



Waking Up to the Need for Women in Science and Technology

*“Women in Industrial Research—
Speeding Up Changes in Europe”
Keynote Speech
Andrew Gould
Berlin, Germany
October 10–11, 2003*

The international conference “Women in Industrial Research—Speeding Up Changes in Europe” was held in Berlin, Germany, on October 10–11, 2003. More than 350 participants from more than 40 countries attended. The conference opened with a speech by Philippe Busquin, European Union Commissioner for Research, who highlighted the significance of the conference for Europe’s technological competitiveness. Andrew Gould concluded the keynote session with the speech reprinted here, which introduces a commitment being made by several CEOs from research and development (R&D) companies active in Europe.

The Women in Industrial Research (WIR) initiative began in 2001 as a proposal by the European Commission’s Research Directorate General to develop effective measures to ensure full participation of women in industrial research. The goal of this conference was to prepare concerted actions to promote industrial-research careers for women. A total of 70 speakers—representatives from science, politics and leading R&D companies—presented their ideas, political visions and experiences in five workshops and three plenary sessions.

Waking Up to the Need for Women in Science and Technology

Your Excellencies, Ladies and Gentlemen,

it is an honor to be here. Taking a proactive stance in this sort of domain is never easy, and no organization is better suited to understand that than Schlumberger.

About 25 years ago, the chairman of Schlumberger decided that the company's engineer workforce, which at that time largely consisted of French and Americans, should represent all the countries in which we work in proportion to the number of engineers required by the activity in that country. This reasoning was business-driven; as a global company, interacting with our customers required hiring people from their respective cultures. We sell complex technology, and the cultural affinity that diversity has achieved with our customers is a major competitive advantage.

A condition of the success of this idea was that opportunity would be equal irrespective of one's nationality. It is possible that I will be the last European or American CEO of Schlumberger, as the top management group of Schlumberger today comprises 23 people representing 11 nationalities. Our belief that opportunity is truly equal has given us access to the best people no matter where they were born, and the result is an extraordinary melting pot of talent.

Within all levels of the company, there are people of many different nationalities. We monitor them from recruitment onwards, throughout their careers, tracking them with highly focused succession-planning mechanisms. This does not mean that we have uniform success. Many countries in which we operate, particularly in less-developed parts of the world, either have small populations or poor educational systems, and these present significant challenges. Aligning our business with our needs identifies focus areas for recruitment



*Andrew Gould
Chairman and CEO Schlumberger Limited.*



as our industry evolves, and this has led us to our current efforts in Russia and China—two countries that are vital to our future.

Why do I emphasize our success in nationality diversity? It is simply because so many of the tools and so much of the know-how about gender diversity are contained in our past successful experience with nationality diversity. The real key now is to capture experiences from one generation to the next and to encourage interaction. Overcoming natural prejudice and the defense of the status quo took us many years, much effort, brilliant successes and painful failures to reach where we are today. Yet, the overall result is a spectacular success not just in terms of diversity but also in the positive impact on our business. When you can offer a customer in the Middle East, or in Latin America, a Schlumberger manager trained to the highest international standards and of the same nationality as that customer, you have a credibility that would never be accorded an expatriate foreigner.

In 1994, we decided that we needed to bring the same focus to gender diversity that we brought to nationality diversity. There had previously been isolated and sporadic attempts, but with little sustained success. Once more, the reasoning was business-driven—

Cultural diversity. Diversity is at the heart of our business strategy. Transforming the culture of a company takes 10 to 20 years. In the late 1970s, Schlumberger decided to recruit and develop people from the countries in which we work proportionally to the business perspectives and revenue. This diversity now runs through all the layers of the company, including top management. In the early 1990s, we realized we needed to address the issue of gender diversity with the same determination we had for nationality diversity.

why deprive the company of access to half of the world's intellectual potential? Again, we faced the same resistance and prejudice. In fact, on many occasions, I presented to managers from countries all over the world the same arguments that we used with the French and American engineers who resisted diversity 20 years ago.

As you can see from the succession-planning charts, women have begun to make inroads, but in my view we are still at a stage where the ultimate success of the undertaking is fragile. I will devote the remainder of my remarks to discussing why this is so and what needs to be done to consolidate the advances we have made. But first I would like to make one short digression.



Succession Planning. Today, there are 11 nationalities represented among our top 23 managers, (map). With the current composition of our management staff, we expect the proportion of women in management to increase from 9% now to 13% in the short term, and to 23% in the longer term.



