



THE NEW ECONOMY:
BEYOND THE HYPE
FINAL REPORT ON THE
OECD GROWTH PROJECT

MEETING OF THE OECD COUNCIL
AT MINISTERIAL LEVEL,
2001



ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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THE NEW ECONOMY: BEYOND THE HYPE

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Executive Summary

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ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

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- to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development; and
- to contribute to the expansion of world trade on a multilateral, non-discriminatory basis in accordance with international obligations.

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Preface

At its meeting of May 1999, the Ministerial Council asked the OECD to analyse the causes underlying differences in growth performance in OECD countries and identify factors, institutions and policies that could enhance long-term growth prospects. In response to this request, the OECD launched a two-year study involving three Directorates and a number of Committees. A first report entitled *Is There a New Economy?* was presented to the Ministerial Council in June 2000.

This executive summary of the Final Report, entitled *The New Economy: Beyond the Hype* draws the main policy conclusions from the two-year project. It complements the OECD report on Sustainable Development, which provides policy directions on how economic growth can be balanced with environmental goals. Well-designed and coherent policies in both areas would allow for economic development, environmental protection and social progress to be mutually supportive. Together, the two reports present a concrete policy agenda for the years to come.

Introduction

This report explores the structural shifts that have affected growth...

The New Economy: Beyond the Hype explores the causes of differences in growth performance in the OECD area, in particular the acceleration of trend growth in the United States and a few other OECD economies over the past decade. It looks beyond the business cycle and asks what structural shifts, if any, have taken place in growth patterns in OECD economies in recent years. It also examines the implications of those shifts for policymakers.

... and the reasons why some OECD economies have grown more rapidly than others

The question leads to an investigation of the underlying sources of growth. Can the sharp rise in Ireland's GDP per head over the past decade, for example, be explained simply by catch-up? If so, how did the United States, a country already in the lead in terms of GDP per capita, forge further ahead of some major EU economies in the 1990s, as well as outperform its own historical standards?

New technology is one factor, but its role should not be exaggerated

Information and communications technology (ICT) is a key factor behind these developments. Yet, growth languished in Japan, despite its large computer hardware industry, and soared in Australia, which has virtually no such sector at all. As with any new technology, the boom in ICT over the past decade was accompanied by some hype. The current slowdown in the United States has instilled realism to the debate, and put an end to some exuberant economic behaviour. But it would be wrong to conclude that there was nothing particularly exceptional about the recent US experience or that of other countries whose potential growth has been lifted. Indeed, the evidence suggests that something new is taking place in the structure of OECD economies.

The report identifies the policies that can strengthen growth...

This report first examines the facts about growth in GDP per capita in OECD countries over the past decade. Building on this, it identifies the key policies for the new economic environment. Getting the fundamentals right is clearly vital for growth to take place. Nonetheless, to enhance long-term growth, more emphasis should be given to policies focusing on ICT, human capital, innovation and firm creation.

... and calls for a comprehensive strategy based on sound fundamentals

The policies advocated in the report are mutually reinforcing. This is important since seizing new growth opportunities will be possible only through a comprehensive strategy based on a policy mix that is suited to each country or circumstance.

Growth in the OECD was uneven in the 1990s

Growth patterns in the OECD area

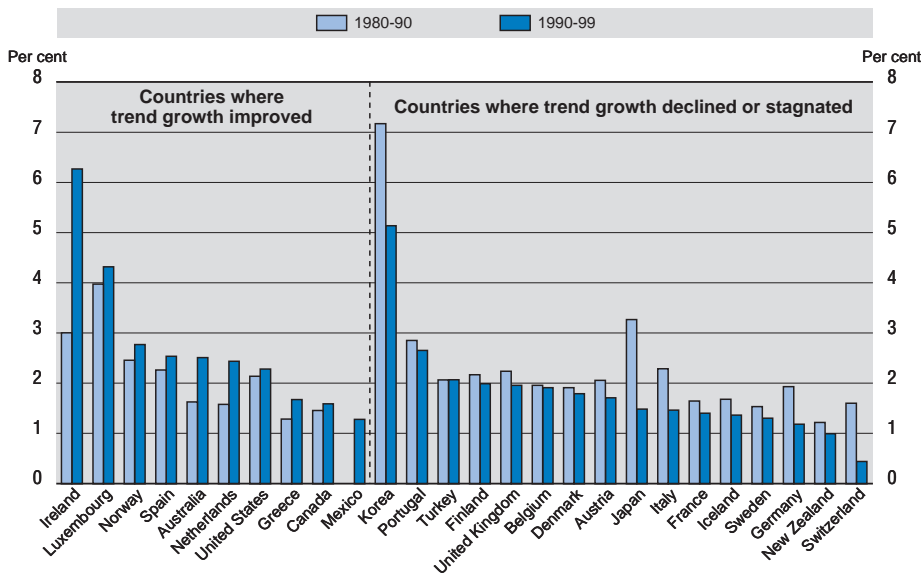
Three OECD countries – Australia, Ireland and the Netherlands – registered markedly stronger trend growth of GDP per capita over the past decade compared with the 1980s (Figure 1). Several other countries also experienced an improvement. These include the United States, where trend growth of GDP per capita accelerated strongly in the second half of the decade. In contrast, the growth in GDP per capita in many other OECD countries, including Japan and much of Europe, slowed. In several countries, *e.g.* Finland, Canada, Greece, Iceland and Sweden, trend growth picked up only in the second half of the 1990s.

