



*Job Creation and
Competitiveness
through*

Innovation



This Report has been prepared by the Competitiveness Working Group of the European Round Table, inspired by the findings of an ERT Colloquium on “*Job Creation through Innovation and Competitiveness*” hosted in Brussels on 19 May 1998 by **Baron Daniel Janssen** on behalf of the ERT.

The Colloquium addressed a distinguished audience of senior decision-makers drawn from governments, European Institutions, industry, research and academic institutes. The debate was organised in three Panels:

Panel 1. Entrepreneurship - creating and building businesses

Panel 2. Innovation - releasing the potential of research

Panel 3. People - changing attitudes.

The speakers were:

Panel 1 : Δ **Dr Lars Ramqvist**, Chairman of Ericsson, Member of the ERT
 Δ **Dr Jos Peeters**, Managing Director, Capricorn Venture Partners
 Δ **Mr Stefano Micossi**, Director General, DG III, European Commission

Panel 2 : Δ **Mme Edith Cresson**, Member of the European Commission responsible for Research, Innovation, Education, Training and Youth
 Δ **Ing Pier Giorgio Gili**, Member of the Board, Fiat Research Centre
 Δ **Prof Jonathan Knowles**, Head of Pharma Research, F Hoffmann-La Roche
 Δ **Prof Dr Frieder Meyer-Krahmer**, Director, Fraunhofer Institut für Systemtechnik und Innovationsforschung

Panel 3 : Δ **Lord Simon of Highbury**, UK Minister of Trade & Competitiveness in Europe
 Δ **Dr Ben Knapen**, Director of Corporate Communications, Philips
 Δ **Mr Elmar Brok**, Member of the European Parliament

The debates were moderated by **Prof Antonio Borges**, Dean of INSEAD and by **Dr Peter Lorange**, President of IMD, Switzerland. **Prof Alexis Jacquemin**, Chief Adviser, Forward Studies Unit, spoke for the Competitiveness Advisory Group of the European Union.

The Competitiveness Working Group is composed of representatives of the following companies:

BP, BT, Daimler-Benz, Ericsson, Hoffmann-La Roche, ICI, Investor, Nestlé, Nokia, Olivetti, Philips, Pirelli, Profilo Holding, Renault, Shell International, Siemens, Smurfit, Société Générale de Belgique, Solvay, Suez-Lyonnaise des Eaux, Unilever, VEBA and also representatives of BDI & UNICE.

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November 1998



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Innovation boosts competitiveness and creates jobs

Employment levels are directly linked to competitiveness, which creates the wealth necessary to fund jobs. Competitiveness is in turn linked to innovation, which allows us to keep pace with, or even take the lead in, advances in world markets.

The key to unlocking the potential of Europe is Innovation. Tomorrow's jobs rely on our ability to build the right conditions for innovation today, whatever the strength or weakness of the current economic cycle.

That is why we are writing this Report.

Although Europe's Single Market is larger than the US domestic market, the European Union is not itself as competitive as the US. Over the past decade the EU has not matched the US, either in terms of economic growth and job creation, or in the development of businesses based on radically new technologies.

Nevertheless, we in the European Round Table know from our own experience of running major multinational companies with worldwide operations that new businesses can be created with sustainable new jobs.

But too many job opportunities in Europe's network of businesses are lost because of obstacles set up by European traditions and over-prescriptive legislative systems. Removing these obstacles and providing incentives are central to the messages of this Report.

We need to act now. This is a critical time for Europe, with the single currency about to become reality, and the enlargement of the European Union on the near horizon.

In May 1998 we organised a Colloquium in Brussels where experts met an audience of senior policy-

makers to discuss different ways of using innovation to create new jobs. The wide-ranging debate convinced us that new initiatives are needed to improve the innovation process and to combat stagnation in Europe's performance.

We are most grateful to the speakers who led the debates, and to the participants. Their main conclusions are presented in this Report, together with relevant data and case studies drawing on corporate and SME experience.

Europe has less innovation and fewer entrepreneurs than the US. As ERT members we are convinced that this situation can be put right through rapid action taken by Europeans in their public and private capacities.

We direct this Report towards decision-makers in all walks of life: to politicians and businessmen, to public servants and professors.

Six courses of action are identified in this Report. We believe that effort in these areas will make an immediate difference to innovation in Europe. This will help improve competitiveness and lead to new jobs.

We invite you to act with us to help bring these ideas to reality.

Daniel Janssen
Chairman of the Board, Solvay
Chairman, ERT Competitiveness Working Group



Our view of innovation

“He that will not apply new remedies must expect new evils; for time is the greatest innovator.”

Francis Bacon “Of Innovations” (1561-1626)

Change is inevitable. Europe is now facing major changes on all fronts - political, social, economic - some stemming from changes elsewhere in the world, some from within. These changes are complex and admit of no easy solutions. How we respond to the changes now will determine the kind of world we leave to our children in the 21st century.

Innovation is an antidote to inertia and complacency. By itself it is not a panacea. It will not on its own provide a definitive solution to excessive unemployment.

Innovation challenges stale and hidebound ways of thinking and acting. It invites us to look with fresh eyes, to think in different ways, to seek out new answers to old problems.

Innovation leads to the creation of completely new markets - with no way to predict exactly what these will be, let alone how far they will transform our lives. It develops new products, which in turn excite and attract people. It encourages a “feel-good factor” that boosts confidence in where the economy is moving.

Innovation enables us to organise our work and social structures in more efficient and more humane ways. It taps people’s creative energies. It makes the workplace more competitive and also more satisfying.

We have to establish the close connection in Europe between innovation, economic growth and job creation. Indeed, we have grounds for optimism. We have a Single Market of 350 million people, the largest in the world. It will be significantly reinforced by Economic and Monetary Union and the single currency, which will widen capital markets and provide greater venture opportunities. Enlargement of the European Union to admit new Member States will add a new Germany in the first phase and a new France in the second, in population terms.

European companies should now be starting to generate new wealth and new jobs. The new market conditions will revitalise our economies and this must encourage companies of all sizes to be more mobile and forward-looking.

If we benchmark Europe's performance, we get mixed signals from standard innovation indicators. (see Boxes 1 to 6 below)

There are many obstacles that Europe must overcome. They have been well-documented elsewhere: resistance to change, unwillingness to take risks, over-regulation, taxation and administrative disincentives, lack of entrepreneurship, and rigid labour market rules. We have still some way to go to complete the Single Market whereby goods, capital, services, people and their ideas can move freely across Europe.

Other obstacles exist, such as unwieldy approval procedures for new products, slow and expensive patent systems, inefficient research funding systems and, of particular concern, an inability to move quickly from the research idea to market success.

Natural Sciences are critical for the development of new technologies. In 1975 the number of science graduates in Europe was less than half that in the US, but by the early 1990s, the EU had caught up and overtaken the falling US numbers (Box 1).

However, with a long history of deficit and cultural

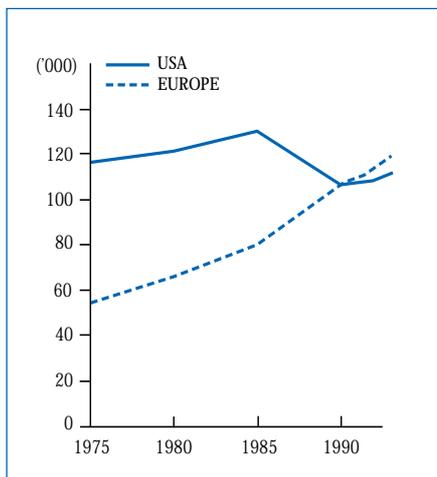
inheritance, Europe still has too few engineers and research scientists in its workforce (Box 2).

In overall job creation numbers, with a smaller population size the US has hugely outperformed the European Union. Many new technology jobs displace traditional occupations, and this job churn affects the overall net increase (Box 3).

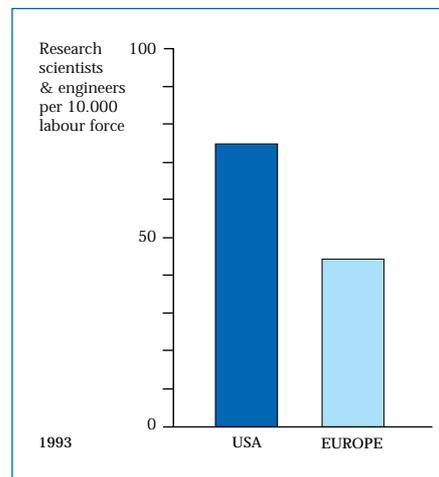
1. Graduates in Natural Sciences EU / US

2. Numbers of research students EU / US

3. Job creation and job churn EU / US



source: Human Resources for Sciences and Technology (1996)



source: Human Resources for Sciences and Technology - National Science Foundation (1996)

The US has created 60 million new jobs in the past 30 years, 14 million since 1992. Most of them are in small fast-growing hi-tech companies. Of course not all these jobs are lasting. Taking into account job churn, the net increase in employment over 30 years is closer to 30 million. During the same period, job creation across the EU was in decline, and job churn was resisted in many sectors.

source: Ernst & Young "European Life Sciences 98" (1995 - 1998)

There is no common pattern across all the countries of Europe.

Δ In countries where markets are freeing up, an increasing number of innovative companies are being founded, revealing a new economic vigour. There is an encouraging revival of venture capital, and new stock markets are being created to target small companies.

Δ In other countries, regrettably, we are still visibly held back by barriers to entry and by limits placed on entrepreneurs and on establishing new businesses.

The EU and national governments are already addressing some of these issues. Implementation of the First Action Plan for Innovation in Europe has started. The ERT welcomes the advances being made in protecting intellectual property rights (IPR), financing innovation, administrative simplification, education and training, and gearing research to innovation.

But all this will be of no use:

Δ if the pace of progress remains leisurely

Δ if the progress achieved on paper is not translated into real change for Europe's citizens on the ground.

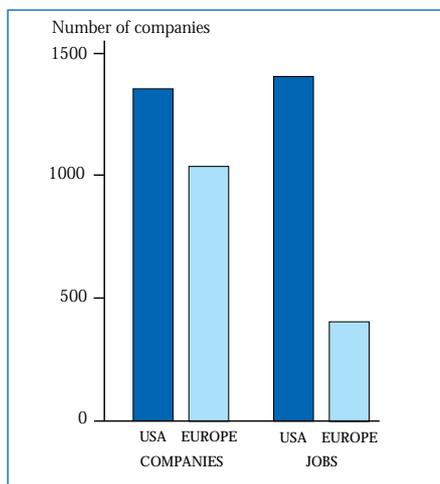
Biotechnology, one of the key enabling technologies of the 21st century, also provides a sharp contrast in performance (Box 4).