While the business case for nationality diversity was not obvious, the business case for gender diversity is not only obvious; it is essential. By way of illustration consider these facts:

- 70% of the intake to the School of Medicine at Imperial College in London is female. In fact, 70% of the intake to life science disciplines is female.
- Before too long, half the 35-year-old lawyers will be women. How then will any corporation be able to maintain its legal department if it does not accommodate women's requirements in terms of their desire to have children as well as the corresponding benefit packages?
- The acceptance of women in all branches of university education and their spectacular educational achievements have made the commitment of women to the workplace and the commitment of society to keep them there inevitable. It is in the interest of society at large to ensure that the personal and professional needs of women are satisfied.
- As Christopher Caldwell wrote in the *Financial Times*, "In 2020, women will not have to shout their demands. Any company that wishes to stay afloat will anticipate them."

Success stories and role models are important. Pioneers and explorers have always made the way easier for those who follow, and their experience is a roadmap of success or failure to be followed or discarded. I would like to share the examples of three successes in Schlumberger. These women are fully aware that I am using them as role models today and have given enthusiastic support to my participation at this event.

Carol is a proud, opinionated, outspoken, positive computer scientist. She has developed software for complex acquisition and interpretation systems for 22 years. She has progressed from software engineer to section manager, and she is excellent at motivating tightly knit teams. She has worked in our research centers in Austin and Houston, Texas.

She is a mother and wife and has become the primary breadwinner since her husband became a victim of the dot.com crash. Carol is a pragmatic and realistic project manager comfortable talking to anybody in the company. It is this straightforwardness coupled with her sense of humor that earns her tremendous respect and loyalty from many people in Schlumberger. I was not going to mention it, but Carol said that she was comfortable having me say that she has achieved this while dealing with multiple sclerosis for 17 years.



Catherine is the general manager for Schlumberger Oilfield Services in Canada. I first met Catherine 13 years ago when she was the field engineer on an offshore platform in Nigeria. She was managing a team of three Nigerians and \$2 million of Schlumberger equipment, and was helping make key technical decisions for her customer. At the time, this was a relatively unusual position for a young woman in her early 20s. Luckily one of Catherine's principal qualities is her persistence, which has taken her to where she is today.

She married another Schlumberger engineer and has been a pioneer in the management of dual careers, maternity breaks and the other policies that are associated with gender diversity. She specifically noted for today's session that she considers it is not so much new policies that are needed but instead, more flexibility on the part of the company.

Catherine is one of three female general managers in an overall group of 27 who manage Schlumberger field operations worldwide. While 3 out of 27 may not represent a critical mass, it is a voice that is heard.

Roopa is a geophysicist and a leader. She began her career 22 years ago as a senior development engineer working in an Interpretation Development group in Houston, Texas. After three years, she moved to Operations in the Far East, spending the next seven years in Singapore, Bangkok and Kuala Lumpur. She made significant technology introductions to the field and speaks very highly of her experiences training field engineers and interacting with customers. Roopa vividly remembers her manager at the time, a man who initially believed that women belonged either in research or in the home—not in the field. However, after working together for a year, he became her greatest supporter.

Roopa then changed business segments and became a location manager in Indonesia where she started and grew a software business. She made the transition to manage an oil and gas reservoir studies group that helped customers explore with more accuracy and efficiency.

Roopa captivates you with stories from her past, however ordinary they may seem to her. She has many fond memories and a few horror stories. She was initially refused admission in geophysics in 1971 because she was a woman and there was "concern for her safety" on geological field trips. She and her father overcame the university's concerns and she became the first woman student in geophysics, then graduated with a gold medal for standing first amongst all students in her year. While working in Asia, she was evacuated from Jakarta during a period of hostility and not allowed to return when her male counterparts were. She stresses that it is her support community of friends and colleagues who made the difference in these times of difficulty.

Throughout her professional career, Roopa has been a strong communicator. She has been teaching and publishing actively since 1975. Today she is a scientific advisor and business development manager involved in complex oil-production projects.

Roopa is also a proud mother who has been actively involved in her son's life even while working full-time.