Divergence in growth is due to several factors: ICT, use and quality of labour, multi-factor productivity

These divergences are real; they cannot be explained by different measurement techniques. Several factors contributed to the growth patterns of the 1990s:

- **New capital, in particular ICT.** ICT hardware and software were the most dynamic areas of investment in the 1990s, thanks to rapidly falling prices and the growing scope for application of ICT. The contribution of ICT investment to growth over 1995-99 was much larger in the United States than in most other countries.
- **Increased use of labour.** In most countries with higher growth rates of GDP per capita, employment and labour productivity grew together.

Figure 1. **Uneven trend growth of GDP per capita**
Total economy, percentage change at annual rate

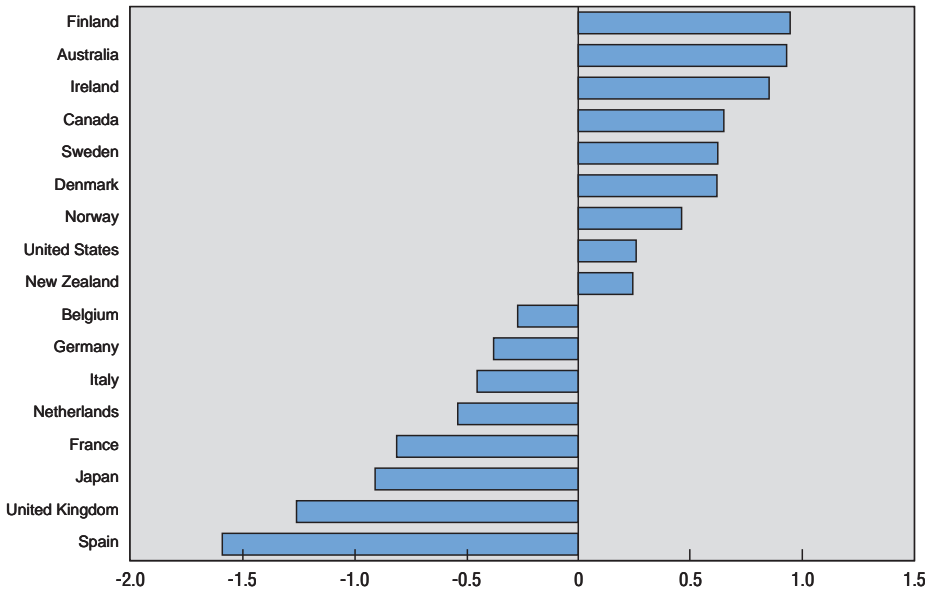


Trend growth in the 1990s was higher than in the 1980s in Australia, Canada, Greece, Ireland, Luxembourg, Mexico, the Netherlands, Norway, Spain and the United States. But trend growth declined markedly in Italy, Switzerland, Japan and Korea. In some countries, including the United States, trend growth accelerated throughout the 1990s.

- **Rising quality of labour.** The educational attainment of workers and the level of skills have risen across the OECD and have contributed to growth in several OECD countries, like in Italy and Spain. High quality labour is particularly important for countries to benefit from new technologies.
- **Greater efficiency in how capital and labour are combined, or multi-factor productivity (MFP).** MFP growth increased in several OECD countries in the 1990s (Figure 2). In some countries, such as the United States and Finland, MFP growth partly reflects rapid innovation in the production of ICT. In new industries, MFP growth is partly due to start-ups that use a more efficient mix of labour and capital than existing firms.

The growth of MFP also seems linked to the efficiency-enhancing benefits from the use of ICT, when combined with organisational change and better skills.

Figure 2. Trend multi-factor productivity (MFP) growth increased in many countries
Average annual percentage change from 1980-90 to 1990-99



MFP growth increased markedly between the 1980s and 1990s in Finland, Australia and Ireland. It decreased sharply in Japan, the United Kingdom and Spain. MFP is that part of GDP growth that is left after the contributions of increased labour and capital have been accounted for. In the Netherlands and Spain, MFP growth declined, but growth of GDP per capita improved due to increased use of labour and capital.

Policies should adjust to new factors while strengthening fundamentals

Policies that engage ICT, human capital, innovation and entrepreneurship in the growth process, alongside policies to mobilise labour and increase investment, are likely to bear the most fruit over the longer term. But to have any chance of succeeding in these areas, governments must ensure that the fundamentals – macroeconomic stability, openness and competition, as well as economic and social institutions – are working. These are outlined below.

Seizing the benefits of ICT

ICT is transforming economic activity

While ICT has already made a significant contribution to growth over recent years, it is too early to say how important the transformations it generates will be compared with those spurred by previous innovations, such as electricity. What is important is that governments ensure that they have the policies in place to seize the benefits ICT can offer, as well as limit any negative effects.

Having an ICT-producing sector is not a prerequisite for improved growth

ICT is important for growth, but having an ICT-producing sector is not a prerequisite. Some OECD countries owe part of their expansion to ICT hardware production, but others with a strong ICT sector recorded sluggish overall growth. Indeed, several countries with high productivity growth do not have large ICT sectors. Moreover, only few countries will have the necessary comparative advantages to succeed in ICT output. The key to benefiting from ICT is to focus on policies to foster its use, rather than its production.

More competition can boost the diffusion of ICT...

Insufficient competition is one reason why some OECD countries have been slow to embrace ICT. Competition brings pressures to increase efficiency and explore new ways of doing business, including the adoption of new technologies. The United States has benefited most from ICT, as it already had strong competition in the 1980s. Regulatory reform and the further reduction of trade and investment barriers are important to lower the costs of ICT and enhance its take-up.

... with further liberalisation needed in the telecommunications industry...