The number of specialist companies in Europe has more than doubled in recent years. However the total number of specialist companies in Europe is still less than half of

that in the US, and the number of employees is less than one third of those in the US. Biotech for jobs in Europe still has a long way to go to catch up with the US (Box 5).

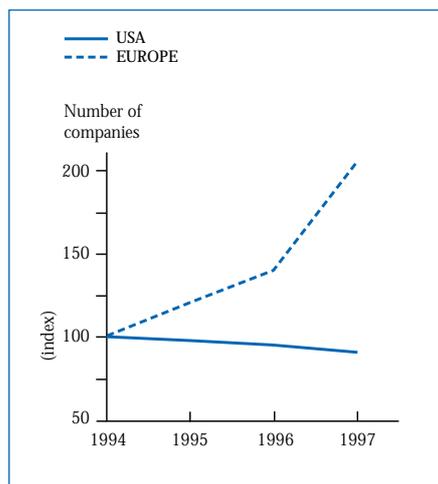
Finally, Europe still has a reasonable share of European patents granted in all areas, but its performance in hi-tech areas such as electronics falls well short of that of the US (Box 6).

4. Biotech companies and the creation of new jobs EU / US



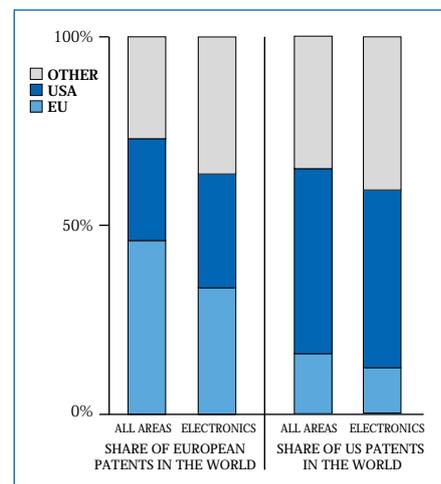
source: Ernst & Young "European Life Sciences 98" (1995 - 1998)

5. Newly created specialist biotech companies EU / US



source: Ernst & Young "European Life Sciences 98" (1995 - 1998)

6. Patents granted in 1996 EU / US



source: CEC: The First Action Plan for Innovation in Europe (1997)

part 2



The heart of the matter

Europe must create more jobs. We owe this to our citizens, young and old. Unemployment is a time bomb waiting to explode. From every point of view, reducing unemployment is to the benefit of all.

How to achieve this is another matter. We can increase our competitiveness and stimulate innovation in our companies and in society. Greater competitiveness and innovation are essential for the creation of new jobs. But to make a stronger link between them requires that we overcome a number of formidable barriers. There must be immediate action on six fronts, namely:





1. CHANGING ATTITUDES



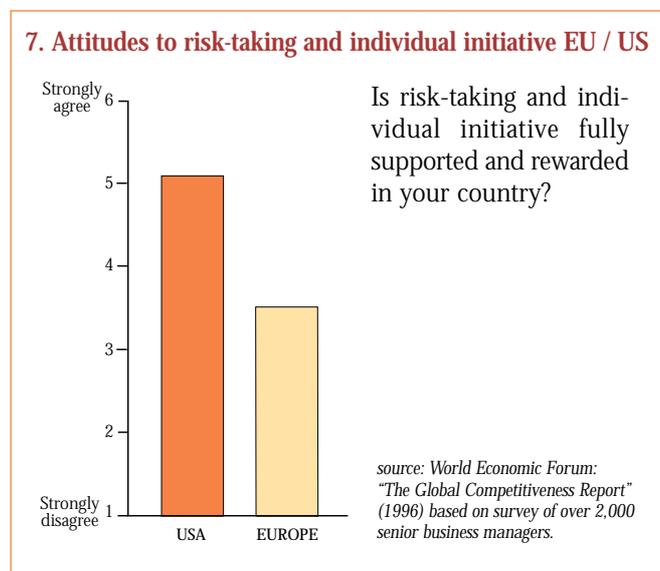
“We live in an industrial revolution which goes so far that the public does not understand it any more. People understand that there is a revolution, but they cannot reconcile this with their personal security. They are afraid of it.”

Elmar Brok, MEP

Europe could learn from the experience of other countries, but it does not. “We do ten years later what the Americans have already done and have forgotten,” says Brok. This is confirmed in a recent survey of business opinion conducted by the World Economic Forum (Box 7).

taxation, social security and care of the environment. In time, voting will be done electronically, and this will radically change the interaction between citizens and those who represent them. ICT will also affect the provision of healthcare as much as it will transform the leisure market.

7. Attitudes to risk-taking and individual initiative EU / US



Industry will have a major part to play in promoting the wider acceptance of the cashless society with electronic commerce. The INTERNET paves the way.

ICT is but one driver of change. “Understanding the genetic basis of life will revolutionise our lives just as ICT did,” argues Jonathan Knowles of Hoffmann-La Roche. A better understanding of how illnesses arise, and of the possible preventative actions, will entirely change the practice of medicine.

Resistance to change not only affects new science, it undermines entrepreneurship and employment. **Our biggest challenge is to persuade society to be inspired by the advances of science** instead of resisting them.

Biotechnology will have a significant impact on insurance and healthcare funding, as well as on the efficiency of work and on the cost of healthcare provision to our societies. Biotechnology already constitutes the new foundation for agriculture, the food industry, pharmaceuticals and environmental management. For all this to happen, our attitudes to innovation will have to come to terms with the speed and extent of progress throughout the life sciences.

Many surprises are still in store for society from further applications of **Information and Communication Technologies (ICT)**. Innovations as a result of ICT have already affected banking and transport, and are about to revolutionise public services such as

Governments must play a leading role in helping to change society by brokering the opportunities of innovation and entrepreneurship to the public. They must themselves become more innovative and entrepreneurial, as the UK Government has done (Box 8). These cultural changes are as important as opening up markets and removing rules and regulations that visibly block progress.

8. UK Government progress in one year

The UK Government is committed to improving the environment for innovation in Britain. The previous government had already introduced favourable personal and capital gains tax measures to improve the risk reward balance for innovators. The current government initiated a year-long consultation exercise to find out what else had to be done. The results stressed the need for leadership and partnership in innovation.

The Government has now defined a new set of goals to guide national policies. These aim to simplify regulations, provide new integrated sources of finance, develop an adaptable workforce, encourage continuous learning, and open up product, labour and capital markets. Above all, it is now recognised that government and business need to share information, goals and cultures, and to pull together as a team.

For larger companies, **a strong corporate culture can be a positive driver of innovation.** They can choose to replace rigid hierarchies with flexible management systems, and benchmark their management and overall performance against global best practice.

Under the impetus of innovation, **established companies can reinvent themselves** to achieve a new competitive style matching future needs, as did Philips (Box 9). The transformation that comes from within is usually the most successful.

9. The transformation of Philips

Philips, a large company with 300,000 employees, was facing bankruptcy in 1990. Yet in the space of five years the company returned to profit and changed the way the outside world perceives it.

All this required the development of new corporate objectives of transparency, accountability and de-verticalisation. Although a large number of jobs were shed, the company took pains to foster conditions for new job opportunities. In several countries a host of small businesses are thriving on and around the sites of former Philips production facilities. Many of these are hi-tech and are run by former employees.

The importance of flexible attitudes and of new ways of thinking is highlighted in the way that British Petroleum (BP) reviewed its insurance strategy (Box 10).

10. New approach to insurance at BP

Finding new solutions to an old problem enabled BP to save money and improve shareholder value.

For 75 years BP had bought insurance to hedge against large potential losses while self-insuring against smaller ones. This changed dramatically in the 1990s, when BP switched to a new policy of virtually no insurance.

This innovation was the result of viewing insurance in a new way - from the perspective of long-term shareholder value. Cost analysis also showed that over a long period the premiums paid vastly exceeded the claims made.

This required a major attitudinal shift on the part of BP's directors and managers. BP initiated a worldwide programme to educate its managers in risk and how to value it. This new approach has generated premium savings of EUR 85 million per year and demonstrated confidence in the company's improved safety performance.

In the world of **finance and banking**, the challenge is to be more open to risk, and to accept success and failure as part of normal business life. Lenders should not attach stigma attached to business failure. Nor should small-scale start-ups be denied funds because there is no guarantee of early payback.

Attitudes must also change in the **labour market**. Jobs associated with new technology do not follow the pattern of traditional jobs. It is important therefore to get public acceptance of the entrepreneurial model of employment: flexible, mobile, risk-taking and increasingly working at home for multiple employers.

School leavers must be ready for a working and living environment very different from that of their

parents. ERT reiterates its call to place greater emphasis on **entrepreneurship in schools** and in colleges. And similar emphasis is required to boost respect for innovative ideas.

Opposition to new technologies existed even before the days when people first tried to smash printing works and textile machines. Modern **opposition to scientific progress** is however more insidious. Powerful media messages reach a wide public immediately and exert a pervasive effect. This can influence national attitudes, even the way people vote.

We have to get **more accurate information across to the public** in order to enable a better balance to be achieved. Potential consumers of new products need access to commonsense information to offset often sensational media reporting. Technological novelty, or personal success, should no longer be singled out for abuse or for ridicule. It is also up to politicians to market the opportunities of change and of entrepreneurship to the public. One way is to provide sponsorship to improve the reporting of scientific and technological subjects in newspapers and journals, on radio and TV, and on the INTERNET. Industry in turn must be readier to provide information that is easy to comprehend.

PRIORITY ACTIONS

Change attitudes by promoting a European Society open to innovations in science, technology, business, living and working conditions:

- △ Promote the spirit of enterprise throughout society, in industry, government, finance and in education.
- △ Ensure that sound and well-researched information on scientific breakthroughs, new products and services always gets through to the public.

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2. CREATING NEW BUSINESSES



“We in Europe are inward-looking all the time. Whenever you enter a market or a new business, you must think global because it is only in the global perspective that Europe can survive.”

Lars Ramqvist, Chairman of Ericsson

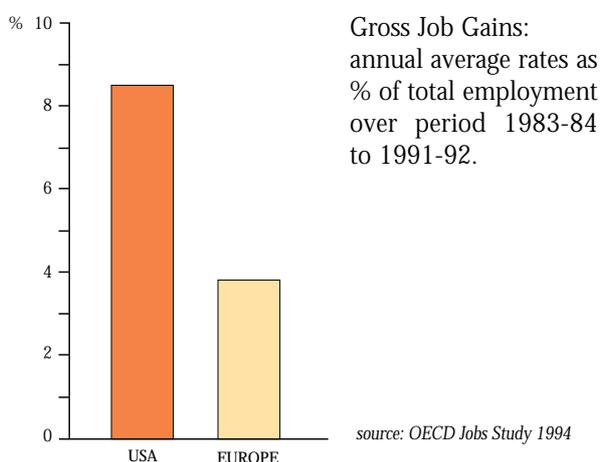
Innovation boosts competitiveness and creates jobs. It is the origin of new products and services in markets which better meet existing needs and better satisfy new customer demands. A competitive Europe can create more jobs if it welcomes the value of new technologies and the creation of new businesses and new business sectors.

