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Recession Fought by

Innovation and Education

■ **Lessons learned from the 1990's recession are being used for fighting the current economic crisis. The level of public R&D investments has been raised for 2009, with much emphasis on innovation and renewal of industry. It remains to be seen how the chemical industry will use these new funds, as its own investments are going down.**

Riitta Juvonen

Finland was hit hard by the recession of the early 1990's but recovered unbelievably well before the turn of the millennium. One of the main reasons for this was the wise innovation policy instituted by the government: public investments in research and development were increased remarkably, with very good results.

Several studies reveal the positive results of this policy. Published in March 2008, the European Growth and Jobs Monitor proved Finland the outright winner among the 14 largest European economies. In the survey, each country's overall performance on the path to reaching the so-called Lisbon objectives is determined.

In another assessment of the EU's Lisbon strategy results, Finland ranked third in the list of most competitive countries in Europe. Also, in the WEF and IMD rankings Finland has achieved high scores and top positions for many years.

According to preliminary statistics for 2008, Finland invested 3.4 % of GDP in research and development. The total investment was €6.4 billion, of which €4.7 billion came from the private sector. In 2007 the total investment was €6.2 billion, Finland ranking second for national R&D investments in comparison with other EU countries.

When economic turmoil started in the autumn of 2008, it was quite clear that the good experiences of the 1990's would provide a model for a part of the revival package.

In the beginning of 2009, the government decided to raise the public R&D investment by €102 million, up to

€1.9 billion. Compared to the previous year, this meant an almost 6 per cent growth in nominal terms and a 2 per cent growth in real terms.

Cuts within the chemical industry

According to preliminary statistical data for 2008, the Finnish chemical industry used €386.5 million for research and development, meaning a 13% rise compared to investments in 2007.

The chemical industry has for many years been the third largest investor in R&D after the electronics industry, which clearly dominates private investments, and the metals and mechanical engineering industry.

Published in June 2009, the yearly investment survey by the Confederation of Finnish Industries shows however that the recession has also severely affected the R&D functions of chemical companies. According to their estimation, investment in R&D will decrease to €350 million this year.

The number of R&D personnel in the chemical industry will also be cut, from 3,494 persons in 2008 to 2,978 in 2009. These figures include the R&D workforce both in Finland and abroad. Of the total R&D personnel in Finnish industry, 10% are employed by the chemical industry.

However, it is to be hoped that this drop is just temporary, as renewal of the industry is the only way to survive in the global market.

Recruitment a challenge

In 2007, 35% of chemical industry companies reported difficulties in

R&D Funding

Finland's major channel for public R&D funding is Tekes, the Finnish Funding Agency for Technology and Innovation.

In 2008, the number of Tekes funded projects was 1,983. Of the total €516 million spent by Tekes on R&D, €293 million went to industry, while universities, research institutions and polytechnics received €223 million. This year the R&D funding of Tekes is €575 million.

The prime funding agency for basic research is the Academy of Finland, the funding of which amounts to €309 million in 2009.

recruiting workforce, but when the yearly survey on human resource needs of the Finnish industry was executed in October 2008, the situation had dramatically changed, with only some 15% reporting recruitment problems.

The current reasons for decreased HR needs are clear. However, the demographic facts of the population have not changed. The number of people retiring from the workforce is now bigger than the size of the generation entering working life. When economic growth begins, the lack of skilled people will be a real bottleneck for the competitiveness of Finnish companies.

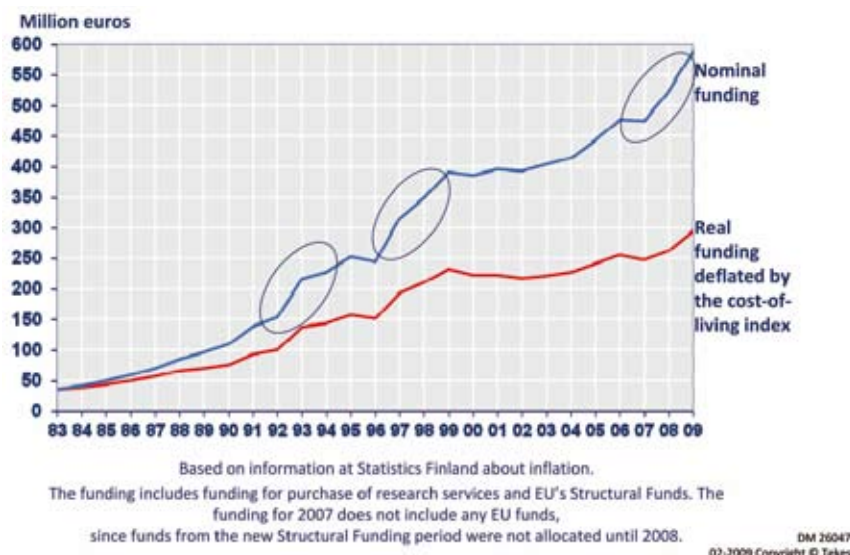
Far-sighted companies are fully aware of the challenges ahead, investing in human resources development and future recruitment despite the fact that lay-offs and redundancies now take place. Many companies really use this more quiet time to "sharpen their tools" for future competition for the best resources.