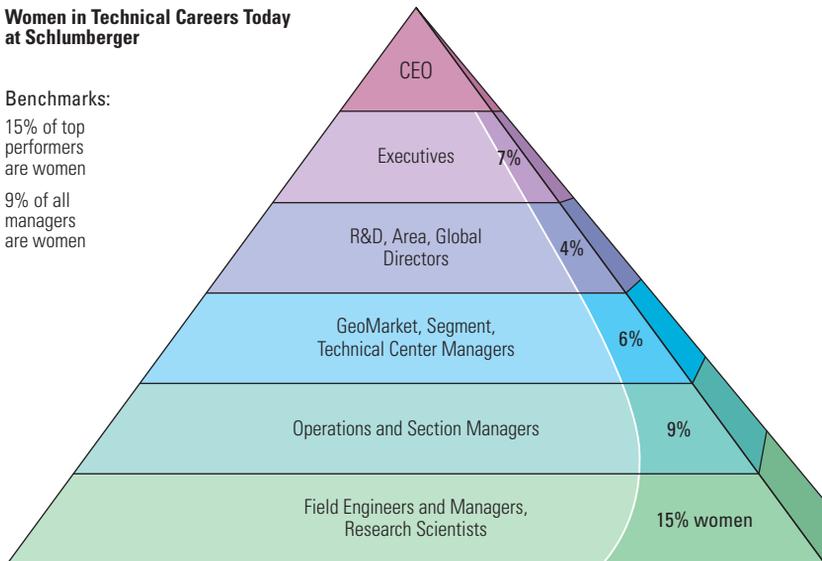


The women I mention today are exemplary role models. They have different backgrounds and experiences. One is a software expert and R&D manager; the second a field operations manager; the third a scientist and sales expert. All are mothers. Each of them makes a big difference in our company. They have in common their strong personalities and communication skills (however different in style), well-rounded professional development and well-balanced work and life-styles. Each is an inspiration to the engineers and scientists in Schlumberger.

After nine years of promoting gender diversity within Schlumberger, success is not uniform but considerable advances have been made. Fifteen percent of our exempt employees are women, and 9% of our managers are women. As you can see from this pyramid, 15% female intake at the entry level of field engineer, research scientist or product engineer gives us a considerable population, as this represents 2500 women in total. It is the next stage that is the challenge; providing an environment that gives women confidence that they can have a range of career opportunities within a framework that satisfies both professional and personal aspirations.

Women in Technical Careers Today at Schlumberger

Benchmarks:
 15% of top performers are women
 9% of all managers are women



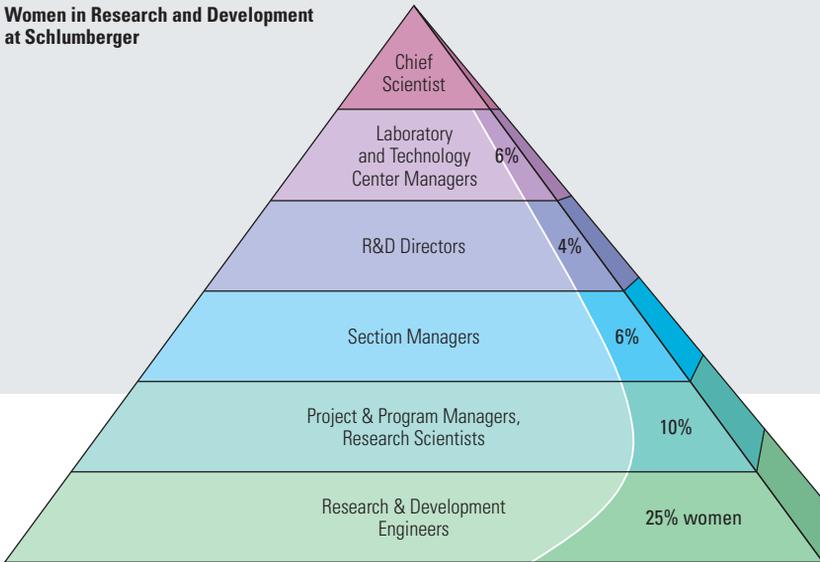
Exempt population 21,600 people, 15% women

Women in technical careers today. Of the population of 21,600 exempt employees in Schlumberger, 15% are women. Women must break through a glass ceiling to become a critical mass in top management populations.

In this context, I would like to mention what to me are the most difficult aspects of achieving this.