New business sectors require:

- **people with vision** to identify a clear need,
- **world-class science** to develop the right products,
- an **open regulatory environment** in which markets for the new products can flourish,
- a **system of rewards** that provides incentives for risk-takers.

At present, the rate of job creation in Europe resulting from new company openings is less than half the US rate (Box 11).

11. Jobs created by new company openings EU/US

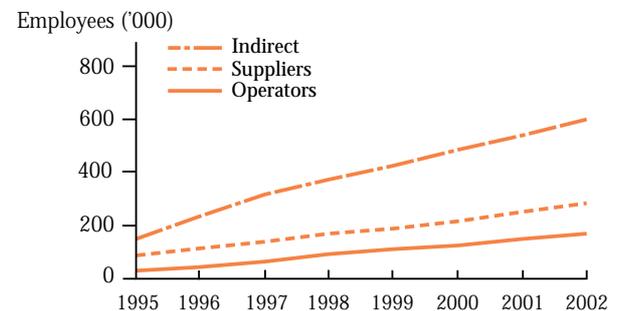


From the outset, products should be designed with **global markets** in view, and greater priority should be given to negotiating and using international standards. The most striking example of an entirely new industry based on a new worldwide standard is mobile telephony with its GSM (Global System for Mobile Communications) standard. Scandinavian companies now dominate global markets for mobile phones (Box 12) since they pushed early and hardest for the GSM standard.

12. Mobile telephony

This is a fast-growing market. In the EU there are now more than 70 million subscribers. There are likely to be around 1.3 billion throughout the world by 2003. This sector has created over 300,000 European jobs in equipment suppliers and operators. Continued growth with the next generation of mobile telephony could lead to the creation of a further 300,000 jobs by the year 2002.

European mobile phones - Employees (estimate)



Large and small companies need each other. Smaller companies can add flexibility and accelerate the process of innovation when working together with large companies. The strength of these links is described in our report on practical partnerships between large and small companies (Box 13).

13. "A Stimulus to Job Creation"

This 1996 ERT Report argues that cooperation between large and small companies is part of the transformation of the world of work, with a profound effect on job creation. Large company investment leading to new jobs may now take the form of providing funds for start-ups, the transfer of knowledge, specialist education and training, and management support for sub-contracted and spin-off activities. All this helps to build up new business infrastructures which can grow and thrive.

There is great potential for job creation in an expanding fabric of small innovative start-ups and SMEs. Entrepreneurs and new business start-ups are both a rich source for new employment, but these jobs will not come into being without someone taking a chance. As Jos Peeters of Capricorn Venture Partners, says: "Jobs cannot be created by decree. They are created by entrepreneurs who exploit new opportunities and who take personal risks."

Entrepreneurship is as vital to large companies as it is to smaller ones. Many are now empowering their employees to use more initiative and act as entrepreneurs, thus creating new jobs.

"A negative attitude in large corporations is dangerous," says Lars Ramqvist. "If companies are too stiff or rigid, that leads to the kind of downsizing and outsourcing which kills lots of jobs, instead of reshuffling and reorganising the jobs within the companies themselves."

By generating new activity with a very long-term perspective, large companies also create sustainable new jobs. Shell's investment in renewable energy is one example (Box 14).

Using the logic of the entrepreneur, a new company may be created inside a larger company and then be spun off. It can then develop a life of its own, unfettered by supervision from tighter, more rigid procedures that have evolved to suit the demands of a large organisation (Box 15).

14. Shell invests for the long-term in renewable energies

Industry must often be prepared to make long-term investments. At present, renewable energies can only compete with fossil energy in niche markets. According to a Shell Group scenario, half of the total world energy demand could be provided by renewables by the year 2050.

To become a major player in this field, Shell International Renewables was created in 1997 with an investment plan of EUR 500 million for the following five years. Half of that amount is destined for forestry and the other half for biomass conversion, solar voltaics and wind power. This strategy also provides new jobs.

A new 25 MW photovoltaic power plant in Germany based on up-to-date technology, due to start in 1999, will create more than 300 jobs.

15. Low cost colour printing

When Bayer's research department came up with an innovative new technology capable of providing high quality, short run colour printing quickly and at low cost, the company was not planning to expand activities in that area. But there was a gap in the market between office printers and photocopiers on the one hand and conventional printing equipment on the other. Bayer therefore spun off the activity in a new company - providing it with full support, including seed capital, advice and facilities.

Zeikon, the new company, was set up in Belgium in 1988. Risk capital in the development stage came from venture capitalists and the Flemish regional authorities. Later, funds came from a private equity placement and an IPO on NASDAQ. The company now has annual sales of EUR 67 million and employs more than 160 people.

Both **start-ups and spin offs need easier access to risk capital.** This is particularly true in certain parts of Europe where seed capital and venture capital are in their infancy. Closer co-operation between large companies and venture capitalists should be encouraged to identify and create new spin-offs.

British Telecommunications (BT) adopted another approach. To acquire the skills needed to compete in a new market segment, BT established a joint venture with a partner with complementary skills. They eventually bought out the partner when the business was fully fledged (Box 16).

16. BT and Concert Communications

Concert Communications Services was a joint venture company created by BT with MCI to satisfy the growing need amongst international companies for one single telecoms supplier able to manage seamlessly their communications needs around the globe.

Conceived five years ago, it was recognised that a dynamic multi-skilled team was needed to exploit the market opportunity. People with experience in both technology and marketing were drawn from the partner companies around the globe. A “can do” culture was developed and brought to market.

Sales grew by nearly 50% each year, eventually exceeding EUR 1 billion with more than 1000 people on the payroll. BT recently bought out its partner and now owns the whole concern.

Running an innovative company requires creativity, enthusiasm and drive. Innovative management means encouraging genuine job mobility and fostering **a stronger sense of personal responsibility and empowerment** throughout the company. Managers who take initiative and take risks naturally expect to be rewarded on the basis of their success rather than on the basis of length of service. In many companies this is difficult to achieve.

We need to move away from a fixed-wage-earning society to a performance-linked compensation

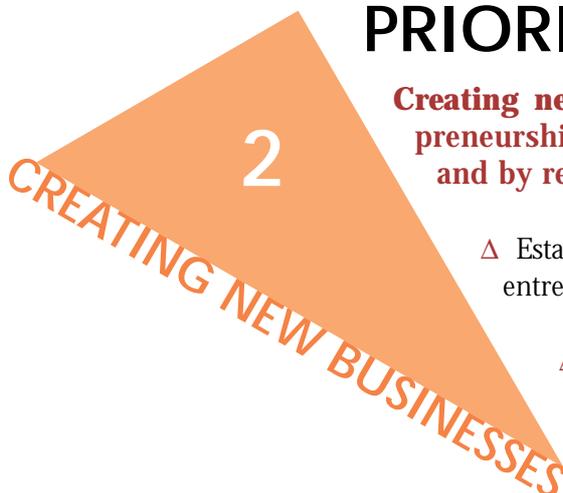
system. Successful entrepreneurs and their staff should be allowed to earn and to keep more of their own money. Stock options and other means of raising the variable part of personal income should be permitted and encouraged.

We urge governments to reform and modernise their personal taxation systems, social security arrangements and pension schemes to meet the needs of modern working individuals and to provide appropriate incentives for inventors and investors as well as entrepreneurs.

More favourable conditions should be created for lending money to start-ups and to companies that have good reasons to expand quickly. **Failure should not block entrepreneurs from trying again.** In the American context, failure can even be honourable. “In California, if by the age of 35 you have not failed three times, you have not been trying hard enough,” cites Antonio Borges, Dean of INSEAD.

Europe’s newest companies that use cutting edge technologies are usually able to recruit the scientists they need, but seldom find managers of the right dynamic calibre. Scientists with good management skills are even rarer, though this combination of qualities is increasingly in demand.

PRIORITY ACTIONS



Creating new businesses means fostering entrepreneurship by removing obstacles to initiative and by rewarding risk-taking and success:

- △ Establish supportive fiscal conditions for inventors, entrepreneurs and investors.
- △ Drastically reduce the demands of bureaucracy and ensure that legislation does not penalise failure.

3. RESEARCH AND DEVELOPMENT



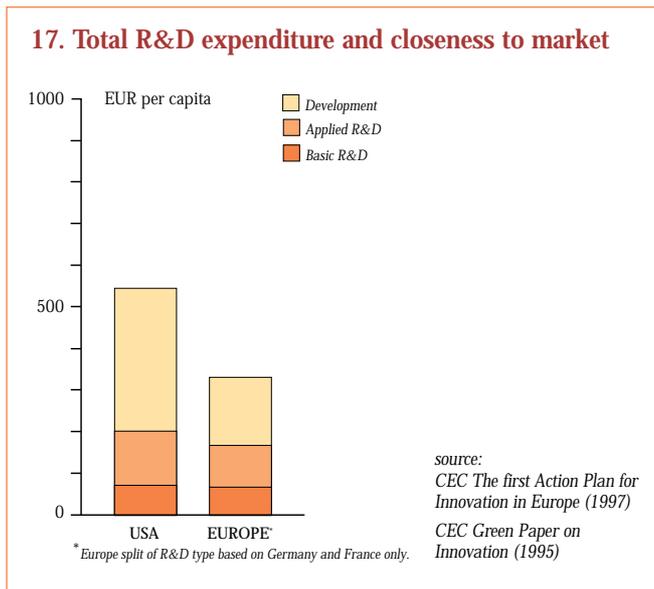
“We must restore the confidence of our citizens in science and in progress.”

Mme Edith Cresson, Member of the Commission responsible for Research and Innovation

The transformation of scientific breakthroughs from basic research into commercial success is fundamental to competitiveness. **Too many European inventions are being successfully exploited outside Europe.** Europe spends less than 1.5% of its GNP on R&D, which compares badly with 2.5% in the US and 2.8% in Japan. The European Union’s budget devotes just 4% to R&D. Moreover, Europe spends relatively less on the development phase than do its principal competitors (Box 17).

procedures in public/private joint efforts with unnecessary bureaucracy.