Countries that moved early to liberalise telecommunications have much lower communications costs and a wider diffusion of ICT than countries that were late to take action. Telecommunications monopolies have almost disappeared in the OECD area, but incumbent firms are still dominant in many countries, which contributes to keeping costs high. Further action is needed before effective competition takes hold.

... particularly in local markets...

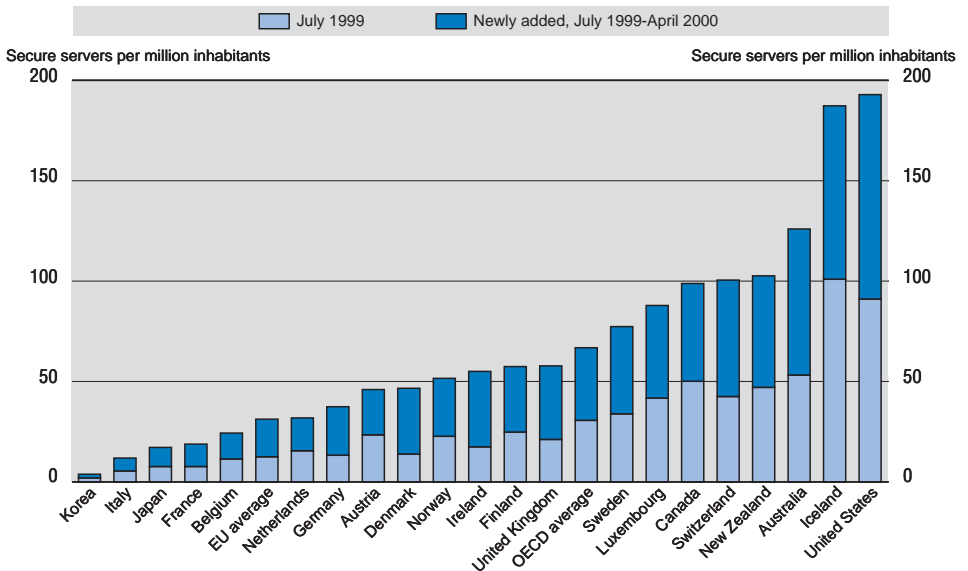
In 1999, new entrants had only a small share of local telecommunications markets in virtually all OECD countries. Unbundling, *i.e.* separating the local network from the

services that are provided over it, is a condition for stimulating competition in local markets. Most OECD countries are now implementing unbundling, but further regulatory reform is needed to promote effective competition and create the conditions for future investment.

... to facilitate the development of electronic commerce

Competition should lead to a wider introduction of unmetered Internet access, whereby users pay a flat fee for unlimited use. Australia, Canada, Mexico, New Zealand and the United States have had such systems in place for some time. This way, users become accustomed to the Internet, which helps the development of electronic commerce. Countries with unmetered access typically have more (and faster growth in) secure servers (Figure 3).

Figure 3. Electronic commerce has developed rapidly in some countries



Countries that had the highest rate of diffusion of secure servers – servers encrypted for the security of transactions online – in July 1999 have also had the highest increase in new secure servers since then. Countries with unmetered access (Australia, Canada, New Zealand and the United States) are among those with the highest penetration of secure servers, implying a greater diffusion of electronic commerce.

ICT applications must become secure and reliable to use

If e-commerce is to expand as a profitable way of doing business, an appropriate regulatory and legal environment is needed, particularly in the areas of privacy, security and consumer protection. Governments should work with business and other relevant parties to establish flexible frameworks in these areas.

Electronic government is a priority

Governments should also use ICT applications themselves to improve public sector efficiency. In the area of tax collection, for example, many governments are taking action. This would have the additional benefit of changing attitudes towards ICT use in society more broadly.

Harnessing the potential of innovation and technology diffusion

Governments should help to build a more innovative economy

In the long term, growth depends on building and maintaining an environment that is conducive to innovation and the application of new technologies. This involves ensuring the generation of new knowledge, making public investment in innovation more effective, improving interaction between universities, research institutes and firms, and establishing the right incentives for innovation.

Sufficient funding for basic research is needed...

Private investment in basic research has increased in some areas, but the bulk of such research must still be funded by governments. Without public funding, future innovation will be jeopardised. Funding for such research should be allocated by competitive procedures, with scientific excellence and merit as the main conditions.

... as is more effective public support

Government support for innovation should focus on areas with high social and economic benefits that push out the technological frontier. Partnerships between the public and private sector, competitive funding mechanisms, and regular evaluation of support are some ways to make such funding more effective and help focus it on the right areas. Governments should be vigilant against serving vested interest, however, and should not crowd out new sources of private finance, such as venture capital.

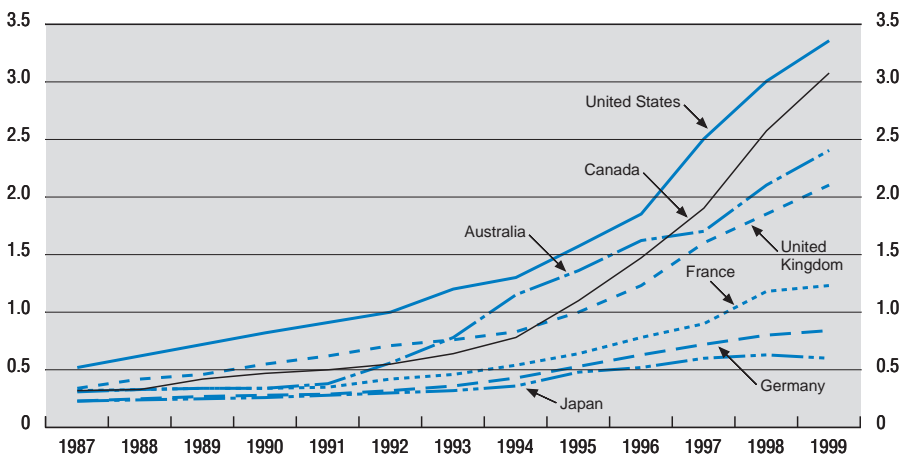
Links between science and industry have to be improved...

