



# Why focus on women for science and development?

## Global business needs diversity!

Why should women be targeted as the main source of new industrial researchers? The answer is simple – while inequalities waste potential, excellence requires diversity. The under-utilisation of women in science and technology is demonstrated all too clearly in the statistics. Equity policies are needed to ensure transparency and openness and to promote diversity. Diversity, in turn, releases potential, fosters innovation, creates markets and reaches diverse consumers – diversity is good for business. Diversity in the global market assists employers to become both the employer and supplier of choice.

Significant changes affecting Europe are throwing the spotlight on the business imperative to develop and support women's careers in industrial research. Changing demographic patterns mean that there is a smaller potential workforce to draw upon over the next decade, just as the number of industrial researchers will need to grow! The workforce is also ageing. Employers will need to become more competitive by investing in and developing staff for research and development, and using them wisely and more effectively.

Many employers in industrial research face the prospect of downsizing and are taking the decision to outsource some of their research functions. This makes it even more important to ensure effective and creative use is made of human resources, in particular that of industrial researchers. There can be no waste of potential in lean companies. A flexible and agile response to market needs, while retaining expertise and developing additional skills is essential, both within the company and with regard to outsourcing teams.

Ironically, while downsizing, companies are also facing skill shortages. This means fishing in a wider pool. Moreover, new ways of working are shifting more emphasis onto different combinations of skills. 'Hybrids' are increasingly in demand, combining technical skills in several areas with management skills and interpersonal skills (including a capacity in languages). To recruit such new breeds of industrial researchers and to build up multi-skilled teams means opening the doors wider and accepting candidates from less traditional routes.

### Box 2.1:

'In 1999 when we started on our current journey, just 8% of our top team – our top 450 people were women. Of the top 40 – the Executive and Group Vice Presidents who run the company – none were women.

Just 9% of the top team came from countries other than the US or the UK.

That was the starting point.

....

By the end of this year (2002) we'll have almost twice as many women in our global leadership team – our executive cadre – as we had three years ago.

Four years ago, as I said, there were no women on my top senior team – our top 40. Now we have five.

And we have increased by 50% of our university recruits from some 25 different countries beyond the Anglo-Saxon world.

And we are beginning to develop a rich feeder pool talent – people in their 20s and 30s who are gathering experience through the company and across the world.'

Source: Lord Browne, Group Chief Executive BP in his keynote speech at the 'Women in Leadership Conference', Hotel Intercontinental, Berlin 19th June 2002 ([www.catalystwomen.org](http://www.catalystwomen.org))

**Box 2.2: The Sunday Times Report on the '100 best companies to work for'**

... the companies that make it on to the (100 best companies to work for) list have fared better than most during a bumpy year on the stock market. Whereas the FTSE All-Share index fell 15.6% in the year to January 31st 2002, the listed companies among our top 100 fell a more modest 5.9%. A study of performance over the five-year period is even more instructive. Share and dividend returns for these companies have shown 25.4% growth year on year over this period, compared with 6.3% for the rest of the All-Share index. Being a great place to work clearly pays in the long run.

Source: *The Sunday Times*, March 24th 2002

**Box 2.3**

Several major US corporations have moved ahead in the past decade to develop policies to retain and promote the women in their ranks. Fear of legal action has been a strong motivating factor. But the fight for talent, particularly during the Internet boom, made companies realise their best talent was in-house, but in danger of leaving if adequate policies were not put in place.

Source: [http://www.pwn.link.be/bestpractices/p\\_tht\\_corp\\_bpract.html](http://www.pwn.link.be/bestpractices/p_tht_corp_bpract.html)

Many are likely to be women. Science has demonstrated that monocultures are not sustainable.

Information and communication technology developments have changed everything – including progress in research. Research is now faster and, in a sense, more democratic: it is easier for companies, wherever they are based, to have access to new techniques and data. Projects are no longer constrained by participants having to be geographically close. This puts an additional emphasis on the use made of human resources in order to gain a competitive edge. The benefits of diverse, international teams and the range of experiences and perspectives that members bring to them will be crucial to success in the markets of the future.

Very importantly, recent social and economic changes have enhanced women's position as consumers. More women are in paid work; there are more households now headed by a woman. Women are increasingly important in determining consumer choices. More women are setting up their own businesses and are responsible for business procurement in big companies.

Just as major companies are now seeking to have international teams in their product development and process departments to tap into global markets, so the enhanced role of women as consumers means that they need to be recruited as members of the teams inventing and developing new products. Companies that ignore the growing power of women as consumers by not enhancing their participation in R&D will miss significant opportunities. Some private sector employers in Europe are beginning to address the issue, including those represented in the WIR expert group, as are US companies.

