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**COMMUNICATION FROM THE COMMISSION
TO THE COUNCIL, THE EUROPEAN PARLIAMENT,
THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE
AND THE COMMITTEE OF THE REGIONS**

**Connecting Europe at high speed: recent developments in the sector of electronic
communications**

Executive Summary

Information and Communication Technologies (ICTs) are one of the important dynamic forces for growth in modern economies. They contribute to transforming economic and social activities, lead to higher labour productivity growth, and foster economic and social cohesion. Four years after the Lisbon European Council, the creation of a favourable environment for the spread of ICTs remains an important responsibility for policy makers. This is why the 2004 Spring Report recalls the importance of information society policy to improve competitiveness. It also invites the Council and the European Parliament to take action in those sectors that are considered to be of strategic importance for European growth.

The electronic communication sector plays such a role because of its size, dynamism and impact on nearly all other economic activities. Recent evidence shows that it has been the largest contributor to European labour productivity growth.

The sector grew fast in the late nineties. In 2000, it faced a sharp downturn. After two years of consolidation, in 2004 conditions seem to be right for the sector to return to higher rates of growth. Improved financial conditions for the operators combined with continued growth in revenue from services create the conditions for the sector to recover. Sustainable growth for the sector can only be achieved through a revival in capital spending and further deployment of new innovative services. This calls for actions on facilitating deployment of the necessary infrastructure, broadband and Third Generation Mobile Communications (3G).

This Communication highlights the need for sustained political commitment to improve the effective use of ICTs in the Union and identifies actions to remove barriers to further investment. In particular:

- The new regulatory framework for electronic communications enhances competition and provides a predictable legal environment improving certainty for investors. In 2004, Member States who have not yet fulfilled their regulatory obligations should ensure complete and effective implementation. The Commission will work with the relevant National Regulatory Authorities to complete the work on remedies.
- The Commission in 2003 has set up a Mobile Communications & Technology Platform with the aim of identifying stakeholders' views on challenges to facilitate the roll-out of 3G networks. As the key challenges touch upon a wide variety of areas, the Commission will address them in a Communication to the Council and the European Parliament. To accelerate work on interoperability, the Commission will bring the relevant actors together through its R&D Framework programme. The *eEurope* 2005 Action Plan is the instrument designed to encourage the use of ICTs. The Council is invited to support the *eEurope* Mid-Term Review process.
- Within the *eEurope* framework, Member States who have not yet put in place a national broadband strategy are called upon to do so within the minimum delay. On the basis of their national strategy, they should encourage digital-divide quick-start projects. The Commission will report on national broadband strategies to the Council and the European Parliament. It will also work with industry to address the issues possibly hampering the development of new innovative services (DRM systems, interoperability, micro-payments, etc.). This work will aim at facilitating the development of services whilst taking into account other primary interests such as financial stability and consumers' confidence.

If the Union is to maximise the impact of ICTs as the engine for growth, productivity and jobs, it is essential to move forward on the different actions identified in this Communication. They represent individual links on a chain that can pull the Union closer to the Lisbon strategy's goals of sustainable growth and jobs. Success requires the strengthening of the political commitment to a knowledge-based economy that was so evident in March 2000 when the Lisbon strategy was launched. It is therefore important for the European Council to give a clear political signal by taking the necessary steps to foster the conditions in which Europe's information and communication technology industries can thrive.

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1. INTRODUCTION

Information and communication technologies (ICTs) are one of the important dynamic forces for growth in modern economies. To attain its current ambitious economic and social goals, the European Union will have to foster investment in ICTs and ensure its effective use in the wide economy.

This message was endorsed by the European Council in Lisbon in March 2000. The European Union consequently launched the *eEurope* Action plans to support the take up of ICTs, adopted a new regulatory framework for the electronic communication sector and a new Framework Programme to support research in the information society area.