Public programmes should be used as springboards for private initiatives. The European Action Plan on Innovation (Box 18) and the European Fifth Framework Programme (Box 19) are both intended to stimulate entrepreneurship in Europe.



18. EC First Action Plan on Innovation

“Cultural attitudes, the economic environment, the social context and the educational and legal structures are key factors in the spirit of innovation and enterprise.” *Innovation for Growth and Employment* (produced by DG XII for the European Commission). This document reports on implementation of the First Action Plan on Innovation in Europe, adopted in 1996.

The 1997 Luxembourg European Council on Employment confirmed the Plan’s proposal to tackle unemployment by stimulating research and innovation. It also identified the need to encourage the spirit of enterprise, and generally improve conditions for small and medium enterprises (SMEs).

The orientation and management of public programmes have failed to keep step with the pace of innovation. If more public funding is called for, it must be more innovatively managed. Issues of accountability affecting the use of public money must not be allowed to weigh down management

The Framework Programme must go beyond developing the competitiveness of an inner circle of manufacturers and their traditional partners in specific markets. “It presents a unique opportunity to work together in R&D”, says Pier Giorgio Gili of Fiat, “but the real impact on Europe is linked to the strategic emphasis we can give to its focus, organisation and management.”

19. The Fifth Framework Programme for R&D in Europe

The Commission sees the 5th Framework Programme as an instrument of a new Community research strategy. Europe's citizens now expect scientific and technological advance to meet their concerns with regard to health and quality of life, and their aspirations in terms of social welfare and economic prosperity. This is the starting point.

FP5 is geared toward objectives of great relevance to the Union, and actions have to represent more clearly the added value over national initiatives. Characterised by a simplified structure of 6 programmes, it thus breaks new ground. Simplification will lead to more consistency as a result of wider ranging programmes, each addressing priority socio-economic needs. Increased flexibility and efficiency of management are to be achieved by decompartmentalisation of activities within programmes where different scientific and technological disciplines interact.

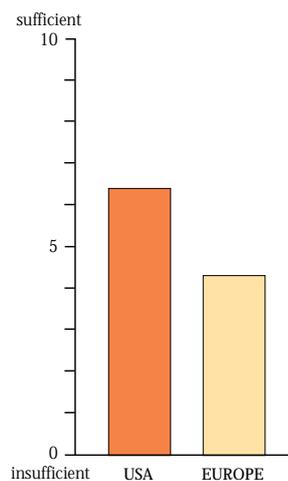
We should now be encouraging cross-participation over the entire scientific, technological and industrial frame in Europe, public and private, with greater attention to small companies and innovative start-ups, and to the stimulation of public/private partnerships.

European competition law should allow companies to work on R&D in **joint ventures and in large international partnerships** to achieve critical mass. Research joint ventures in Europe often need prior approval from the Commission's DG IV. In this crucial area, American anti-trust law is generally more understanding, thus research groupings in the US are usually three to four times larger than those in Europe. Moreover, "for Europe it is really necessary to complement successful intra-European partnerships by some more international ones. The existing US-EU alliances play a very important role," argues Frieder Meyer-Krahmer of the Fraunhofer Institut.

The time has come to extend the Single Market concept into the world of academia and, above all, into publicly funded R&D. Europe can no longer afford to disperse its resources, human and material, in parallel work in different national institutions. The "Centres of Excellence" concept will have to be refined and more specialisation introduced to ensure pan-European critical mass. This will require greater mobility of researchers, and a readiness to accept that certain disciplines may lose their place in the national context in order to achieve balance at EU level.

Cooperation between companies and universities in research is less common in Europe than in either of its major competitors. In some countries it is even illegal to **commercialise research ideas coming from academic institutions**. We need to find a way to facilitate and improve this type of co-operation (Box 20).

20. Research cooperation: perception of business leaders



Research co-operation between companies and universities

source: IMD: "The World Competitiveness Yearbook" (1996) based on a survey of more than 3,000 senior business managers.

But there are examples of successful co-operation, as in the case of the development of a new tyre by Pirelli (Box 21).

21. Pirelli and the P6000 Tyre

Pirelli developed a new tyre (*the P6000*) launched in 1995, which sets new standards in the high performance tyre market through its use of new materials, new tread designs, a new tyre profile and improvements in tyre structure.

During the development phase Pirelli worked closely with a number of universities. There were regular exchanges of information with customers, and close relationships were established with researchers in the auto industry and raw materials suppliers. Production and launch of the new tyre also involved new ways of working in Pirelli, with different functions and organisations in different countries all co-operating closely to ensure the success of the new product.

This breakthrough was achieved as a result of a fundamental change in the behaviour and attitudes of people in the company. A wide network of contacts was used to gather new knowledge.

Another critical test will be how we handle biotechnology, which will change the face of industry in Europe. The likely impact of biotechnology on virtually all our existing R&D programmes and processes is greatly underestimated. Biotechnology challenges our cultural preconceptions and could affect forever how R&D programmes are organised. Yet at the European level it has no single home, being the responsibility of several Directorates General inside the European Commission, with a total lack of overall strategic orientation.

Biotechnology is thus an unwelcome orphan in the system. **A home must be found**, and that preferably inside a Directorate handling industrial policy. Until this is achieved, we run the risk of rejecting the technology today, only to import the products tomorrow.

Industry can play a major role in providing new employment through R&D. Science-based innovation inside companies requires **early cooperation between research, product and marketing departments**. Many excellent scientific ideas are never turned into commercially viable products because scientists do not have the necessary commercial and management skills, nor do they understand the consumer. In the US this kind of cooperation is part of their training and their culture.

Innovation, benchmarking, upskilling, customer focus and speed-to-market must be introduced as top priorities in Europe's research establishments to keep alive the concept of competitiveness. **Close cooperation between creative scientists in industry with their counterparts in academia** can generate positive synergies for both sides.

A good example of a customer-focused development is the Unilever CheckPro system (Box 22).

Chief among the **principal obstacles** on the path between invention and innovation are bureaucracy and administrative systems that demonstrate a complete lack of understanding of R&D needs, particularly on intellectual property rights (IPR) and time to market. **Patents are painfully slow to file** and immensely expensive to translate and maintain. One large European multinational, having more than 1000 patent applications a year, estimates that the annual cost for translations alone lies between

22. Customer-led innovation at Unilever

Good science must take place close to the market if it is to be turned into successful innovation. Unilever's new product (*Checkpro*) came directly out of the creative interaction between marketer and scientist.

Checkpro is used to monitor hygiene standards in catering establishments. Developed in response to rising food hygiene concerns, it meets a growing need for information that can be obtained simply, quickly and cheaply.

The market opportunity was identified by a marketing manager, not a scientist, who specified the precise performance requirements of the product before the research programme began. The research was targeted from the start to develop a product that was fast, low cost and usable by anyone.

23. The need for a unitary patent system in the European Union

Patents play a key role for European industry in Europe and worldwide. A unitary, well-structured and cost-effective patent system is crucial to increase companies' competitiveness and to foster the free movement of goods, yet there are three patent systems in Europe:

- a) national patent laws
- b) the European Patent Convention system (EPC)
- c) the Community Patent Convention and its Protocol (CPC).

Industry must have a unitary Community patent system, which means one patent covering the whole EU:

- a single language system (i.e. English, with possibility to file patent applications in any official language, but with translation into English);
- a single unitary judicial system for enforcement, i.e. by European courts, European procedural rules and injunctions.

To accommodate enterprises having limited geographical interests or ambitions, the existing European patent system and national patent systems would remain.

EUR 20-30 million. **A true Single Market must have a workable unitary European patent** (Box 23).

Crucially in terms of innovations and the market, **new product authorisations take many times longer in Europe** than in the US. This particularly affects biotechnology, but also threatens competitiveness in many other sectors.

Even worse, **insufficient public recognition is given to early stage technology developments** in brand new hi-tech or life science sectors. Yet it is precisely in these areas that specialised SMEs can take up the opportunities and grow spectacularly fast. They should be accorded higher priority in the queue for funding.

Restrictive national laws limit the formation and transformation of research teams in several countries. Compared with the US, and even Japan, Europe produces too few scientists and engineers, and does not do enough to persuade highly qualified graduates to stay and work in Europe instead of seeking jobs and improved conditions elsewhere.

Though later than in the US, Europe is beginning to see the clustering of new small businesses around important centres of learning, particularly in the hi-tech, nanotechnology, biotech and pharmaceutical fields. This natural phenomenon is highly positive. We also have some **universities actively incubating small companies**. The success of Iona Technologies (Box 24) shows clearly what opportunities Europe is missing if it does not provide greater encouragement for such start-ups.

24. From campus company to NASDAQ in 6 years

IONA Technologies was started in 1991 by two people in the Computer Science Department of Trinity College, Dublin, working on ESPRIT-funded projects. From there it was fostered by the Campus Innovation Centre and after two years was solid enough to be able to move out, to launch new products and to form alliances with larger companies such as Sun Microsystems.

IONA's success is based on "distributed object technology" that enables businesses to communicate between different software applications. It is now the number one supplier in the market and its main product is used by over 3500 businesses worldwide. IONA has a turnover of EUR 52 million and employs 470 people. It was floated on NASDAQ in February 1997, valued at EUR 300 million.

PRIORITY ACTIONS

Get more from Europe's Research and Development through introducing the Single Market concept to our research and academic communities:

RESEARCH

3

AND DEVELOPMENT

△ Reform the patent systems in Europe, permitting single filing of a unitary patent for all Europe with no translation obligations.

△ Promote biotechnology as one of the key technologies of the new Millennium and provide a more supportive external and regulatory environment.



4. KNOWLEDGE AND SKILLS



“I think there is a poison in education all across Europe which is anti-industry and anti-entrepreneurship.”

Jos Peeters, Capricorn Venture Partners

People are now, more than ever, Europe’s most valuable resource. We have already seen how our future society will be strongly influenced by scientific and technological progress. Other international bodies share this view (Box 25). A knowledge-based economy cannot be separated from the skill-sets of its citizens, who will be expected to use the new technologies and to create the future demand for them.

25. The role of people

“Jobs are shifting from low-skilled to high-skilled workers. Many firms see strong productivity growth and job gains through the combination of technological change, organisational change and upskilling.”

Technology, Productivity and Job Creation, OECD, 1998

“In the fast media-driven world of today, a minimum of scientific culture and critical outlook are essential for distinguishing the false from the truth.”

IRDAC Report Quality and Relevance, European Commission, 1994

Europe therefore needs a highly knowledgeable workforce with a **constantly evolving palette of skills and aptitudes** that did not exist ten years earlier. Today we need to train people to be able to adapt to future jobs in areas that have not been identified yet. “Employability means that you have to be the master of your own future, so you have to be your own company, in a sense,” says Ben Knapen of Philips.