... though policy makers should also be aware of the risks of too much commercialisation

Innovation increasingly draws on scientific research, in particular in new industries such as biotechnology. But the growth in science-innovation links has not been equally rapid in all OECD countries (Figure 4). In many countries, barriers impede the flow of knowledge between science and industry. Low mobility of researchers between these sectors is one key problem. Faculty promotion practices are also problematic, as they tend to emphasise seniority and publishing prowess, rather than innovation.

Differences in intellectual property rights (IPR) for public research may also play a role. A good practice is to grant IPR ownership to the performing research organisation but to ensure that individual researchers enjoy a fair share of resulting royalties. Policy makers should also be aware of the risks; too much commercialisation may reduce the quality of scientific research and education.

Figure 4. Science-innovation links have developed rapidly in some OECD countries
Average number of scientific papers cited in patents taken in the United States, by country of origin



Patents increasingly cite the findings of scientific research as an important ingredient for new innovations. In the United States, Canada and Australia, innovation draws more strongly on scientific research than in France, Germany and Japan. Differences in patent specialisation do not explain the differences, nor does language; innovation in non-English speaking countries such as Finland, the Netherlands and Sweden also draws increasingly on scientific research carried out inside the country.

IPR regimes should strike a balance between the promotion of innovation and the diffusion of knowledge

IPR regimes also play a broader role in setting incentives for innovation. Universities increasingly seek their own IPR and private firms are extending their IPR into long-term technological research. But IPR regimes should not be extended too far. They must continue to provide incentives for innovation, but allow for the diffusion of fundamental knowledge too. There is no simple solution to this contradiction. Striking a balance will require international co-operation, since IPR regimes continue to differ across OECD countries, causing uncertainty and affecting innovation.

Co-operation must go hand-in-hand with competition...

Co-operation between firms is increasingly important for innovation. It helps to share risks and facilitates the diffusion of knowledge, but may run counter to objectives to strengthen competition. Policy makers may encourage co-operation when research is not yet commercially applicable, but should combine this with vigilant competition policy.

... and greater openness to sources of knowledge from abroad

The growing importance of international co-operation for innovation will require greater openness to sources of knowledge from abroad and a reconsideration of policies in some countries that aimed at nurturing national champions or self-sufficiency in science and technology.

Enhancing human capital and realising its potential

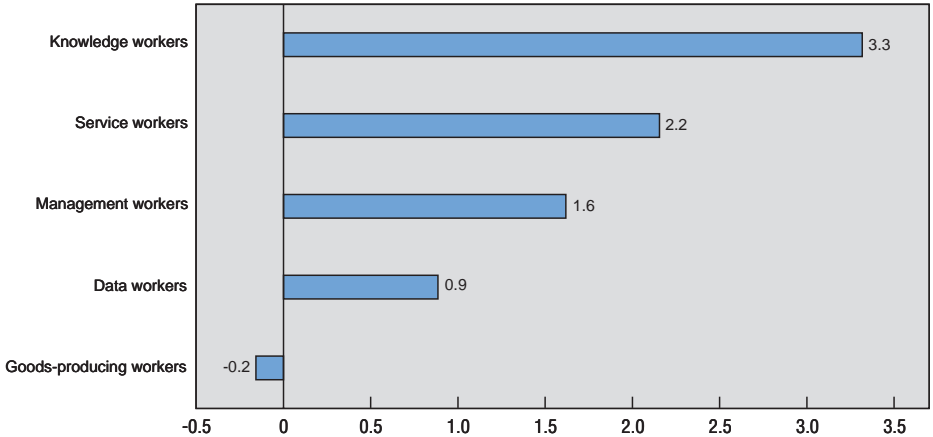
New technology has strengthened the role of human capital in growth

Investing in human capital is good for growth, especially in the context of rapid technological change: for ICT to be used effectively and the benefits of new technology to materialise, the right skills and competencies must be in place. The demand for “knowledge-intensive” employment has risen considerably (Figure 5), while skilled-labour shortages have emerged.

Improving human capital requires a sound foundation in basic education...

A comprehensive life-long learning strategy is needed, as reiterated by OECD Education Ministers at their April 2001 meeting. This requires, first, laying a solid foundation in basic education, including early childhood education and care. There must be a determined strategy to raise completion rates in upper secondary schools (in many countries, more than a fifth of every youth cohort are underqualified when they leave the formal education system). These

Figure 5. **The rising importance of knowledge-intensive employment**
 Employment growth by group of occupations,
 average annual percentage change, 1992-1999



There is a skill-bias in job creation in all OECD countries considered in the Figure (the US and EU countries). Knowledge-intensive employment (scientists, engineers, ICT specialists, etc.) has grown much faster than other types of employment.

policies are cost-effective solutions that reduce the need for more expensive intervention later on. Measures that target disadvantaged groups and narrow educational inequalities would also help. Moreover, countries need to address the growing shortage of qualified teachers, which in many cases will inevitably mean making pay more competitive.