The political commitment in Lisbon came at the time of the enthusiasm for the “new economy”. Despite the following downturn in the ICT sector, innovation has continued and ICTs have spread as general-purpose technologies. They contribute to transforming economic and social activities, lead to higher labour productivity growth, and foster economic and social cohesion. This is why, four years later, the creation of a favourable environment for the spread of ICTs remains an important responsibility for policy makers. Therefore, the 2004 Spring Report¹ recalls the importance of information society policy to improve competitiveness. It also calls for action to be taken in those sectors that are considered to be of strategic importance for European growth.

The electronic communication sector plays such a role because of its size, dynamism and impact on nearly all other economic activities. Developments in these areas have been kept under close review. In response to the difficulties that the electronic communication sector experienced in 2001-2002, the European Commission addressed a Communication² to the European Council of March 2003. The European Council endorsed the analysis of the Commission and invited it to report back on recent developments in time for the European Council of spring 2004. In December 2003, the European Council requested this report to address issues relating to the deployment of third generation mobile communications and high-speed (broadband) internet.

This Communication responds to these requests, identifies the actions to remove barriers to further investment, and highlights the need for sustained political commitment to improve the effective use of ICTs in the Union. Section two reviews the reasons why ICTs are so important for growth and competitiveness. Section three looks at recent developments in the electronic communication sector, in particular in terms of broadband and 3G mobile communications, while section four reports on challenges and policy responses.

2. GROWTH AND PRODUCTIVITY: THE ROLE OF ICTS

European economic performance continues to be disappointing. In 2003, real economic growth was only 0.8 per cent and, while a significant improvement is expected in the course of this year, in 2005 growth should reach 2.5 per cent. As indicated in the 2004 Spring Report, the potential rate of growth of the European economy is still around two per cent a year against the Lisbon target of at least three per cent.

¹ COM(2004) 29

² *Electronic communications: the road to the knowledge economy*, COM(2003) 65.

This performance contrasts with the dynamism of many other economies and, notably, with that of the United States, which is recovering from recession and returning to rates of growth similar to those of the second half of the 1990s. The growth gap between the EU and the US has become particularly evident since the mid-nineties. Various studies have tried to explain it, focusing in particular on the growth rate of labour productivity.

Productivity – the amount of output per hour of work – is a key determinant of potential growth. The United States has experienced an important acceleration in labour productivity since the mid-nineties, outpacing growth in European productivity gains. Differences in productivity growth between the two economies are believed to be closely linked to the production and diffusion of ICTs.

There is widespread agreement that *production* of ICTs contributes directly to overall productivity growth and has strongly contributed to the acceleration in performance in the United States. A similar effect is evident also in some European countries, although the size of the ICT-producing sector is smaller.

A consensus is also emerging on the proposition that the *diffusion* of ICTs is a prime contributor to productivity growth elsewhere in the economy. However, simply investing in computers and modern communications is not enough. Productivity gains are only achieved when firms reorganise their business processes and invest in training. This takes time and, as European companies invested less and later in ICTs than their American competitors, productivity gains are expected with a lag.

Recent empirical evidence³ confirms that most of the labour productivity growth in the United States can be traced to the industries that either produce ICTs or use ICTs more intensively. The economy of the United States outperformed that of the Union both in ICT-producing manufacturing industry (semi-conductors and electronic equipment) and in the main intensive ICT service industries, namely financial services and wholesale and retail trade. The European strength, however, is in electronic communications: the sector is and has been the largest contributor to productivity growth in the Union over the recent years.

The realisation of productivity gains through the development, adoption and effective use of new technologies ultimately depends on a growth-conducive economic environment. Stronger product market competition, a favourable regulatory environment and the lowering of entry and exit barriers create greater incentives to invest in new technologies and business processes.