Work patterns are changing towards increased mobility, declining central office functions, flattened management hierarchies, and new methods of knowledge management within companies that operate at global rather than national level. This type of new working environment can be highly productive, as seen in the case of Nokia (Box 26).

26. New ways of working in Nokia

Nokia has transformed itself over the past decade into a global leader in mobile communications. They faced the problem of how to grow rapidly while remaining sufficiently nimble to innovate and exploit change in this highly competitive market.

They have introduced new ways of working based on a flat structure and a new culture. New product development involves close cooperation between researchers, marketing and sourcing people, manufacturers and suppliers. The new culture values customer satisfaction, respect for the individual, achievement and continuous learning. Training programmes are now team-based and cross-functional.

These changes have enabled Nokia to speed up decision-making and improve the effectiveness of its R&D.

Our aim is all-round individuals with strong interpersonal skills, capable of living with uncertainty, keen to search for innovative solutions to complex problems, and committed to Lifelong Learning.

Education systems need to be receptive to innovative ideas coming from an ever-widening range of disciplines. But Europe's education leaders also need to embrace innovation. All too often the education process itself is entrusted to people who appear to have **no dialogue with, nor understanding of, industry and the path of progress**. This goes some way to explaining the persistent mismatch between the skills required by employers for new vacancies and those offered by entrants into the labour market.

Our European cultures favour achieving greater security, stability and equality over risk-taking, creativity and innovation. Our education system is more focused on avoiding failure than on taking risks.

A profound reform of education systems in Europe is needed. We have already published our ideas in two Reports, *Education for Europeans* and *Investing in Knowledge* (Box 27). Greater emphasis must be placed on **entrepreneurship at all levels of education**. Despite the pressing need to manage better the transition from school to work, school-industry cooperation is still underdeveloped in Europe.

27. ERT Education Reports

Education for Europeans (1995):

Industry and business need to employ entrepreneurs, not robots. Early specialisation at school is a handicap. Learning is a life-long process where teachers become guides and pupils/students take on responsibility for their careers and future development.

Investing in Knowledge (1997):

The introduction of ICT in education can help develop personalised lifelong education and training schemes. ICT changes the way that people learn, and transforms learning from a passive into an active and far more productive process.

It is obvious to us that school leavers should also not enter the working environment without having been taught a fundamental grounding in today's sciences.

As young people reach school leaving age, their general education should include **basic business concepts** sufficient to enable them to set up and run their own business. We have seen from the success in Scotland of the Schools Enterprise scheme (Box 28) in winning the hearts and minds of schoolchildren that the task is not hopeless, but it requires patience for long-term results. Other European countries should pursue similar programmes without delay.

28. Schools Enterprise Programme in Scotland

A highly popular innovative approach to developing the entrepreneurs of tomorrow has been taken by Scottish Enterprise. A series of educational programmes for schools, colleges and universities, "*from primary to plc*" has been developed since the early 1990s. These are designed to promote more positive attitudes to entrepreneurship.

80% of Scotland's schools have participated in the Schools Enterprise Programme for students aged 5 to 14. And 60% of 14-18 year olds have been offered the opportunity to enjoy real enterprise experience. Seven Scottish universities are now offering modules in entrepreneurship to students in every faculty.

The impact on the youth of Scotland has been considerable. Since the programme started, the number of people interested in starting a business has increased by 35%.

www.Strath.ac.UK/Departments/Enterprise

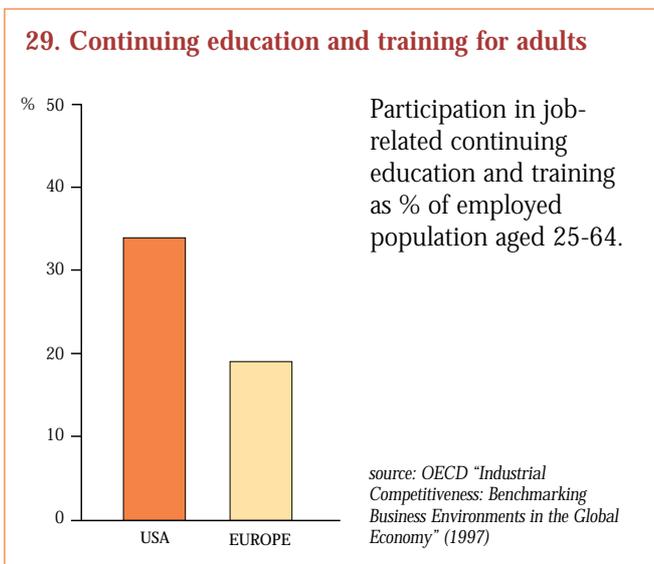
Universities no longer have the monopoly on disseminating knowledge. We cannot leave all action in the hands of the public sector. The provision of education is a market opportunity and should be treated as such. Nowadays there are far more players in the higher education market. Industry also has a role to play.

A large number of industrial companies are running their own programmes to degree standard and above, some in partnership with a university, others on their own. The qualifications thus obtained should be recognised across Europe. In comparison, it is estimated that more than 1000 corporate universities exist in the US.

Business education is a major growth sector with a Europe-wide potential and a growing export market. In the Europe of distance learning, **virtual colleges and universities** are growing in importance, and the way is clearly open for software companies to enter the field in a major way.

For the public and private sectors to interact effectively in a **Learning Society**, it is essential to **train legislators** in the innovative new technologies to enable them to understand the basics of new sectors now being regulated.

We must also find innovative ways to bring new knowledge within reach of managers who are working full time in their businesses. It is unfortunate that the concept of **adult education**, well recognised in some parts of Europe, is completely ignored in others. At the moment, fewer Europeans than Americans are engaged in job-related adult education (Box 29).



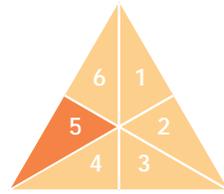
PRIORITY ACTIONS

Improve Europe's knowledge and skills through re-igniting enthusiasm for innovation and entrepreneurship in the educational environment:

- △ Build basic business education into school curricula and provide state of the art education in science and technology.
- △ Promote an Innovation Year to bring the importance of innovation and entrepreneurship into the heart of schools and training colleges.

4

KNOWLEDGE AND SKILLS



“High risks require high returns.”

Stefano Micossi, Head DG III (Industry), European Commission

Fast access to risk capital on reasonable terms and conditions is essential for successful entrepreneurship and innovation, whether this takes the form of seed capital, venture capital or development capital. In much of Europe, small, often locally-dominant, financial institutions lack the vision and the creativity required to assess and evaluate entrepreneurial risk.

In its recent Communication* on Risk Capital, the European Commission argues that employment would be better served by encouraging thriving SMEs, and by increased enterprise creation (especially in high-tech areas) rather than by government-sponsored job creation programmes, or by propping up individual large employers in economic difficulties.

Venture capital is vital for the success of new entrepreneurial companies, many of which would never have come into being if they had relied on traditional financing. The essence of venture capital is a high-level of risk-taking, a willingness to lose in good faith, and patience before cashing in on successful investment. The history of Lernout & Hauspie is a good example of effective financial support (Box 30).

The job creation potential of such firms in Europe is enormous, far outstripping job growth in large more established companies. In a recent study by the European Venture Capital Association (EVCA) and Coopers & Lybrand, 500 companies backed by venture capital were compared with the Top 500 European companies listed by the Financial Times.

* *Risk Capital: A key to job creation in the European Union, 1998*

30. Speech technology

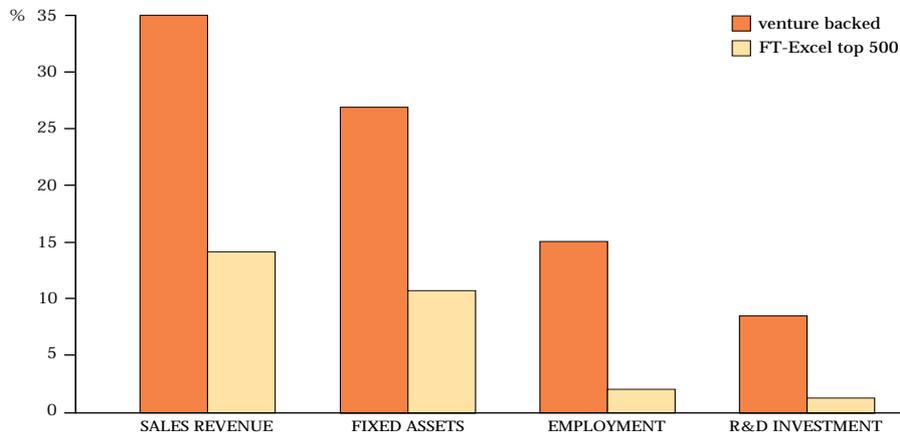
Lernout & Hauspie, a company with roots in Ypres, Belgium, is a world leader in state-of-the-art speech and language technologies: the use of a human voice as the interface and solution for various commercial applications and products. They license products to major companies in the telecommunications, PC/Multimedia, consumer electronics and automotive electronics sector.

Founded ten years ago by two Belgian entrepreneurs, they reached a turnover of EUR 100 million in 1997. The company employs 1800 people directly, and contracts out translation work to another 1500 freelancers. Its success has its origin in the willingness of two people to take risks, a highly innovative product and the provision of a broad range of technologies in a number of platforms and languages.

Access to the right sort of equity capital at the right time has also been crucial. They received support from the Belgian government and local venture capital investors. Access to public capital markets has also been of critical importance. Lernout & Hauspie has been quoted on NASDAQ since 1995 and is now also quoted on EASDAQ. The company has grown in value to over EUR 1.5 billion.

Between 1991 and 1995, venture capital-backed companies managed twice the sales revenue, made more than twice the investment and created a 15% increase in employment, whereas the Top 500 companies had managed an increase of only 2% in job numbers (Box 31).

