Tapping into the pool of women

Facing a serious shortage of skilled workers, Europe’s high-tech economies are discovering the value of working women

Several studies have recently investigated the future demand for scientists in the European economies, the most comprehensive being The European Commission (EC) Futures Project published in 1999. And the results did not bode well for Europe. A lack of skilled personnel could mean lower growth and profits, and Europe might simply ‘miss the boat’ in the formation of some crucial high-tech industries in the coming years. More specifically, a detailed analysis of the academic workforce in Germany paints an even bleaker picture of the country’s future prospects in the high-tech sector. Its recent biotech boom, the study found, was due mainly to a large excess number of graduates in science, engineering and technology from which German high-tech companies were able to hire the trained personnel they required. But with this surplus depleting and the falling numbers of new graduates, this so-called ‘window of competence’ will close in 2002 and the ensuing lack of qualified workers is expected to seriously hamper further growth in this area.

And Germany is not the only country facing this problem. Sir Gareth Roberts’ ‘Review of the supply of scientists and engineers’, instigated by the UK Treasury and scheduled for publication in March 2002, is expected to announce similar results for the UK economy. In addition to the looming shortage of skilled workers, Europe is also lagging behind in investment into qualified personnel. On average, the EU has only five researchers per 1000 workers, compared to seven in the USA and nine in Japan. The annual growth rate of the workforce in research, technology and development is only 1.6% in the EU, whereas it stands at more than 2% in the USA. Furthermore, some of the highly technologically developed countries, such as Germany, Scandinavia and The Netherlands, have an older workforce and will thus have a greater demand for skilled workers in the future, leading to a required growth of 8% instead of the actual 1.6%.

At the same time as the high-tech sector is finding it increasingly difficult to hire skilled workers, many European countries are ignoring a huge untapped pool of workers: women. In 1998, an average of 51% of women in the EU were employed (compared with 71% of men), ranging from 37% in Italy to 63–67% in Scandinavia. In contrast, 67% of the women in the USA work. In the academic sector, the situation in Europe is even more dire. On average, only 10% of full professorships or equivalent posts in the life sciences are held by women, even though the numbers of male and female undergraduates are equal. The proportion of women in physics, mathematics and engineering is even lower. And this has not changed significantly over the past 20 years.

The problem of the under-representation of women in leading positions in academia has recently received a lot of attention, if measured by the number of meetings held on this topic. A great deal of talk about a small number of women. Indeed, it seems that the times are changing and that women are finally being recognised for their economic value, not only because they could fill the gap between supply and demand in the high-tech sector, but also because the workplace itself has changed over the last 20 years and now has a greater need for the special skills that women can contribute.

Karl-Heinz Minks (University Information System GmbH, Hanover, Germany) discussed new target groups in scientific and technical disciplines at the congress ‘Future Opportunities Generated by Diversity in Higher Education and Training’ in Munich in February 2002. He remembered giving virtually the same talk deploring the lack of female students and employment opportunities 20 years ago to a similar, largely female audience. But he was much more optimistic about women’s present-day chances in the labour market. ‘Firstly, women today have much better, more effective and active networks. They are more proactive and are not only deploring their suppression. Secondly, the workplace has changed: soft skills, such as the ability to communicate and work in a team are in high demand, interdisciplinarity is a must. These are characteristics that are usually associated with women. Thirdly, 20 years ago there was also a shortage of scientists and engineers anticipated but women were seen as a reserve army. Today we anticipate a real need for the skills of women in the future.’

But where are all these women who started studying and then disappeared somewhere along the path to group leaders or professors? The UK’s Department of Trade and Industry (DTI) report ‘Maximising returns to science, engineering and
A lack of skilled personnel could mean lower growth and profits and Europe might simply ‘miss the boat’ in the formation of some crucial high-tech industries
Some links for further information on measures to promote women in science

- The EC’s Futures Project: http://futures.jrc.es
- ‘Maximising returns’ report, DTI: http://www.dti.gov.uk
- University of Helsinki Equality Plan: http://www.helsinki.fi/tasa-arvo/english
- BMWF women’s unit: http://www.bmwf.de/249_1348.html
- University of Trier pilot study: http://www.familienberechtigte-hochschule.de
- Mission pour la place des femmes, CNRS: http://www.cnrs.fr/cwj/fr/accu/missionFemmes.html
- SNF’s re-start fellowships: http://www.snf.ch/de/top/awa/awa_wom.asp
- and the recommendations given by the working group for gender parity: http://www.snf.ch/de/wom/wom_enc.asp
- The Wellcome Trust’s re-entry fellowships for women in the UK: http://www.wellcome.ac.uk/en/1/biosfgcdpfunsumbbs.html
- The Daphne Jackson Trust: http://www.sst.ph.ic.ac.uk/trust/
- EPSRC: http://www.epsrc.ac.uk/
- The Laura Ashley Foundation: http://www.laf.uk.net/fellowships/fellowships.htm
- The EC’s Women and Science unit: http://www.cordis.lu/improving/women/home.htm
- The first international re-entry fellowship by EMBO: http://www.embo.org/projects/women/restart_fellow.html
- EMBO’s position paper on the place of women in science: http://www.embo.org/projects/women/index.html

Women’s demands can only be met if society is willing to change

Increasing the number of women in the sciences is one thing. Increasing their number in positions of real power is another, and it remains to be seen if this will really change. Simply increasing the pool of women from which to recruit may do the trick, but examples from the Scandinavian countries and the USA, where the number of female senior faculty members has remained stagnant at around 10–20%, are not encouraging. And quotas have proved to be quite unpopular, as being a ‘quota woman’ always leaves a bad taste. On the other hand, as Mary Clutter, Assistant Director of the US National Science Foundation, puts it: ‘It is better to be in a position of power than not to be in a position of power.’ Maybe that is all that matters.

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reside only within the research sector, but need to pervade all of society, because women’s demands can only be met if society is willing to change. This involves the provision of affordable full-time day-care for children, a problem that is particularly acute in Germany, Austria, Switzerland and The Netherlands, where full-time kindergartens are a rarity and school ends at 1 o’clock at the latest. But also in countries with full day schools, parents still need to make provisions for the school holidays. All measures that are being proposed will be useless if this problem is not solved, as the primary reason for women not returning to science is the incompatibility of a science career with a family.

And doing science part-time is not the best option, as Nobel Prize Laureate Christiane Nuesselein-Volhard (Director of the Max-Planck Institute, Tübingen, Germany) pointed out at the recent press conference for the launch of EMBO’s restart fellowships. Indeed, under the present circumstances, women do themselves no favours when working part-time in academia because their productivity suffers, which will be held against them when their CVs are judged at job interviews or when applying for grants, she said. Her younger colleagues have even more radical demands. Renée Schröder (Professor for Biology, University of Vienna, Austria) and recipient of the L’Oreal Special Honor Award for Women in Science, demanded that ‘age limits for careers have to be abolished! Why should somebody not go back to science at the age of 40, once the children go to school? You still have 30 years of doing science before you.’ Thus, the abolishment of age limits by the UK’s MRC, Switzerland’s SNF and EMBO are certainly steps in the right direction.