These conclusions reinforce the case for investing in ICTs but, more importantly, point to the need to use them more effectively. Progress in structural reforms is introducing greater flexibility in product and labour markets facilitating the take up of new technologies, the reorganisation of business practices and the re-skilling of the workforce. Furthermore, to narrow the productivity gap, the European Union should exploit its comparative advantage of having a thriving electronic communication sector.

³ Van Ark, B. and Mahony, O. (2003), *EU Productivity and Competitiveness: An Industry Perspective*, http://europa.eu.int/comm/enterprise/enterprise_policy/competitiveness/doc/eu_competitiveness_a_sect oral_perspective.pdf

3. RECENT DEVELOPMENTS IN THE ELECTRONIC COMMUNICATIONS SECTOR

The electronic communication sector grew fast in the late nineties. In 2000, it faced a sharp downturn. After three years of consolidation, in 2004 conditions seem to be right for the sector to return to higher rates of growth.

Improved financial conditions for the operators combined with continued growth in revenue from services create the conditions for the sector to recover. For the modest expansion in 2003 to turn into sustainable growth for the sector, capital spending must be increased and new innovative services further deployed.

3.1. General developments

Fast growth in the ICT sector at the end of the nineties led to over-investment, excessive stock market valuations, unsustainable business models and high level of payments for third generation mobile communications (“3G”) licences in some Member States. The collapse in market valuations in 2000 was followed by a period of severe adjustment. In the electronic communication sector, high levels of debt forced some operators to implement consolidation plans, delaying the roll out of 3G networks.

Debt restructuring and cost cutting activities have been accompanied by a contraction in capital spending. The reduction in investment had significant negative repercussions on equipment manufacturing firms, locus of most of research and development effort in the sector. It also reduced the capacity of the sector as a whole to continue playing its leading role in the dynamics of innovation and productivity in the Union’s economy.

Nearly four years after the fall in stock market valuations, an improvement in the state of the electronic communication sector is visible. In 2003 the sector has experienced a modest rate of expansion. Revenues are estimated to have increased by 2.6 per cent, a rate comparable to that of the growth of nominal GDP⁴. If account is taken of the fact that prices have continued to fall, the real rate of expansion of the sector is faster than that of the rest of the economy.

A more complete picture is obtained by looking at trends within the two main segments of the electronic communication sector, the service and the equipment segments.

Most of the overall increase in revenues for the sector has come from the *service segment*. Its growth in 2003 is estimated to have reached 4 per cent, mainly driven by mobile services and complemented by the continued expansion of broadband and Internet services. Higher revenues, increases in profits⁵ and a continued reduction in capital expenditure indicate improvement in market players’ financial conditions. The strong reduction in investment activities levelled off during the second half of 2003, making the capital expenditure-to-revenue ratio tend towards a stable rate in the range of 12 to 15 per cent. A return to a sustainable growth path requires a revival in capital spending.

The reduction in investment has contributed to improve the financial fundamentals of the service segment but has reduced demand for the *equipment segment* of the sector. Within the latter, the end-user equipment market is estimated to have declined by 2.3 per cent and the

⁴ Nominal GDP growth does not take account of inflation and is higher than real GDP growth.

⁵ Various indicators of profitability are EBITDA (Earnings Before Interest, Taxes, Depreciation and Amortisation), free cash flow to equity, underlying net income.

network equipment market by 5.4 per cent in 2003⁶. However, the evidence from the mobile section is mixed, with some companies enjoying positive growth and others registering net income losses. Performance seems to be positively related to sales in the end users' equipment market.

Any revival in capital spending by the service segment will feed directly into higher sales of equipment. The outlook for 2004 is therefore heavily dependent on the capacity of the sector to start investing again. The rate of investment in turn will be affected by public action: the implementation of the new regulatory framework will provide greater legal predictability; the implementation of national broadband strategies will create additional demand; and the removal of regulatory and technological barriers will facilitate the roll-out of 3G networks.