Unfortunately, jobs in the manufacturing industry tend not to be at the top of young people's career plans. Therefore, the chemical industry has for a long time been boosting cooperation between schools and chemical companies. It has been shown that youngsters with experience with industrial companies are more willing to choose industry as their career path than their peers without this kind of experience.

The Chemical Industry Federation uses several means for giving both teachers and students opportunities to make an acquaintance with the chemical industry. In-service training for teachers is organised every year, school principals are encouraged to allocate resources for site visits to companies, and companies

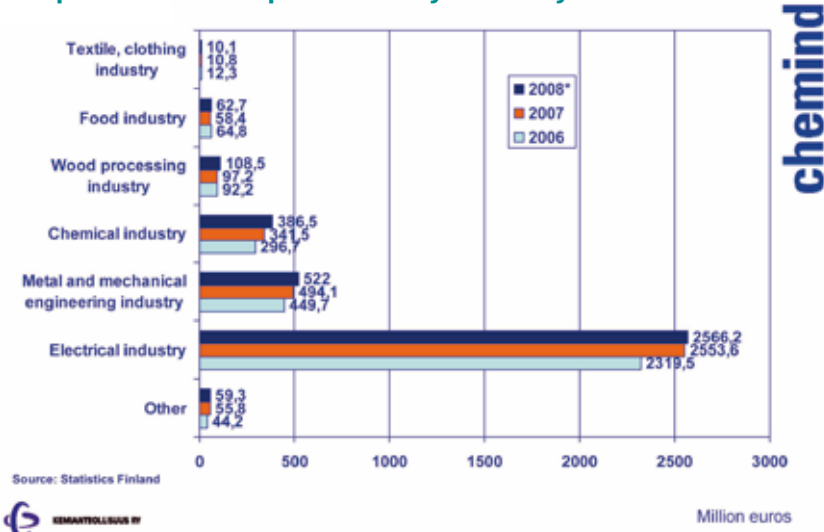


Development of Tekes R&D funding



Finland recovered from the 1990's recession by raising investments in research and development.

Enterprises' R&D expenditure by industry in 2006–2008*



In 2008, the Finnish chemical industry invested almost €400 million in R&D, but a drop in investments will be experienced this year.



are given advice on how to arrange successful study visits.

HR policies must be revised

However, it is not enough just to inform young people of the opportunities and HR needs of the industry. Young generations differ from older ones in many ways, challenging the old ways of leadership. They communicate differently, and they expect more freedom.

This means that companies need to change also, in order to be attractive to the young. The reputation of a company as a good or not so good employer will get around very quickly in the various

networks young people use to share information. This will be a real challenge when the competition for workforce gets tough.

The challenge of the new working generations was discussed in the Round Table organised by the Chemical Industry Federation in 2008, and ten statements about future challenges were formulated. Now the federation encourages member companies to revise their HR policies to be ready when the economic upturn starts. □

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High Hopes for University Reform

The Finnish university system is undergoing the largest reform since the establishment of the country's first university hundreds of years ago. Bringing the universities a much wider economic autonomy and changing their governance, the new university law was confirmed by the parliament in June 2009. According to the Minister of Education, approval of the new law is one of the most important decisions under the current term of office.

Merging the Helsinki School of Economics (HSE), the University of Art and Design Helsinki (TAIK), and the Helsinki University of Technology (TKK), the new Aalto University can be regarded as the flagship of university renewal. This combination of different disciplines is considered a strong basis for innovation, and has gained much attention both in Finland and abroad.

From the beginning of 2010, all universities will be autonomous institutions subject to public law, with much wider independence than today. In addition, two of them — Aalto University and Tampere University of Technology — will be administrated by their own foundations.

Besides new opportunities, the new law also brings challenges for ensuring appropriate funding of university functions. Part of the university funding will be raised from private sources, and a share of the public funding will be based on the levels of private donations. The competition for donations from companies, industry federations and other private sources has started in quite hard economic circumstances.

For Finland's future, the success of the new university system is crucial. Published in 2008, the national innovation strategy emphasises demand-based innovations and applications, but without a sound basis for basic research the sources for radical innovations will soon be exhausted.