should make sure that intellectual property rights financed by the state are exploited commercially so that Finland and taxpayers receive benefits from them.

VTT's status as a state agency has been viewed as an obstacle to developing business operations, whose significant but practically unused potential consists of IPR. As a solution it has often been proposed that VTT should be transformed into a state enterprise, limited company or public corporation. The problem with these options has been to find a way to coordinate such a business model with VTT's basic social tasks.

During the first and second Cabinets of Prime Minister Matti Vanhanen, a project has been under way to transform VTT into a state enterprise. In this connection other options have not been given further study. In a decision that it issued on 11 December 2007 the European Commission considered that the protection against bankruptcy and favourable tax treatment enjoyed by the Finnish Road Administration constituted prohibited state aid. The Commission is also looking into the transformation of VTT into a state enterprise. This process is in the early stage. On 29 January 2008 the Cabinet Economic Policy Committee decided that measures to transform VTT into a state enterprise should be suspended.

In studying the organisation of VTT, a purchaser-provider model has been envisaged. The ministry's position as a purchaser would in practice be apparent, since VTT would in fact decide what the purchaser orders. On the basis of the audit, a purchaser-provider model would make it even more challenging to measure the effects of VTT's activities, since ministerial and other political steering would be considerably reduced.

Looking at VTT's legal status from the viewpoint of the commercialisation of the intellectual property rights that it owns but has not yet commercialised, one might conclude that a state enterprise or limited company could be the most efficient and flexible way to manage IPR. On the other hand IPR-based commercial activities at least for now constitute a very marginal part of VTT's activities. The real costs of IPR activities, on which information is not available, are probably quite large, so it is possible that activities are not economically viable.

Competitors may feel that VTT enjoys better operating conditions as a result of the amount of budget financing, low revenue requirements or an enviable balance sheet structure.

In the opinion of the National Audit Office, before VTT's legal status is changed, careful thought should be given to ensuring that

VTT remains a not-for-profit public research organisation under EU rules, that it does not distort competition and that the current level of R&D and EU funds is not endangered. This requires a proper study of VTT's competition and market situation in Finland and internationally. Steps should also be taken to ensure that VTT's impartiality and objectivity as a state research institute are not jeopardised.