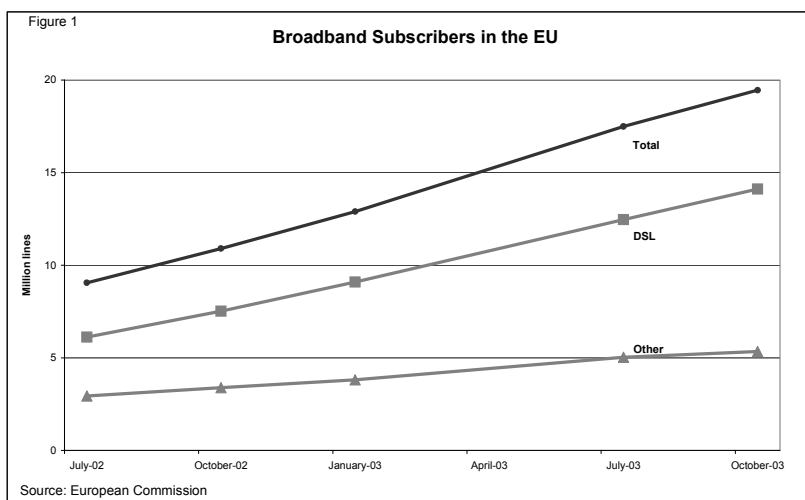
A prerequisite for increased investment is continued revenue growth from services. Margins on traditional services have been cut because of competitive pressures, and the sector must succeed in attracting customers through the provision of innovative services at competitive prices. Voice over the Internet Protocol, for example, sends voice as digital information over the Internet and through 3G networks. High-speed networks also facilitate data exchange, offering the opportunity to deliver entirely new services.

The Commission proposed a Directive on services in the Internal Market, aiming to improve the regulatory environment for a very wide range of services in the EU⁷. Although the proposal does not deal with issues covered by the new regulatory framework for electronic communications, it aims to benefit all users of services, including those in the electronic communication sector, through the removal of barriers to service provision and to the spread of innovation.

As broadband becomes more common in homes and businesses and high-speed wireless networks evolve, the best prospects for increases in revenues are from innovative services that run on such infrastructure. Further development in broadband and 3G mobile communications are therefore necessary conditions for the recovery process to consolidate.

3.2. Developments in broadband and third generation mobile communications

The rapid growth of broadband connections throughout Europe was the most positive development in the sector in 2003. During the past 12 months the number of subscribers has doubled. By October 2003 there were nearly 20 million connections in the European Union. DSL⁸, available via the telephone network, is the most widely deployed (73% of subscribers) and fastest growing platform followed by cable modems. Other technology platforms are still in the early stages with as yet few subscribers.

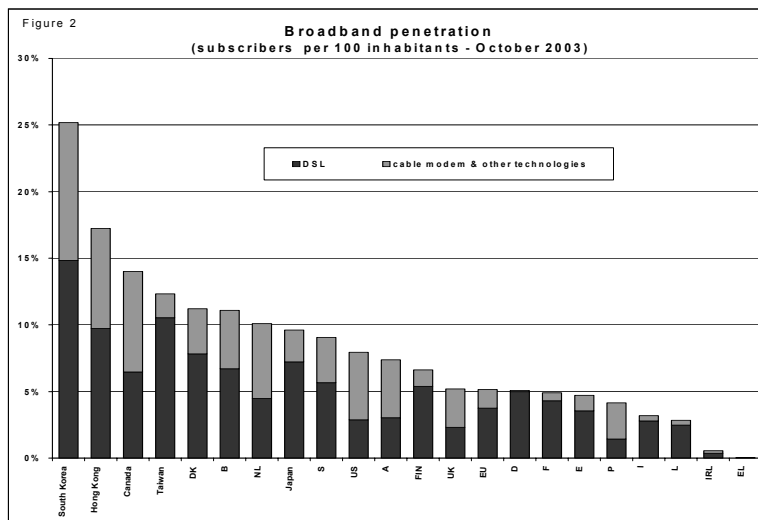


⁶ Estimates by EITO, 2003 October Update.