31. Comparison of growth rates 1991-1995



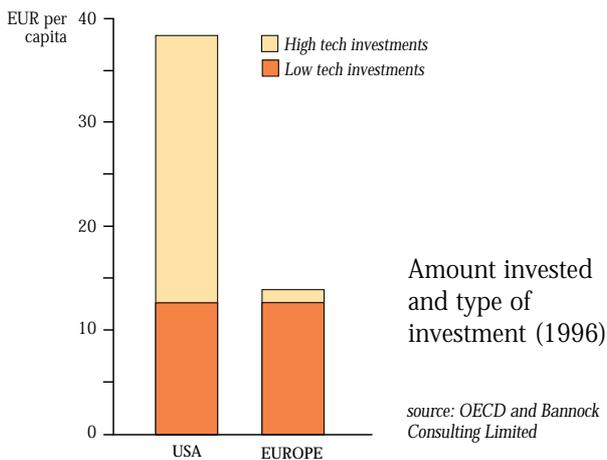
Graph comparing venture capital and Top 500 company growth rates (EVCA)

source: Capricorn Venture Partners

The venture capital industry in Europe is expanding. The networking function between entrepreneurs and investors can itself create revenue flow. Enthusiastic investors spread the word, and more money is channelled towards venture capital companies. New funds raised for venture capital in Europe grew from EUR 3.4 billion in 1993 to EUR 8 billion in 1996. Over the same period, early stage investing almost doubled to EUR 380 million. But this is still only a drop in the ocean compared to the sums raised in the US (Box 32).

Large companies too have an important role to play in providing funding for new small companies. One example is given by Jefferson Smurfit in Ireland (Box 33).

32. Formal sources of venture capital



Amount invested and type of investment (1996)

source: OECD and Bannock Consulting Limited

Venture capital is now being increasingly used for service companies and university spin-offs. Venture capital companies often provide not only equity but also mentoring and strategic analysis to help those setting up on their own.

33. Smurfit Job Creation Enterprise Fund

In 1993 the Irish Government urged large companies to encourage the establishment of small companies in order to stimulate enterprise and employment in Ireland. In response, the Jefferson Smurfit Group set up a Job Creation Venture Capital Fund of EUR 15 million to assist start-ups and the early stage development of manufacturing and traded service companies. In 1996 the Government provided EUR 7.5 million in additional matching funds.

Jefferson Smurfit also provide executives to sit on the board of small companies and to act as mentors.

Over the past five years the fund has invested EUR 12 million in 25 projects, which now employ 750 people, an increase of 300 on their preinvestment level. The fund is showing a significant return, and two projects are now preparing for an IPO.

Overall, we urgently require more innovation and creativity in the world of European finance, banking and investment. For a start, given current uncertainties, the **completion of the Single Market for financial services** would give a powerful and much needed signal to both banks and businesses that Europe is determined to ensure that its financial system is in order.

In particular, **restrictions on how pension funds can be invested must be abolished.** In the US, pension funds are important major investors in venture capital funds. But in most of Europe (except in Ireland, the Netherlands and the UK) they are not permitted to do so.

Pension funds are intended to generate growing returns on capital over time to finance the retirement of their members. They should be allowed to concentrate on the instruments with the best historical record, that is on long-term investment in equities. An all too common bias in favour of government paper severely limits the positive role these institutions can play in a European growth scenario. Allocating their assets to optimise their return on investments would boost growth and job creation in Europe.

Initial public offerings (IPO) have significantly increased the return for venture capital funds. Access to stock market quotations is being made easier for small companies. A stock market role is important for giving immediate visibility to brand new companies in fast-growing markets, as the small biotech company Innogenetics found out (Box 34).

34. The Innogenetics experience

Innogenetics started as a biotech company in Belgium in 1985, at a time when venture capital was scarce. After ten years the company was doing well, but was still small in size and visibility. It went public on EASDAQ in 1996 and two years later its stock had risen from \$12 a share to \$65. In the process it had become the largest biotech company in Europe.

The company chairman and founder believes that if EASDAQ had existed 20 or 25 years earlier, Europe would have hundreds of thousands more jobs today.

Between 1990 and 1994, companies listed on NASDAQ, the US stock exchange for small companies, created 16% of all jobs in the US although they represent only 2.5% of total employment. Following the success of NASDAQ, Europe has produced several specialised markets.

The best known of these is EASDAQ, the European Association of Securities Dealers Automated Quotation. A recent alliance of the French Nouveau Marché, Germany's Neuer Markt and the Dutch

NMAX forms a network called EURO.TM. Other exchanges which target high-growth SMEs, such as the UK's AIM (Alternative Investment Market), are moving well. **We have to sustain the development of these exchanges in order to boost employment** (Box 35).

35. Stock markets for small companies, US/EU

NASDAQ has some 5400 listed companies. Its market capitalisation exceeds \$2 trillion, and in 1994 it created 16% of all new jobs in the US.

The market capitalisation of EASDAQ is \$15 billion (but growing fast). It is estimated that all the European stock exchanges that target high-growth companies together contribute to the creation of 15% of all new jobs in Europe each year.

More than one third of US venture capital is devoted to start-ups, compared with only 10% in Europe, which still favours management buy-outs.

Meanwhile there is a **confusing proliferation** across Europe of public/private schemes to assist the financing of start-ups and further growth of small businesses. Without doubt this constitutes a significant misallocation of resources. A hard look at results reveals that most of these have proven ineffective. This is borne out by the depressingly small number of dynamic SMEs actually created. Greater use should be made of public/private and private/private schemes such as mentoring, management training, access and contacts provision.

Investment in early stage technology in Europe is about one-seventh of that in the US. Europe's R&D sector is always in need of new funds, with fewer strings attached, as it sets out to achieve the critical mass necessary for global competition. **Better access to private funds for investment in early stage technology** would help attract research activities back to Europe and leverage funding from public sources.

As a further stimulus to initiative, **financial advantage should accrue to those who generate wealth.** Taxation systems should be modified accordingly. Reform should be introduced to create tax-efficient stock option plans. The differing tax

treatments for venture capital, which discourage this type of investment in some Member States, must be eliminated.

European standards of **corporate governance** are still too ill-defined and lack the transparency that investors need. Greater clarity would assist capital markets in allocation of resources, boosting prospects for long-term sustainable growth. The ERT strongly supports the OECD position on corporate governance.

Finally, the ERT calls for action on the Commission's recommendations to facilitate the transfer of company ownership in order to safeguard businesses as generations change. This too is one of the EVCA's eight challenges to government (Box 36).

36. The challenges to government set by the European Venture Capital Association

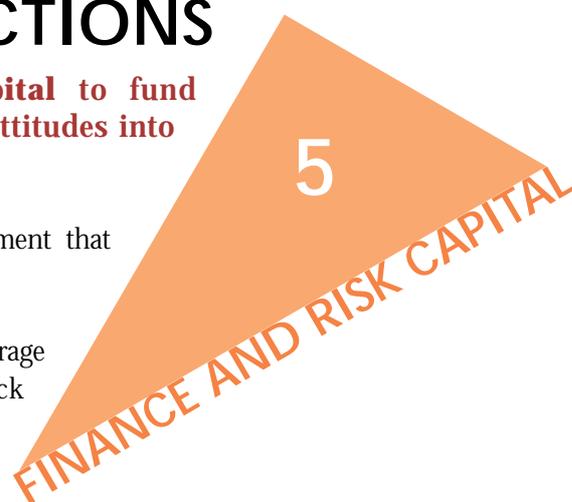
1. Encourage dynamic entrepreneurship and management.
2. Provide competitive stock markets for smaller and growing companies.
3. Develop and channel sources of long-term capital.
4. Provide appropriate investment fund structures for private equity funds.
5. Adjust tax rewards for those bearing the highest risks.
6. Promote investment in innovative start-up ventures
7. Facilitate the transfer of company ownership to revitalise existing businesses.
8. Develop the markets in countries where private equity is emerging.

source: EVCA White Paper *Boosting Europe's growing companies*.

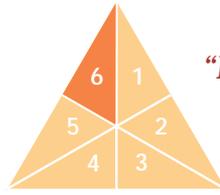
PRIORITY ACTIONS

Free up more finance and risk capital to fund businesses by injecting entrepreneurial attitudes into the world of finance and banking:

- △ Remove restrictions on pension fund investment that hold back risk capital.
- △ Expand access to risk capital markets and encourage the development of the pan-European stock markets that target small high-growth companies.



6. GOVERNMENT AND LEGISLATION



“Partnership between business and government is vital. Leadership on innovation must come from both sides pushing together. If they don’t work together, then nothing will happen.”

Lord Simon of Highbury

There is a great deal that government in Europe can do to create an environment receptive to innovation. The good news is that much is already being done. The bad news is that more is needed because the external world never stops changing. Therefore - whether national or regional or Union - **government must continuously evolve in policy-making.** What has been done can be built upon, but we do not just need *more*, we now need something *different*.

The more active European governments have started benchmarking their policies and services to ensure that quality keeps pace with new citizen demands and those imposed by new technologies. Others, however, declare their good intentions but with little real follow-up.

It is essential to complete Single Market legislation and to enforce national implementation of EU legislation. But this will only take us part of the way. There is broad agreement on the principle of liberalisation of markets for products, labour and capital, but Member States argue that this should be done in a way that does not undermine a European Social Model which aims to ensure job security. ERT notes, however, that Western Europe has long suffered the highest unemployment rate amongst industrialised countries.

“Finding the right balance makes for a new kind of politics in Europe,” according to Lord Simon. “We are on the brink of something massively exciting. If we don’t pull it off, then the American model will take us. That is the way of the world.”

So, **government must act faster.** For example, the liberalisation of hi-tech European markets such as telecommunications and financial services is happening, but far too slowly. Throughout the European Union, the need is to lower for new companies the barriers to entry and to make it easier for existing companies to leave. New markets should be allowed to grow free of legislation for legislation’s sake, untrammelled by controls and regulations which have their origin in markets that no longer exist.

One example of the problems created by over-regulation of new sectors is biotechnology, (Box 37).

37. Nestlé, biotech and the food sector

Nestlé and the other ERT food manufacturing companies have recognised the vast global potential of biotechnology. It could help to overcome world food shortages, produce plants that require less pesticide, and develop food with higher nutritional content.

But strategic technologies of this kind require a long-term approach. Nestlé first began research in 1982, and has built up its European R&D over time.

Nestlé would like to continue to develop biotechnology in Europe and use its strong brands to launch a range of products using this technology. However, regulations in Europe are increasingly unpredictable. Approval time is three times longer than in the US.

Biotech will become critical to the future competitiveness of the food industry. The question is whether Europe will participate. Employment in biotech-related sectors in Europe was estimated to be around 300,000 in 1995. This could rise to over 3 million by 2005 - provided business is allowed to make full use of the opportunities biotechnology offers.

Government needs to spend more time to understand and benchmark microeconomic and supply-side policies. Political and social stakeholders need to accept that job losses in traditional occupations is normal in a healthy economy. Hastily drafted protective measures put up to delay this process will only hurt more in the long run. Government and business have to understand each other. “We need consensus and conviction,” says Stefano Micossi of DG III. “We need to manage flexibility and adapt employment support systems to make it possible to accept, even support, change with available public instruments.”