- As always, if management is not committed at all levels, it will not happen. I am convinced that top management and much of the middle management of Schlumberger are committed, but the attrition statistics, particularly for female field engineers, suggest that commitment is not total across all management levels.
- We need to adjust our policies and procedures in such a way as to convince women and their partners that we truly want to retain them. This goes beyond the traditional need to adapt policies to maternity, life-style and continuity. A key issue that is both highly personal and not easily adapted to a policy or system is that of dual-career couples. In these cases, a point is often reached where the career opportunities for one will take precedence over those of the other. I know that conventional wisdom marks this as a point at which the man's career often takes precedence, as they are normally slightly older and more advanced in their careers. I believe that today's couples are capable of assessing their professional situation and of deciding who has the most promising career and living with the consequences. Academia, industry and government will need unprecedented voluntary cooperation to solve this issue.
- Finally, we must consider the glass ceiling—that invisible barrier to advancement that keeps women from attaining the highest levels of corporate management. Curiously, the glass ceiling is a phenomenon that is not only a male creation. Women are more cautious about taking career risks than men, and also are abhorrent of the stigma that might come from “risky” promotions that could be perceived as quota adherence, or making the numbers, rather than promotion truly based on merit. Many believe that women are less assertive and less likely to ask or negotiate than men. A new book by two American women, “Women Don't Ask: Negotiation and the Gender Divide,” documents this phenomenon. Those of us who managed promotions in the nationality diversity phase of Schlumberger and who have dealt with different cultural conventions are well aware of this. However, the glass ceiling is a real problem and will remain so until women achieve critical mass within the management ranks. It is the biggest challenge we face in gender diversity today and for the next five years, nowhere more so than in research and engineering. I have no doubt the ceiling will be broken, but it will take all our support and attention.

Women in Research and Development at Schlumberger



R&D population 3250 people, 18% women

Women in research and development at Schlumberger. Of our 3250 professionals in research and development, 18% are women. We recruit 25% women from universities, but need to improve retention and advancement. To achieve this, several efforts are necessary, including commitment at all levels of management, development of family-friendly policies, and encouraging women to seize career opportunities.

Schlumberger currently employs 3250 scientists and engineers in our research and product centers around the world. Most are in the USA, but we have significant populations in France, the UK, Norway and Japan, and small populations in Beijing, Moscow and Saudi Arabia, where, against all expectations, we have a female Saudi Arabian biochemist, educated at Cambridge, as a full-time employee in research. This somewhat belies the traditional image of the Gulf, but the progress women are making in science in the Muslim world is not insignificant.

In terms of R&D management, we have one female product center director, who is working in Norway. We have 13 female section managers (out of 218) in our research laboratories and 9 female project leaders (out of 76) in our product centers, covering disciplines as diverse as nuclear spectroscopy, magnetic resonance, geophysics and application software. I am not proud of these statistics, and we have considerable progress to make in

this area. We have women who have made important business contributions through the technology they have developed and women who have received prestigious awards from professional societies. Marcia McNutt, the head of the Monterey Bay Aquarium Research Institute, is a member of our external science committee. The president-elect of the Society of Petroleum Engineers, Kate Baker of BP, shows that even in the oil and gas industry, significant barriers are falling.

So what is the solution for research? In my view, it is in creating the necessary conditions that favor the enrollment of women in sciences other than life sciences, and also in favoring their retention throughout various stages of their careers. Once we achieve this, time and concerted efforts from us all will do the rest. The challenge of creating the right conditions goes beyond the universities and back to the secondary schools across the continent. In my opinion this is not a problem that is limited to research. Attracting women to a breadth of science and engineering careers is important to the future industrial competitiveness of Europe. We all need to do what is necessary to ensure that women are as attracted to science and engineering within academia, industry and the public sector as they are now attracted to life sciences or the law.



I am therefore delighted to participate in this forum and to commit Schlumberger to the agenda that you see here. I believe that we are in very good company and apart from these seven companies already committed to act: Airbus, Air Liquide, EADS, Hewlett-Packard, Rolls Royce, Schlumberger and Siemens, I can report that at least five others are preparing their contribution.

I am particularly pleased to see that the program actively encourages industry to sponsor a female professorship at a university. It is only when young women feel that scientific research and engineering provide an exciting, viable and sustainable career in academia, industry or the public sector that we will attract and retain them in significant numbers. The other issues—promotion, career and family considerations—in my view will solve themselves as time and numbers make women's contributions essential and both demographically and educationally unavoidable.

Your Excellencies, Ladies and Gentlemen, thank you for your attention and I wish you a highly successful meeting.

A Commitment to Act

• Take a Stand

All CEOs will demonstrate their company's approach at a public event in 2004.

• Sponsor a Role Model

Each company will fund a major programme, such as endowing a chair at a university to encourage women in science and engineering.

• Promote Change

Each company will set targets and monitor progress internally and at universities.

• Use Existing Programs

Each company will take full advantage of programs already in place.

• Inform Others of the Business Case

A panel of experts will research, review and assess the business case.

Commitment made by the chief executive officers of seven leading research and development companies—Airbus, Air Liquide, Hewlett Packard, Rolls Royce, Schlumberger, and Siemens—to promote women in science and technology in the private sector in Europe.

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