⁷ COM(2004) 2

⁸ Digital Subscriber Line

Growth is not uniform across the Union and there are wide disparities in broadband penetration rates between Member States (penetration rate defined as the number of broadband subscribers as a percentage of total population, see Figure 2). Some EU countries perform well with higher penetration rates than the United States, though still lagging behind South Korea⁹, Hong Kong, Canada and Taiwan. Many less advanced Member States have recently seen acceleration in growth and may be catching up. These positive developments should not be overestimated: broadband growth in the best performing Member States shows signs of levelling off. If this trend continues, the Union may fail to catch up with its main international competitors.



As regards mobile communications, the evolution from second to third generation implies the development of new services based on the possibility of transferring large amounts of data. As a result, 3G will provide businesses with new opportunities for achieving productivity gains.

Growth in the mobile sector is driven by services offered over 2G and 2.5G, resulting in high penetration and revenues. 3G markets are beginning to take off, with services available in five Member States. Subscriptions are rising and operators coming forward with a more concrete vision of the new services, including peer-to-peer data transfers. Operators are for the most part keen to avoid past mistakes and to market new services rather than a new technology, but this has the unfortunate side-effect of giving a low public visibility to 3G in many Member States.

In conclusion both the broadband and 3G markets are becoming the most dynamic parts of the electronic communication market. However, they have to overcome substantial challenges to meet the expectations of growth and competitiveness of the European economy.

4. POLICY CHALLENGES

Further deployment of new services is primarily up to the market. However, incentives to invest are also affected by public policies: the new regulatory framework for electronic communications aims at enhancing competition and stimulating investment by providing a clear and predictable legal environment; national broadband strategies include public intervention to bridge the digital divide and to improve demand through the connection of

⁹ According to the ITU, “The Republic of Korea is an estimated three years ahead of the global average in terms of converting Internet users to broadband. The critical mass was attained as early as 2000 and since then take-off has been rapid. Households penetration currently stands at two-thirds of the Korean population. One of the interesting features of the Korean experience is how many of the new broadband users have not previously experienced narrowband Internet access, but instead subscribed to Internet services for the first time as broadband users” (ITU, “Birth of broadband”, 2003, p.3).

relevant public administrations; the roll-out of 3G networks requires public action to address the removal of the remaining regulatory and technological barriers.

Recent developments and policy initiatives have led to a focus on four priority areas: improved legal predictability of regulation, greater broadband coverage of remote and rural areas, stimulation of demand, and challenges to 3G developments.

4.1. Regulatory challenges

The new regulatory framework is designed to enhance competition and stimulate investment in the market. It facilitates market entry and is based on a technologically-neutral approach that takes account of the impact of convergence. It is flexible enough to adapt to fast-changing markets, as regulation can be rolled back as soon as markets are deemed competitive.

Providing a predictable legal environment increases certainty to investors, and stimulates the deployment of innovative and advanced services for users. A modern, cost effective communications infrastructure is a key driver for the European economy.

Late, incomplete or incorrect transposition by Member States is creating uncertainty in the market. The Commission has opened infringement proceedings against a number of Member States for late transposition, and will continue to press for complete and effective implementation at national level.

Effective and timely implementation of the regulatory framework for electronic communications by the Accession Countries will also make an essential contribution towards bringing their communications sector, and their wider economies, more closely into line with those of the existing Member States. The Commission therefore urges Accession Countries to make every effort to complete the process of adapting their national laws to ensure transposition of the framework by the accession date of 1 May 2004. The liberalisation of communications networks and services in compliance with the new regulatory framework can be expected to add significantly to the potential for growth and technological development in those countries.