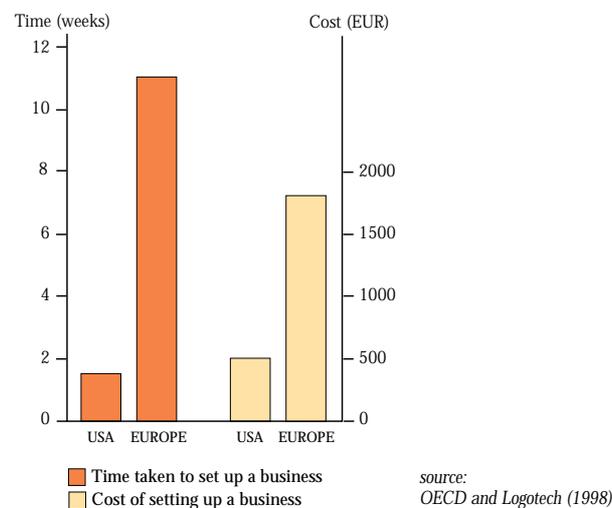
Probably the most difficult thing for government to understand is the **dual concept of risk and reward**. Better methods of evaluating the risk content of new ventures must be found and set against the likely rewards. As already noted, it is crucial not to penalise business failure for entrepreneurs: they must be encouraged to try and try again. In the US, for example, someone who has been bankrupt can still be given a chance to establish a new business with further backing from financial institutions, as he is less likely to fail the second time round.

Legislation ought to be appropriate, simple and easy to use. It should guarantee the same solutions to the same problems in all countries across the EU, not just in a few. National legislation should not be used to block innovations in work patterns and markets in order to protect existing jobs. If more legislation is market-led and implemented in a uniform way in each country within the same time frame, doors would be opened to new opportunities for growth and jobs.

The **administrative and financial burden of national and European regulations** on companies of all sizes, small, medium and large, is striking and must be alleviated. Furthermore, every study indicates that it represents a proportionally bigger problem for SMEs and gravely limits their possibilities of expansion. Setting up a company can be a lengthy and costly business (Box 38).

The European Commission’s commitment to simplify legislation is welcome only if it is pursued. The need to lighten the burden of European legislation, especially on small companies, was recognised by the Luxembourg Employment Summit of 1997.

38. Setting up a business: cost and time taken for establishment of a private limited company



One positive result was the BEST Report (Box 39) from the European Commission on improving and simplifying the business environment for start-ups, issued in June 1998. The ERT wants to ensure that this Report’s recommendations are duly implemented. The time for good intentions has run out.

39. Simplifying the business environment for start-ups (BEST)

There are 18.5 million small companies in the European Union, accounting for more than 60% of EU turnover and 66% of total EU employment. As some 1 million new small companies are created every year, there is a pressing need to reduce the administrative burden of current legislation for small companies.

The European Commission’s BEST Task Force published its recommendations in June 1998.

What is called for: better public administration; new approaches in education, training and the workplace; easier access to finance and help for innovation. The Report called on the European Institutions to provide detailed proposals for implementation, including timetables for action.

In the absence of supportive legislative frameworks that help rather than hinder new markets for innovative products, companies can often suffer heavily during the **cumbersome process of satisfying regulatory procedures** in different countries. The case of Luvox is just one example (Box 40).

40. The heavy cost of regulatory delay

Luvox, an important anti-depressant, is Solvay's leading pharmaceutical product. Annual sales in 1997 reached \$182 million.

Research on fluvoxamine started in the late 1960s in Solvay's R&D laboratories, in cooperation with Dutch academic centres. R&D investment totaled some 3000 man-years, which today in monetary terms is valued at \$600 million.

Solvay was the first to patent such a product in 1975. The first registration and launch took place in Switzerland in 1983. Registration in the other main European markets took time and was not completed until 1987, and not until 1995 in the US.

Meanwhile the American firm Eli Lilly, located in the world's biggest market, had also obtained a patent in 1975 for a similar product (Prozac), and went on to launch it with a significant time advantage in their home market. By 1997 Eli Lilly had achieved global sales of \$2.5 billion, fourteen times more than Solvay.

There is now a **crying need for greater flexibility in labour laws at national level in Europe**. This again is vital for companies of all sizes. Short-term, part-time, temporary and seasonal employment have to be properly accommodated.

Given the background of technological change plus globalisation, each with its inherent risks, the time is surely ripe to breathe some fresh air into labour legislation throughout Europe and to bring new ideas to the negotiating table. So much has changed in the past few years in the world of work, and in society itself, that it is impossible to carry on denying the regulatory needs of today's very different workforce.

The ERT cannot be prescriptive, but it should be possible to **reward good performance without starting a generalised upward wages spiral**. Ways must be found to increase the rewards and incentives in the variable part of salaries. Just as systems such as stock options are available to company employees, an incentive bonus system should be available to those who work in public services, service units and the liberal professions.

GOVERNMENT AND LEGISLATION

6

PRIORITY ACTIONS

Modernise government and legislation through finding the right balance between freedom and rules for running local and global businesses, using a lighter approach to legislation as a positive tool:

- △ Implement Single Market rules fully at national level.
- △ Reform restrictive labour market rules to favour new jobs and types of employment.



Course of action

“We need to see better, we need to mobilise faster, we need to give the doer space.”

Peter Lorange, President of IMD

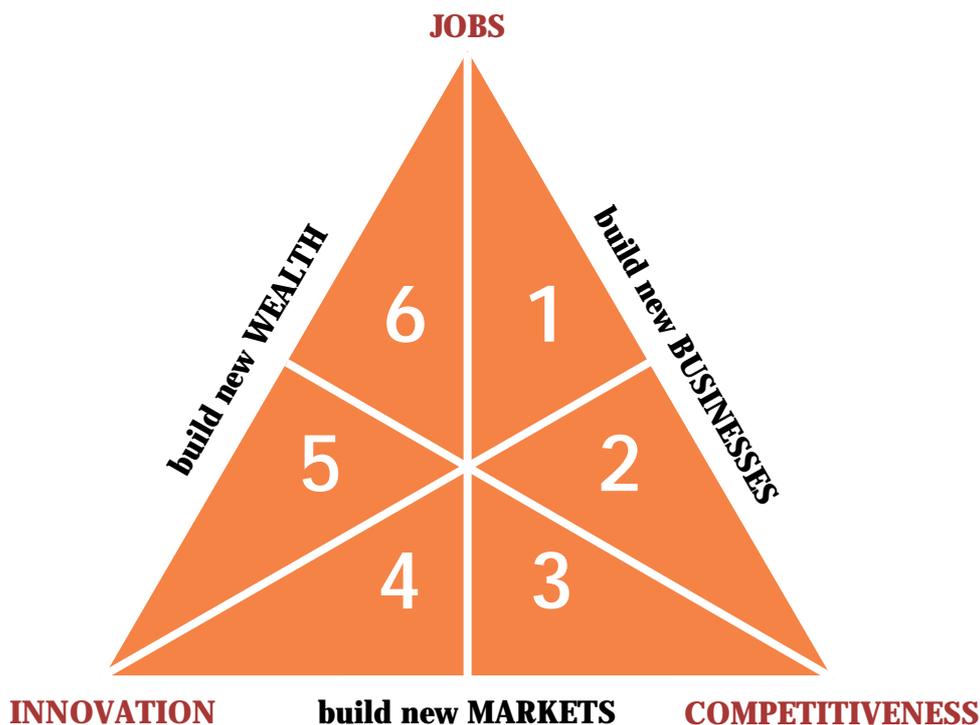
This Report shows that innovation is the core issue in competitiveness, and that competitiveness is the key to the creation of lasting jobs. It also shows that innovation is not only about new technology, science and research; it is also about attitudes of mind which should permeate government, businesses, academia, indeed the whole of society. It is therefore neither useful nor helpful to address innovation as a strictly economic issue.

New jobs are created through innovation and competitiveness, either directly in new businesses, or indirectly through the removal of obstacles, the freeing of markets, and the creation of more favourable conditions for employment in existing businesses. The most crucial jobs are those for the future, and people must be ready and willing to take them. A new spirit of enterprise is needed. We can prepare for this by applying innovation now, in human resource management, in R&D strategies, in educational institutions, and in government.

As Daniel Janssen indicated in the Foreword, the priority actions identified here are not comprehensive but, if implemented right across society - by government, public services, businesses and the individual - they would go a long way towards reducing unemployment in Europe.

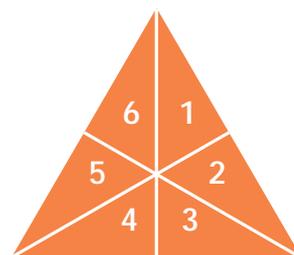
The quotation above points the way forward. **We need to see better:** can we see as early as possible the less obvious opportunities for creating new enterprises? **We need to mobilise faster:** can we mobilise our resources efficiently and competently, with Member States and companies working in harmony, and the lines of responsibility made clear? **We need to give the doer space:** in a highly regulated Europe, can we help those who have imagination and show initiative - whether working for companies, in public service, or as individuals - to take risks?

Our overall message is positive, despite all the obstacles that have been identified. In general, a more active interchange between government, society, stakeholders, the company and the individual is essential. As the obstacles are removed, the way to future opportunity and future jobs is opened up.



ERT's PRIORITY ACTIONS

for Job Creation and Competitiveness through Innovation



- 1 CHANGE ATTITUDES** by promoting a European Society open to innovations in science, technology, business, living and working conditions:
 - △ Promote the spirit of enterprise throughout society, in industry, government, finance and education.
 - △ Ensure that sound and well-researched information on scientific breakthroughs, new products and services always gets through to the public.

- 2 CREATING NEW BUSINESSES** means fostering entrepreneurship by removing obstacles to initiative and by rewarding risk-taking and success:
 - △ Establish supportive fiscal conditions for inventors, entrepreneurs and investors.
 - △ Drastically reduce the demands of bureaucracy and ensure that legislation does not penalise failure.

- 3 Get more from Europe's RESEARCH AND DEVELOPMENT** through introducing the Single Market concept to our research and academic communities:
 - △ Reform the patent systems in Europe, permitting single filing of a unitary patent for all Europe with no translation obligations.
 - △ Promote biotechnology as one of the key technologies of the new Millennium and provide a more supportive external and regulatory environment.

- 4 Improve Europe's KNOWLEDGE AND SKILLS** through re-igniting enthusiasm for innovation and entrepreneurship in the educational environment:
 - △ Build basic business education into school curricula and provide state of the art education in science and technology.
 - △ Promote an Innovation Year to bring the importance of innovation and entrepreneurship into the heart of schools and training colleges.