**... a better
 school-to-work
 transition,...**

Greater attention should be paid to the school-to-work transition. As the experience of Austria, Denmark, Germany and Switzerland shows, “dual” apprenticeship systems can be successful in integrating young cohorts into employment. But other systems can also be effective: for example, Australia and Sweden have strengthened the workplace component of schooling. To make the programmes work, it is essential to spread responsibilities between schools, trainees and employers. In particular, systems of co-financing need to be put in place through public subsidies, with trainees being paid below adult wages and employers being subjected to quality control.

... with closer links between higher education and the labour market...

Higher education links with the labour market must be strengthened. This can be achieved through a wider provision of short-cycle courses with a stronger occupational orientation. Making higher education institutions more accessible to adult workers who need to update their skills would also help, as the experience of Australia shows. And stronger financial incentives based on the performance of education institutions would improve cost-efficiency.

... and effective training systems, like individual learning accounts

Providing wider training opportunities is good for productivity and workers' employability. But firms and individuals can under-invest in training. To improve the situation, programmes should be better targeted, competencies acquired through formal or informal training be better recognised, and investments by firms in the human capital of their workers should not be penalised by tax systems. Individual learning accounts, which workers manage and spend on their own training, are the type of innovation that could provide effective lifelong educational opportunities.

Work practices need to change

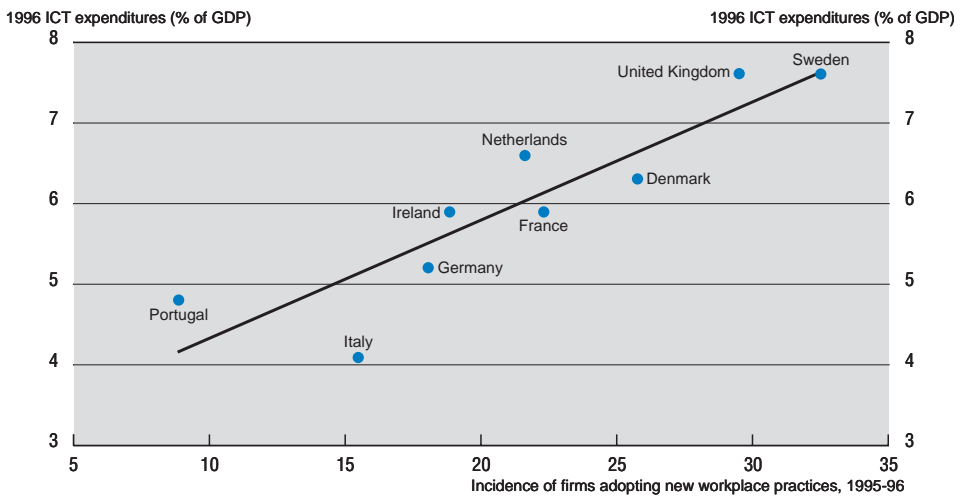
Improving skills is not enough – human capital needs to be used efficiently and its interactions with new technology be enhanced (Figure 6). This means a reorganisation of work, since firms that introduce new work practices such as employee involvement, flatter management structures and teamwork tend to enjoy higher productivity gains than other firms. It is essential here to give workers greater voice in the process of change and institutions of labour-management cooperation should be strengthened in certain countries. This calls for modernisation of traditional systems of collective bargaining and wage formation. In addition, regulations should provide for more flexibility in working hours, allowing new forms of work to flourish.

Narrowing the digital and knowledge divides would strengthen growth potential

Unequal access to new technology and to learning how to use it is a matter of policy concern for obvious equity reasons. Moreover, reducing the digital divide would enhance growth: one of the main advantages of ICT lies in its potential benefits of the network it creates. The more people that use the system, the greater its value becomes.

Market reforms to reduce the costs of new technology will facilitate access by disadvantaged groups as well as by people living in remote areas. This would help narrow the divide. But having computers is not enough. It is essential to integrate new technology into schools and increase the supply of qualified teachers.

Figure 6. **New work practices and ICT investment**

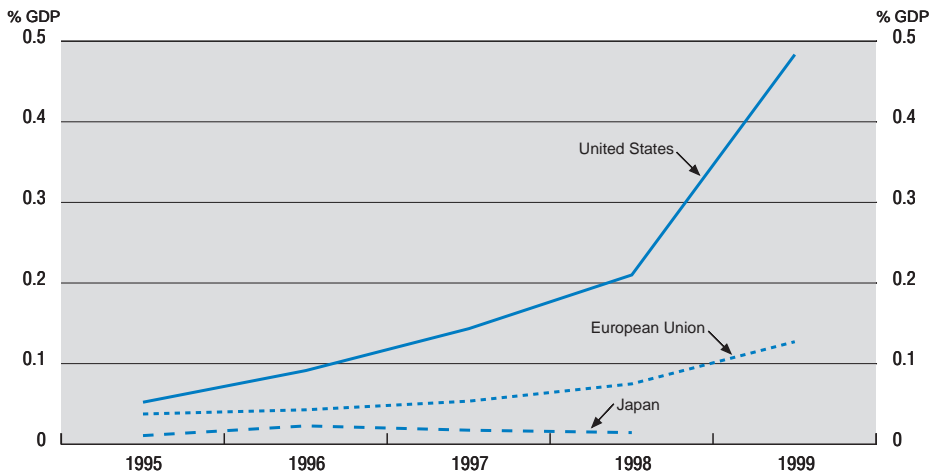


ICT penetration and work reorganisation go hand-in-hand. In the Figure, work reorganisation is measured as the incidence of new work practices (teamwork, job rotation schemes, employee involvement, flatter management, etc.). Sweden and the United Kingdom, which have high ICT penetration, also have a high incidence of new work practices.