The Commission is working with the national regulatory authorities responsible for applying the new framework to develop guidelines on remedies that may be imposed on companies with significant market power in specified markets. The aim is to improve consistency in the way remedies are applied, and to develop a common conceptual framework that gives incentives for progressive infrastructure investment, thereby bringing forward the time when regulation can be lifted as there is effective competition in the market.

This joint work also seeks to provide guidance on the treatment of newly emerging markets. To stimulate investment, the Directive¹⁰ makes it clear that emerging markets should not be subject to inappropriate obligations.

In summary:

- *The new regulatory framework for electronic communications had to be transposed by 25 July 2003. Member States who have not yet fulfilled their regulatory obligations should ensure complete and effective implementation; infringement proceedings to this effect were opened in October 2003.*

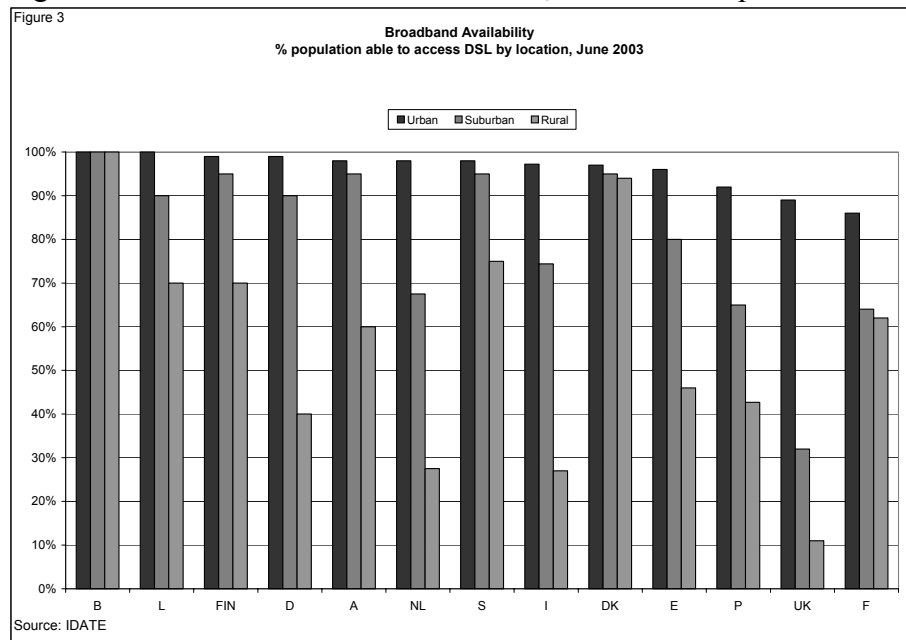
¹⁰ Directive 2002/21/EC, Recital 27.

- *The Commission and national regulatory authorities must complete the work on remedies to be applied to companies with significant market power.*
- *Member States must ensure that emerging markets are not subject to inappropriate obligations.*

4.2. Increasing coverage in under-served areas

Some areas may be excluded from broadband provision because estimated demand is insufficient to attract private investment. Policy makers have, however, been aware that broadband is beneficial to the cohesion of the Union. Thanks to improved interactivity, broadband enables the active participation of geographically isolated citizens in social and democratic life. It improves their living standards by bridging distance, facilitating healthcare, education and access to public services.

Recent growth in broadband is mainly taking place in urban areas (Figure 3). Exchange of experience at the EU level in December 2003 has shown that regional and local authorities have already taken initiatives to stimulate the deployment of infrastructures in remote and rural areas. The technological trend is manifold: in fixed lines, some municipalities have intervened by rolling out fibre optic rings; in wireless, solutions such as satellite and wireless LANs are increasing their presence. Good practice also highlighted the role of demand aggregation policies in scarcely populated areas to reduce the costs of deployment.



The Commission acknowledges the need for public intervention to accelerate coverage of under-served areas, but underlined the need to respect regulatory principles and competition law. Public intervention may complement private investment but should not pre-empt private sector initiatives nor distort competition. The guidelines on criteria and modalities of use of Structural Funds for electronic communications¹¹ published by the Commission in 2003 illustrate how to strike a balance between public support and competition requirements. Their application is relevant to any form of public funding.