Lifestyle choices of new entrants to the workforce are clearly different from those of their parents' generation. Younger people are choosing different options, reflecting a desire for a better work/life balance. Demographic changes mean that eldercare will become almost as important an issue for many employees as childcare in the future. A myriad of new household arrangements and 'reconstituted' families increasingly characterise modern western society. This means that company policies based on the outmoded notion of a white nuclear family with a breadwinner husband and a homemaker wife will fail and not be as attractive for recruiting and retaining staff, or for offering appropriate products. Companies need to reflect changing patterns of households and families, as well as emerging lifestyle choices in their employment policies as well as their product design.

There are significant national differences among European countries in childcare provision. Often childcare facilities do not meet the needs of working mothers and fathers. This is especially the case for young scientists whose working lives are characterised by international mobility and long or variable working hours.

Very importantly, diversity policies combat nepotism and patronage and privilege merit as a discriminator, over 'who you know'. Hence, such policies are crucial for competitiveness. Business organisations, equality agencies and the media are constructing league tables of the 'best' and 'worst' companies for which to work. In the US, being listed (or not listed) among the 'best' companies on diversity can affect the quality of applicants for posts and, eventually, influence consumer choices.

Women are clearly interested in science and scientific careers, although there are significant differences across countries and by discipline<sup>4</sup>. However, as the ETAN report on women and science highlighted, in universities and research institutes in the public sector, women fall off the academic hierarchy, in disproportionate numbers, at every rung of the ladder (Osborn et al, 2000). They fail at every stage to be selected proportionate to their numbers in the recruitment pool. The obverse of this of course is that men are consistently selected in numbers greater than their proportionate share of the recruitment pool. This is the case across disciplines, across countries and irrespective of whether women comprise the majority or minority of undergraduate students, in that subject, in that country (Osborn et al, 2000). Structural barriers systematically exclude women from developing their careers in academia, and thereby from the contribution they are able to make to the industrial research that is carried out in universities and research institutes. Moreover, while the statistical base is not as developed, similar patterns of frustrated careers appear to characterise industrial research too (see Chapter 3). Assuming an equal distribution of talents among women and men, existing selection processes do not appear to recruit efficiently.

In the UK alone, there is a pool of approximately 50,000 women graduates in science, engineering and technology not in the labour force (Greenfield et al 2002, p xvi). Hence, there are potentially tens of thousands more qualified women in science and engineering in Europe, many of whom may be interested in careers in industrial research and development. This represents a huge untapped potential. However, women in science and engineering are still more likely (proportionately) to be employed in the public sector than in industrial research (in most countries). It is evident that there are very few women researchers or engineers in top jobs in major companies. Small and medium sized enterprises can be described as the 'engine house of the economy' but here again, there is a very similar pattern of under-utilisation. Clearly, well-qualified women are not having a significant influence in decision-making in the industrial sector in Europe.

In some companies R&D is regarded as a starting place for employees on trajectories to other disciplines and management. Recruiting and retaining more female industrial R&D workers in these cases will produce a more balanced workforce in senior positions. Multi-disciplinary project teams increasingly carry out industrial research. Gender-balanced teams have been shown by management studies to score better.

Very few women are named as inventors in patent applications – a much smaller proportion than one would expect given the number of trained women industrial researchers in the working population. Women's powers of innovation are not reflected in the numbers that apply for patents or are mentioned as co-inventors.

Which companies are the drivers of innovation, growth and diversity? Where are women in research valued, where do they flourish? Which policies work in attracting, retaining and promoting women? There is a severe problem here not just of lack of statistics but also a shortage of documented case studies. This report aims to help fill that gap through the ideas and experiences of several companies.

#### Box 2.5

'The country with the highest distribution of female inventors is Spain followed by France and Italy. Germany has the lowest percentage of female inventors (4.6% versus 15.8% of Spain). Since Germany produces about 50% of the patents the low German percentage of female inventors influences significantly the global statistics.'

Source: European Commission (2002) 'Scientific and technological performance by gender: A feasibility study on Patents and Bibliometric Indicators', vol 1 *Statistical Analysis*, Luxembourg: Office for Official Publications of the European Communities page 21

<sup>4</sup> See Chapter 3 and the statistics in the 'Helsinki Group' report for data on women and science in 30 European countries (Rees, 2002) and Meulders et al (in press).

It argues for routine monitoring of the position of women in industrial research. It also makes the case for a comprehensive approach to releasing their potential through recruitment, retention and promotion – by adopting best practice. Scoreboards and benchmarking should measure the improvement in the participation of women in industrial research to address this serious management concern.

Very importantly, this report is not advocating ‘special measures’ to enable women better to fit in with the dominant culture. Rather, the key to releasing potential – of both women and men – is organisational and cultural change. The questions should no longer be ‘where are the women?’ but rather – ‘what’s wrong with the culture?’

Obviously, there are significant differences across countries and sectors. Part of our task in this report is to bring these to light, and, in particular, to make comparisons. Countries, where there are good institutional frameworks, such as Norway, Finland and Sweden and sectors, where women constitute a much higher proportion of industrial researchers, such as the life sciences are highlighted. Recommendations of this report are built upon this awareness of diversity of situation and context.