Fostering firm creation and entrepreneurship

The role of start-ups in boosting productivity growth has increased

Newly created firms in the ICT and other new technology sectors have been highly innovative and their contribution to productivity growth has increased in recent years. The level of start-up activity differs widely across countries, and is much higher in the United States, than in Japan or Europe. Fostering a climate to instil greater dynamism in the creation and expansion of firms is therefore essential.

Figure 7. **Venture capital invested in start-ups as a per cent of GDP, 1995-99**

Venture capital invested in early and expansion stages of firms is higher as a per cent of GDP and is growing much more rapidly in the United States than in the other two major OECD regions.

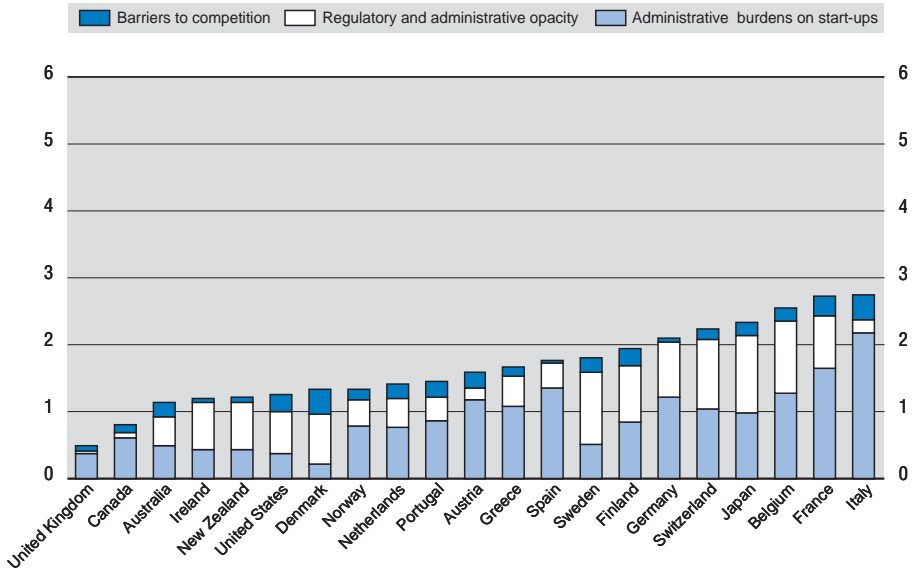
Removing constraints on venture and high-risk capital is a priority

One impediment to entry for new innovative firms is the lack of financing. Innovative start-ups are less likely to flourish in countries without a broad venture capital culture. And not all OECD countries have developed venture capital activity to the same extent (Figure 7). In fact, most of them have yet to remove the rules that prevent or discourage certain types of investors, such as pension funds and insurance companies, from engaging in venture capital investment. In addition, regulations that hinder the development of equity markets, including new markets that allow entrepreneurs and investors in early-stage risky projects to be compensated for their efforts, should also be eliminated.

Burdensome administrative barriers should be eliminated and bankruptcy provisions reviewed

Excessive, unnecessarily complicated or drawn-out regulations for registering new businesses discourage the entry of new firms in a number of countries (Figure 8). Moreover, firms in their start-up and gestation phases may also be disproportionately burdened by tax and other administrative compliance procedures. Some reforms to reduce these barriers have recently been introduced, or are in the pipeline, but much remains to be done. Would-be entrepreneurs

Figure 8. **Barriers to entrepreneurship vary across OECD countries**
Based on 1998 data



In most OECD countries for which data are available, administrative barriers are the biggest single barrier to setting up new businesses. The scale of indicators is 0-6, from least to most restrictive. Since 1998, many countries have implemented reforms. Detail on progress accomplished in some of them (including an update of the indicators) can be found in the OECD Reviews of Regulatory Reform.

can be put off entering business by the costs and difficulties – both administrative and cultural – they face in case of failure. Excessive bankruptcy and insolvency costs, in particular, are a problem in several countries, as they reduce the possibility of entrepreneurs’ getting a second chance. Reviewing legislation in these areas should be considered as a priority.

Provisions affecting entry and exit of start-ups should also be examined

Countries should also ensure that their tax systems are neutral vis-à-vis new forms of compensation, such as employee stock option plans, that are popular among start-ups. And government programmes which have at times led to the subsidisation of non-viable firms should be assessed with a view to streamlining or terminating those whose rationale and efficiency is questionable.

Education and training programmes should instil a positive attitude towards entrepreneurship

Education and training systems have a key role to play in creating positive attitudes towards entrepreneurship and in providing adequate managerial skills. Programmes bringing together training providers, universities, business schools, as well as firms and private investors, could be designed to identify best practices and propose changes to existing curricula.

Getting the fundamentals right

The new economy requires sound fundamentals

Policies on ICT, human capital, innovation and firm creation rely on fundamental economic and social stability to succeed. All of the above policy areas are interlinked and depend on each other for new growth opportunities to be realised. But those countries that have managed to lift their growth potential have been able to take advantage of the new economic environment because they had been getting their fundamentals right.

Stable macroeconomic policies are key...

Stable macroeconomic policies have a critical role to play in enabling economic changes that are conducive to higher growth of GDP per capita. Fiscal discipline and low inflation rates over the 1990s have helped to boost national savings, reducing uncertainty and enhancing the efficiency of the price mechanisms in allocating resources. Clearly, these sound policies have to be maintained. At the same time, public spending in high-return physical and human capital investments should not be neglected, and budgets may have to be readjusted accordingly. However, excessive tax pressure to support government spending should be avoided as it can undermine growth.