The Communication on a European Initiative for Growth¹² has given further impetus to the extension of broadband coverage. It announced the Digital Divide “Quick-start project” to

¹¹ Available at http://europa.eu.int/comm/regional_policy/sources/docoffic/working/sf2000_en.htm

¹² *A European Initiative for Growth: Investing in Networks and Knowledge for Growth and Jobs*, COM(2003) 690

accelerate provision of broadband access in under-served areas through a technology-neutral approach. R&D related to 3G mobile communications and beyond is being supported through the launch of a project on Mobile Communications and Technologies. Finally, the research network infrastructure project focuses on further upgrading the Géant network that currently connects universities, research and higher education centres in Europe.

In conclusion:

- *Member States had to present their national broadband strategies before the end of 2003. Those who have not yet done so should complete their national strategy and present it to the Commission without delay.*
- *The Commission will publish a Communication to the Council and the European Parliament on those national broadband strategies, including recommendations on their implementation in May 2004.*
- *Member States, in coordination with regions, should encourage digital-divide broadband quick-start projects in the context of the mid-term review of structural funds and on the basis of their national broadband strategies, with emphasis on remote and rural areas, including the outermost regions.*
- *Within the eEurope framework, the Commission will set up a Forum on the Digital Divide in March 2004. This Forum will bring together all stakeholders in the area of the Information Society and electronic communications to analyse how to bridge the digital divide. The Commission will report on the Forum's outcome by mid-September 2004.¹³*

4.3. Stimulating demand

While broadband is already available to the majority of households in the Union, only a fraction of them has chosen to subscribe. Data show the existence of a significant gap between availability and effective use of broadband infrastructure. Adoption not deployment is becoming the main issue for the development of the broadband market.

Different factors might explain the gap between supply and demand. Consumers' take up and acceptance of new technologies is positively related to ease of use. Other determinants of consumers' choice are prices combined with the availability of useful innovative advanced services.

Empirical evidence demonstrates large differences in prices and speeds between the Union and other regions. A recent OECD study¹⁴ shows that Korea and Japan offer the lowest prices and highest speeds. Prices in the Union are higher, not only in comparison to these leading economies but also to North America. These higher prices make broadband relatively less attractive for consumers and businesses in the Union.

Differences in prices and broadband development partly reflect varying degrees of competition. In the Union, high broadband penetration is found in Member States with a relatively important degree of facility-based competition. The Commission has stressed several times its conviction that facility-based competition will deliver benefits in terms of the

¹³ See also the White Paper on *Space: a new European frontier for an expanding Union. An Action Plan for implementing the European Space policy*, COM(2003) 673.

¹⁴ *Benchmarking Broadband Prices in the OECD*. 2003 (DSTI/ICCP/TISP(2003)8)

price/performance ratio and increased diversity of choice for consumers. Therefore national regulatory authorities should provide incentives for competitors to seek access from the incumbent in the shorter term, in particular in the market for wholesale broadband access, in a way that encourages competitors to build out their own infrastructure in the longer term.

The Commission analysed the competitive situation of the broadband market in the 2003 Report on the implementation of the EU electronic communications regulatory package¹⁵. Although on average the market share of incumbents reduced during 2002, competition in the European broadband market remains weak.

Prices of connections do not tell the whole story. Internet users will increasingly migrate to broadband if they can access innovative content, applications and services. Member States are promoting the development and use of online e-government, e-health and e-learning services as part of their national strategies. The eEurope 2005 Action Plan¹⁶ emphasises the importance of stimulating demand to enable companies and institutions to use ICTs more effectively. It also supports demand-aggregation policies to ensure a critical mass of users in public administrations.