- 5 Free up more FINANCE AND RISK CAPITAL** to fund businesses by injecting entrepreneurial attitudes into the world of finance and banking:
 - △ Remove restrictions on pension fund investment that hold back risk capital.
 - △ Expand access to risk capital markets and encourage the development of pan-European stock markets that target small high-growth companies.

- 6 Modernise GOVERNMENT AND LEGISLATION** through finding the right balance between freedom and rules for running local and global businesses, using a lighter approach to legislation as a positive tool:
 - △ Implement Single Market rules fully at national level.
 - △ Reform restrictive labour market rules to favour new jobs and types of employment.

Colloquium participants

Mr Alexandros Akritopoulos
DG III, European Commission

Mr Dan André
Conseiller Recherche Scientifique
Permanent Representation of Sweden to the EU

Mr Anthony Arke
Secretary General, EuropaBio

Ms Serap Atan
Adviser
Turkish Industrialists' & Businessmen's Assoc.

Mr Wolfram Bade
Head EU Liaison Office
BASF EU Liaison Office

Dr Marc Battaille
President, I.P.A.C.

Mr Peter Baur
DG III, European Commission

Ms Geneviève De Bauw
Director, EU Government Affairs
Dow Europe s.a.

Mrs Gamze Berkay
Gimintas Liaison Officer
Turkish Industrialists' & Businessmen's Assoc.

Mr Robin Berkeley
Director, European Government Affairs
BP Europe

Mr Michel Bilquin
Head of International Communication
Solvay

Ms Mona Björklund
EU Affairs Consultant
European Energy & Telecom Consulting

Mr Jehan-Eric Blumereau
Directeur des Relations Inter-Entreprises
Total

Mr Willy Boes
Chief Executive Officer, Ducroire

Prof. Antonio Borges
Dean, INSEAD

Mr Hans Borstlap
Chairman Employment & Labour Market
Committee E.C.
Ministerie Sociale Zaken & Werkgelegenheid (NL)

Mr Alexandre Brégadze
Conseiller
Ambassade de Russie en Belgique

Mr Walter Brinkmann
Senior Vice President European Affairs
Coca-Cola Greater Europe

Mr Hans Broeckhoff
Deputy Head of Safety & Env'l Assurance Centre
Unilever

Mr Elmar Brok
Member of the European Parliament

Mr Marc Brykman
Head of European Union Liaison
Shell International Ltd

Mr Folkert Buis
Policy Advisor
Ministry of Education, Culture & Science (NL)

Mr Alessandro Cagli
Industry Attaché, Perm. Rep. of Italy to the EU

Mr Jan F Candries
Advisor, AECA Europe

Mr Stefano Catelani
Director Governmental Affairs Europe
Du Pont de Nemours International S.A.

Mr Michel Catinat
Adviser to the Director General
European Commission - DG III

Mr Thierry Chamolle
Deputy Director General-Environment
Suez Lyonnaise des Eaux

Dr Jean-Marie Chandelle
Managing Director, CEMBUREAU

Dr William Coderre
Counsellor Science & Technology
The Canadian Mission to the European Union

Mr Jan Coene
President, ABB Service Worldwide

Mrs Edith Cresson
Member of the Commission
European Commission

Mr Stanley Crossick
Chairman, European Policy Centre

Mr Philippe Nestor Louis D'Heygere
President, Stow International Group of Companies

Mr Joël De Decker
Public Affairs Manager, IBM

Mrs Mia Declercq
Advokaat, Baker & McKenzie

Mr Jean-Claude Deltheil
EU Corporate Affairs Manager, Michelin

Mrs Bice Dotti
Manager Economic Department
Pirelli SpA

Mr Hugues Ducobu
Managing Director, Businesscom International S.A.

Mr Patrick Dunne
Director, 3i plc

Mr Jaime Echevarria
Director Corporativo, Iberdrola

Mr Harry van Egmond
Economic Adviser, Unilever

Mr James Elles
Member of the European Parliament

Mr Rob F van Esch
Director European Affairs, Unilever

Ms Yvonne Gärtner
European Affairs Associate, Microsoft

Ing. Pier Giorgio Gili
Member of the Board, Fiat Research Centre

Dr Giulio Grata
Director, European Commission

Mrs Sophie Guillot
EU Corporate Affairs Deputy Manager, Michelin

Mrs Vivien Haig
Director, Transatlantic Policy Network

Sir Ronald Hampel
Chairman, ICI

Mr Alain Heilbrunn
Director for European Affairs, Total

Ms Lone Henriksen
Detached National Expert, European Commission

Mr Hugo Van Heuverswyn
Innogenetics

Lord Simon of Highbury
Minister for Trade and Competitiveness in Europe
Department of Trade and Industry

Mr Alfred Hoffait
General Manager Research & Development
Solvay S.A.

Mr Dirk Hudig
Secretary General, UNICE

Mr Jan-Peter Huges
President, AKZO NOBEL International NV

Mr Torbjörn Ihre
President, Ericsson European Affairs Office

Mr Toshikazu Inui
Counsellor, Mission of Japan to the EU

Mrs Daniela Israelachwili
Director, Economic & Financial Affairs, UNICE

Prof. Alexis Jacquemin
Chief Adviser, Forward Studies Unit
European Commission

Mr Georges Jacobs
CEO, UCB

H.E. Mr Lee Jai-chun
Ambassador Extraordinary & Plenipotentiary
Mission of Korea to the European Union

Baron Daniel Janssen
Chairman of the Executive Committee, Solvay

Mr Staffan Jerneck
Deputy Director, Director of Corporate Relations
CEPS

Prof. Dr Henri Jolles
Directeur France, Ecole Européenne des Affaires

Ms Mine Kasman
Sabanci Holding Liaison Officer
Turkish Industrialists' & Businessmen's Assoc.

Mr Roland de Kergorlay
Deputy Chairman
Société Européenne des Satellites

Mr John Kirschen
Advisor to the Chairman, Fiat

Dr Ben Knapen
Director, Corporate Communications & Public
Affairs, Philips

Prof. Jonathan Knowles
Head of Pharma Research
F. Hoffmann-La Roche Ltd.

Mr Vinay Kohli
Deputy Chief of Mission
Embassy of India

Dr Herwig Kressler
Head Remuneration-Industrial Relations Advisor,
Unilever

Mr Tilmann Kupfer
Senior Adviser, European Regulation
BT Brussels Representative Office

Dr Juhani Kuusi
Senior Vice President, Nokia Corporation,
Research Center

Mr Bernard de Laguiche
Manager Corporate Planning,
Solvay SA

Mr Paul Van Leeuwe
Social Attaché
Permanent Representation of the Netherlands

Mr Eckart Lehfeldt
Leiter Verbindungsbüro Bonn Forschung und
Technik, Daimler-Benz

Dr Peter Lorange
President and Maucher Nestlé Professor, IMD

Mr Rudi M. Mariën
Chairman, Innogenetics

Mrs Regina Matthijsen
Deputy Director, International Industrial Relations
Philips International B.V.

Prof. Dr. Frieder Meyer-Krahmer
Director, Fraunhofer-Institut für Systemtechnik
und Innovationsforschung

Mrs Liliane Meyers
Corporate Manager Industrial Property and Info.
& Doc., Solvay S.A.

Mr Stefano Micossi
Director-General - DG III, European Commission

Mr Luc Van Den Moortgate
Director, Fabrimetal

Mr Albrecht Mulfinger
DG XXIII/C/2, European Commission

Mr Hans-Werner Müller
Secretary General, UEAPME

Mr Béla Murányi
Counsellor S&T, Mission of Hungary to the EU

Mr Paul Muys
External Relations Officer, Solvay

Mr Georges Nève
Chargé de Mission
Société Générale de Belgique

Mr Jos Peeters
Managing Director
Capricorn Venture Partners n.v.

Mr Wim Philippa
Secretary General, ERT

Mr Toine Philippa
General Manager, InTerPAC BV

Mr Matti Pietarinen
Councillor, Permanent Representation of Finland

Mr Norman Pyres
Principal Administrator, DG XXII
European Commission

Dr Lars Ramqvist
Chairman, Ericsson

Mr Keith Richardson
Special Adviser, European Policy Centre

Mr Miel Ruempol
EU Focal Point, Shell International

Mr James Ruscoe
Advisor, MS AG

Mr Marc De Schinckel
Vice-President Public and EU Affairs,
Norsk Hydro

Dr Hendrik Schlesing
Director European Operations
The Weinberg Group

Mr Guy Sebban
European Affairs Director
Rhône-Poulenc

Mr William Seddon-Brown
Director, P.O.D.S.

Mr Paul Skehan
Deputy Secretary General, Eurochambres

Ms Patience Nontatu Zanele Skolo
Second Secretary
South African Mission to the European Union

Mr Armin Sorg
Senior Director, Siemens

Mrs Marianne Spangenberg-Carlier
Manager Small Business Unit & SPMO
Shell Nederland BV

Mr Lars Stålberg
Senior Vice President, Ericsson Group

Mr Piet Steel
Public Affairs Manager, Solvay

Dr Teun Swanenburg
Senior Director for Research Coordination
Philips Corporate Research

Mr Frank Sweerts
Senior Director European Affairs
Philips Electronics NV

Ms Maria Szalankiewicz
First Secretary
Mission of Poland to the EU

Mr Hendrik Tent
Deputy Director-General - DG XII
European Commission

Mr Mathias Ternell
Industry Attaché
Permanent Representation of Sweden to the EU

Mr Eric Vaes
Managing Director
European Energy & Telecom Consulting

Mr Georges de Veirman
President & CEO
American European Community Association

Mr Baudouin Velge
Directeur, VBO-FEB

Mr Pierre Vigier
Membre du Cabinet de Mme Cressson
European Commission

Ms Caroline Walcot
Deputy Secretary General, ERT

Mr Jan Walldorf
Senior Vice President - Group EU Director
Volvo Group

Ms Carolyn Walsh
Minister-Counsellor
Australian High Commission

Dr Tobias Weiler
Brussels Office
Federation of German Industries (BDI)

Mr David Wright
Adviser, Cabinet of President Santer
European Commission

Mr Dov Zerah
Chef de Cabinet of Mrs Cressson
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(October 1998)

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This report was approved by the ERT Members at their Plenary Session of 16 November 1998. Most of these opinions are widely shared within the business community, but individual ERT Members may differ on specific issues.

The publication is available in English, French and German and is distributed free of charge. The English text may also be downloaded from the ERT website <http://www.ert.be>.

For information and further copies, please contact:

The European Round Table of Industrialists (ERT)
avenue Henri Jaspar 113
1060 Brussels
Belgium
Tel: +32 2 534 31 00
Fax: +32 2 534 73 48
e-mail: contact@ert.be

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