... as is openness to trade, investment and ideas

One of the main drivers behind promoting technological innovation and productivity gains has been the expansion of global markets. Continued progress in opening economies to international trade and capital flows is essential for growth, while keeping in mind the constant need to adapt the rules and practices to the changing global landscape. Openness is not just about markets of course; it is also about culture and a readiness for change. What matters in innovative and dynamic economies is that ideas and knowledge be transferred and shared among economic agents.

*Well-functioning
markets
and institutions
spur change...*

Well-functioning product, financial and labour markets and institutions are essential in periods of technological change and also contribute to macroeconomic stability. Yet:

- State controls over prices and market entry still interfere widely with competition in several countries, retarding productivity growth not least by slowing down the adoption of new technologies. Removing these obstacles remains a challenge.
- Financial markets and institutions in many countries have to adapt so that they are not solely geared towards the accumulation of physical assets in large, stable firms and well-established industries. Creating a mix of greater transparency on firms' information and performance and investors' protection would channel more financial capital towards riskier, more innovative, and more rewarding undertakings.
- Labour market institutions are key in ensuring that workers affected by structural change are given the support and the incentives they need to find new jobs and to retrain. This has been emphasised in the OECD Jobs Study and in many countries, much remains to be done to reform the institutions and regulations that hinder the geographical and professional mobility of workers.

*... and ensure
that the benefits
of growth are
shared by all*

The benefits of growth should be shared among the entire population. One of the best ways to achieve this is to boost participation in the labour market. More effective active labour market programmes, such as job-search and counselling schemes, would help. Likewise, making work pay policies, such as the working families tax credit in the United Kingdom, can encourage would-be workers to join the labour market and contribute to productivity and growth. In short, well-designed social protection would not only tackle inequalities but also contribute to growth.

Conclusions

ICT has led to a new economic and social environment...

Governments today are faced with a new economic environment. ICT has emerged as a key technology with the potential to transform economic and social activity and has led to more rapid growth in countries where the conditions for macroeconomic stability are in place. While it is too early to say how important ICT's transformations will be compared with those of previous innovations, like electricity, governments should nonetheless take action to manage adjustment and keep the social costs low. All governments can do more to exploit this new technology further, by accelerating its diffusion, providing the right skills and building confidence.

... but will not on its own steer countries on to a higher growth path

But ICT is not the only factor explaining growth disparities and policies to bolster these technologies will not on their own steer countries on to a higher growth path. Indeed, growth is not the result of a single policy or institutional arrangement, but a comprehensive and co-ordinated set of actions to create the right conditions for future change and innovation. This depends more than ever on improving the quality of human capital and responding to the changing demands of the workplace and society more broadly. It also means providing more scope for risk-takers to explore the new business opportunities that come with economic change. At the same time, the importance of fundamentals has not lessened. If anything, the pivotal role of sound macroeconomic management has been underlined. Moreover, the significance of openness to trade, investment and ideas, as well as well-functioning economic and social institutions has been reaffirmed.

Creating a more dynamic economy will take time...

The key policy recommendations from this report are summarised below. Policymakers have to be prepared to invest time and political capital in meeting these challenges. Many of the countries that achieved higher growth rates in the 1990s reaped the fruits of their earlier efforts, notably their macroeconomic and structural policy changes of the 1980s. In other words, while innovation may be rapid, it can take several years to create the kind of dynamic environment in which it might take place, let alone see the results.

... and raises new issues that should be further analysed

Policy action will also require further examination of a range of thorny, yet unanswered issues. There is a major knowledge gap regarding which impact, if any, the new economic environment will have on the shape and duration of the business cycle. A close watch of the current slowdown in the United States and the behaviour of productivity over the next year or two will be valuable for gathering evidence about this. Looking ahead, growth prospects will also depend on the extent to which other innovations, such as biotechnology, influence economic systems, while the role of human and social capital in growth will require further investigation. Other changes will also have a role to play, such as the ageing of OECD populations and international migration. A better understanding of society's ability to deal with changes such as these will therefore be essential.

Key policy recommendations

While specific policy priorities may differ across countries, *The New Economy: Beyond the Hype* encourages governments to adopt a comprehensive growth strategy based on a combination of actions in order to:

1. **Strengthen economic and social fundamentals**, by ensuring macroeconomic stability, encouraging openness, improving the functioning of markets and institutions, and addressing the distributive consequences of change.
2. **Facilitate the diffusion of ICT**, by increasing competition in telecommunications and technology, improving skills, building confidence and making electronic government a priority.
3. **Foster innovation**, by giving greater priority to fundamental research, improving the effectiveness of public R&D funding, and promoting the flow of knowledge between science and industry.
4. **Invest in human capital**, by strengthening education and training, making the teaching profession more attractive, improving the links between education and the labour market and adapting labour market institutions to the changing nature of work.
5. **Stimulate firm creation**, by improving access to high-risk finance, reducing burdensome administrative regulations and instilling positive attitudes towards entrepreneurship.

Detailed Policy Recommendations from *The New Economy: Beyond the Hype*

The following recommendations have to be seen together as part of a policy mix. None of the five broad areas can be taken in isolation, but as part of a mutually reinforcing package of measures for growth.

1. Assuring that the economic and social **fundamentals** are in place is an essential part of any comprehensive growth strategy:

- **Preserve macroeconomic stability:** Maintain or enhance fiscal discipline and keep inflation low to reduce uncertainty, increase economic efficiency and free up resources for high-return private investment.
- **Encourage openness:** Reduce barriers to competition and maintain an open policy stance for international trade and investment so as to reduce costs, improve international standards and promote e-commerce. Openness is fundamental to promote the diffusion of ideas and knowledge world-wide.
- **Make financial systems more supportive of innovation:** Implement reforms to create a mix of greater firm transparency and investor protection to foster innovative investment and enterprise.
- **Mobilise labour resources:** Reform institutions so that new job opportunities arise throughout the economy; encourage mobility and help workers affected by change.
- **Address the redistributive implications of structural change:** Make labour market programmes and social policies more effective in bringing would-be workers into the job market. Ensure that the benefits of growth are shared by all.

