

## **Factsheet on Denmark: Business Sector Research, Development and Innovation**

### **Promoting research, development and innovation**

The national policy to promote research, development and innovation in the business sector focuses on supporting both innovation actors and innovation projects advancing cooperation between knowledge institutions and companies. The national policy can be divided into four main areas:

#### **1. Commercialisation of public research**

Similar to a number of other countries, the commercialisation of public research in Denmark is centred on the research institutions and the associated science parks.

Ownership of intellectual property to public research inventions is accorded to the research institutions, of which most have developed professional units for technology transfer. Furthermore, a legislative act has recently permitted Danish universities to establish subsidiary companies for technology transfer to promote the commercial transfer of patents and licences to trade and industry.

Also, the state finances seven innovation incubators, which every year conduct 300 preliminary analyses of the scientific and commercial potential of innovative ideas, inventions and research. On this basis, the incubators contribute to the start-up of approximately 60 new innovative and knowledge-intensive companies.

Vækstfonden is a government-sponsored investment fund with a capital base of EUR 300 million. The fund invests in early stage ventures focusing mainly on Life Science/Med Tech and High Tech, and provides mezzanine financing to a broad range of industries. Together with its portfolio funds, Vækstfonden represents 26% of the total capital under management in Denmark in 2005. Please see the factsheet on promoting entrepreneurship for more information on the Danish market for risk capital.

#### **2. The GTS Institutes**

The GTS (Authorised Technological Service) Institutes construct and develop commercially oriented knowledge and technology, and make it available – on market terms - to the Danish authorities and business sector. A particular obligation of the institutes is the development and accessibility of technological knowledge to the SMEs.

The Danish network of GTS Institutes consists of seven institutes. The institutes uphold a staff of approx. 3,000 employees and have an annual turnover of more than EUR 300 million (2004). The public grants to the GTS Institutes constitute approx. 11% of the turnover.

A recent CREST report concluded that the Danish GTS system delivers an exceptionally strong performance in the European context.<sup>1</sup>

### **3. The access to highly educated labour**

The employment of highly educated labour is one of the most important channels for diffusing knowledge from research institutions to private companies. Today, about 50% of all graduates are being employed in private companies. In order to spur this way of disseminating knowledge, the Industrial PhD Initiative grants financial support to companies employing researchers.

Furthermore, through the Knowledge Pilot (Videnpilot) Initiative, subsidies are granted to companies with less than 100 employees when engaging a highly educated employee for the first time.

### **4. Cooperation between research institutions and companies**

Cooperation between research institutions and companies is another important means of diffusing knowledge. The state supports a number of development projects, which are carried out in syndicates consisting of both companies and knowledge institutions. Two examples are the Danish National Advanced Technology Foundation and the Innovation Consortia.

Funding is also provided for the establishment of networks, such as the Networks of High Technology and the Regional Technological Centres.

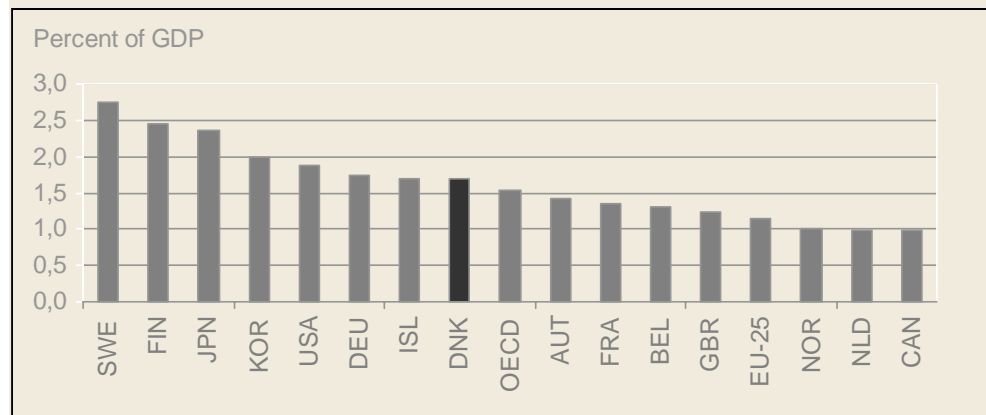
### **Business expenditure on research and development**

Considering the level of business expenditure in the OECD member states, Denmark ranks among the top eight countries, cf. chart 1. In 2004, the Danish business sector invested what corresponds to 1.7% of the Danish gross national product (GDP) on research and development (R&D).

**Chart 1: Business Expenditure on R&D, 2004, percent of GDP**

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<sup>1</sup> Report of the Crest Expert Group to “Encourage the reform of public research centres and universities, in particular to promote transfer of knowledge to society and industry”, March 2006, submitted to CREST.



Note: 2003 for Japan, Korea, Austria, Belgium, Great Britain, Norway and Netherlands, OECD and EU-25. 2004 for Denmark based on national statistics.

Source: OECD, Main Science and Technology Indicators, 2005, Eurostat, The Danish Centre for Studies in Research and Research Policy.

### Challenges and initiatives

Highly educated people are the most important prerequisite for enabling companies to research and develop. In comparison with other countries, the percentage of highly educated people is low in Denmark

Only a few small and medium-sized enterprises collaborate with universities on research and development. Danish enterprises do not participate enough in international research partnerships. And only few Danish companies are working with user-driven innovation – i.e. analysing users' needs and getting user input in the innovation process in a systematic way.

#### *Key initiatives:*

- At least 50% of young people should complete a higher education programme. New attractive education programmes should increase enrolment in programmes within engineering, science, ICT and health. And the number of PhD scholarships and industrial PhD programmes should be doubled.
- The funds for collaboration on research and innovation between companies and the research and academic community are to be gathered in a single grant pool.
- The grants allocated to innovation incubators should be prioritised towards incubators that have the basis for achieving the best results.
- Funds for Authorised Technological Service (GTS) Institutes are to be allocated on an open competitive basis. The results produced by GTS Institutes should be evaluated internationally.
- The Danish Council for Technology and Innovation should be able to co-finance international programmes and projects that can promote innovation in Danish companies.
- A programme for user-driven innovation will be launched to strengthen companies' innovation. An integrated research environment will be established within the field. In addition, specific projects on

user-driven innovation in, for example, small enterprises and in the public sector should be initiated.

- A new Internet-based marketplace for trading in rights should create a transparent and efficient market for the purchase and sale of patents, brands and other rights.

**Further information:**

“Progress, Innovation and Cohesion – A summary of the Government’s Globalisation Strategy” (May 2006). Available in English at [www.globalisation.dk](http://www.globalisation.dk)

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