2. While it is important to resist hype when talking about new technologies, **ICT** is an enabling technology that is transforming economic activity. Governments should take it seriously as a harbinger of growth and economic change:

- **Focus policy efforts on increasing the use of new technology:** Having an ICT sector can support growth, but is no prerequisite. Developing an ICT manufacturing sector is costly and would not necessarily lead to faster economic growth. What counts more is how ICT is used to improve productivity and innovation.

- **Increase competition and continue with regulatory reform in the telecommunications industry to enhance the uptake of ICT:** Improving the conditions of access to local communication infrastructures is particularly important, and will require effective policies to unbundle the local loop and improve interconnection frameworks. Such policies will also help enhance access to high-speed communication services.
- **Ensure sufficient competition in hardware and software to lower costs:** Effective competition policy frameworks, lower barriers to international trade and investment, and national and international IPR regimes are important in this context.
- **Build confidence in the use of ICT for business and consumers:** Governments need to continue working with business and civil society, and provide guidance, to establish flexible regulatory frameworks for privacy, security and consumer protection, so that ICT applications, such as the Internet, become safe and reliable to use.
- **Make e-government a priority:** Tendering public services, collecting taxes or procuring goods online can increase government efficiency while building public confidence in ICT applications.

3. Overall, policymakers should look beyond the current wave of technological change and seek to foster the kind of **innovative environment** in which new growth can flourish:

- **Give greater priority to basic research; future innovation will be jeopardised without it:** Such funding should be competitive and emphasise scientific excellence and merit as key criteria.
- **Improve the effectiveness of government funding for innovation:** Government funding needs to focus on areas with high economic or social benefits, not vested interests. Public-private partnerships can help to share costs and may increase the leverage of government funding. Competitive procedures are important for such partnerships while the use of consortia may avoid that governments only support one firm as the “winner”.
- **Make greater use of competitive funding and evaluation in supporting public research:** Support for institutions remains important, but competitive funding instruments and strong evaluation are needed to improve the quality of research and focus on the areas of greatest value.
- **Tackle new challenges in intellectual property regimes:** Governments should ensure that IPR regimes governing publicly funded research strike a balance between the diffusion of knowledge across research institutions and its application by the private sector. Striking this balance will require international co-operation.

- **Remove barriers and regulations that limit effective interaction between universities, firms and public laboratories:** To augment the flow of knowledge and workers between science and industry, governments should review rules and regulations that limit the mobility of public sector researchers or restrict institutional links between public and private sector organisations. Ensure greater openness to foreign sources of knowledge.

4. If strategies to boost growth are to succeed, whether via ICT or any new technology, policies to enhance **human capital** (the skills and competencies embodied in labour) must be prioritised. Properly managed, many of these policies will also help to narrow the **digital and knowledge divides**:

- **Invest in high-quality early education and child care:** these investments are more cost-effective than later interventions to remedy school failure and they help boost participation in the labour market.
- **Raise completion of basic and vocational education and improve the quality of the system:** Dropout rates from secondary education have to be lowered. ICT literacy has become part of basic competencies and has to be improved, notably by recruiting qualified teachers and making pay more competitive.
- **Improve school-to-work transition:** Create or strengthen pathways that combine education with workplace experience; to ensure cost-effectiveness of the system, establish mechanisms of co-financing between employers, trainees and government.
- **Strengthen the links between higher education and the labour market in a cost-effective way:** This can be achieved through developing shorter course cycles with a healthy orientation to job market requirements. Involving firms in the definition of curricula and funding can be valuable, as can strengthening performance-based financial incentives.
- **Provide wider training opportunities:** Increase possibilities for adults and workers to participate in higher education. Innovative instruments, like individual learning accounts and systems of recognition of competencies, can enhance incentives to engage in training while helping to control costs. Ensure that firm training is not penalised by tax systems.
- **Reduce obstacles to workplace changes and give workers a greater voice:** Employee involvement and effective labour-management relationships and practices are key to foster change and raise productivity – governments must allow this to develop. Ensure that working time legislation and employment regulations do not hamper efficient organisational change; adapt collective bargaining institutions to the new economic environment.

5. **Entrepreneurship** has always been important, but its role stands out in the present time of innovative change. Fostering a climate to help instil greater dynamism in the creation and expansion of firms is fundamental.

- **Promote access to financing:** Reform those regulations and fiscal provisions that inhibit the development of venture and high-risk capital markets and limit the supply of capital for risky and innovative undertakings.
- **Facilitate firm entry and exit:** Eliminate burdensome administrative regulations and those features of tax systems that afflict particularly smaller, technologically driven, young firms; review overly stringent bankruptcy and insolvency provisions where they eliminate the possibility for entrepreneurs to have a second chance; ensure that tax systems are neutral towards the use of innovative employee ownership/remuneration schemes.
- **Review and assess the relevance and effectiveness of government support programmes:** Adapt policy orientations and programmes that risk becoming obsolete more quickly than before, hampering firm growth or slowing the exit of uncompetitive firms; identify and encourage best practices in government programmes, *e.g.* “one-stop shops” for administrative formalities.
- **Encourage an entrepreneurial spirit in society:** Instil a positive attitude towards entrepreneurship, through education and provision of managerial training.

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