Interactivity offers a new dimension also to business applications and consumer-oriented services. But as broadband opens the way to the development of new advanced applications and high-quality digital services, new issues are raised.

A Commission workshop in July 2003 showed that operators, Internet service providers, content providers, broadcasters and the entertainment industry are trying to adapt their activities through new forms of partnerships crossing the traditional boundaries. These alliances aim to offer a more complete range of services while preserving access to users and ensuring adequate revenues. However, long-term exclusive contracts may impede access of service providers to premium content, reducing competition.

The development of new business models will depend on finding solutions to issues such as: (i) convergence between broadcasting and broadband audio-visual services; (ii) security and trust issues arising from the increased vulnerability of networks due to the “always-on” feature of broadband; (iii) the fostering of a secure micro-payment environment; (iv) the enforcement of IPRs for protected content through adequate Digital Rights Management (DRM); (v) the required degree of interoperability.

In particular:

- *The Commission will work with industry to address the issues possibly hampering the development of new business models, such as micro-payments, security and trust, and interoperability. This work will aim at facilitating the development of services whilst taking into account other primary interests such as financial stability and consumers' confidence.*
- *The Commission will establish a high-level group with industry in March 2004 to address the issue of DRM systems.*
- *The Commission will monitor closely the acquisition of long-term exclusive licences for premium content by dominant operators.*

¹⁵ COM(2003) 715, *European electronic communications regulation and markets 2003*.

¹⁶ COM(2002) 263

4.4 Third generation mobile communications

Growth in data services in fixed and wireless networks is a good basis for expecting a gradual but sustained transfer of large numbers of mobile subscribers to 3G. However, roll-out of 3G networks and launch of 3G services continues to face a series of obstacles.

Specifically, diverging roll-out requirements between Member States have an impact in terms of lost synergies, not least in marketing terms. Similarly, diverging licence procedures and conditions place a burden on operators and may fragment the single market. Network infrastructure-sharing arrangements at European and national level are likely to have positive practical effects on network operators. In addition, secondary trading of spectrum, as now permitted under the new regulatory framework, will have a positive impact in those Member States that propose to implement it.

These issues were highlighted in the Communication *Road to the knowledge economy*, which indicated the need for enhanced coordination of network roll-out; the need for guidance in network infrastructure sharing, which the Commission gave through two competition decisions in 2003; and further analysis of secondary trading issues through a workshop organised in December 2003.

The new regulatory framework should enable regulators, on the basis of the proportionality principle, to refocus regulation and withdraw it once effective competition is established. New and emerging markets should not be regulated inappropriately. As regards content, demand for 3G services will depend to a large extent on the availability of attractive offerings (both in terms of services and prices) and on improved costumers' choice. The Commission will investigate possible restrictive practices as regards the sale of sport rights to 3G mobile operators.

The Commission has set up a Mobile Communications & Technology Platform with the aim of identifying stakeholders' views on short, medium and long-term key challenges. In its report, the Platform calls on the Commission to coordinate action by all relevant players. The dialogue with industry has highlighted the following challenges:

- Member States need to facilitate the physical roll-out of 3G networks, in particular in the light of sometimes heavy deployment and coverage obligations in licences. As regards rights of way, there is lack of awareness of the difficulties in obtaining permissions and poor co-ordination between authorities at local and national levels. In addition, very stringent planning requirements in some Member States are hampering roll-out. The success of 2G (GSM) largely resulted from the effective inter-working of networks and devices. Widespread take up of 3G services will also depend on interoperability at service and application levels. There is a need for industry and the relevant standardisation bodies such as the Third Generation Partnership Project to work more effectively with the support of the Open Mobile Alliance and the GSM association and help to achieve this objective. Open specifications and, where appropriate, open interface standards are also required. Regulatory intervention is justified only where the potential cost of resolving incompatibilities would be prohibitive.
- Research at European level has played a major part in developing GSM and UMTS standards, and collaborative research will play an important role in the future. In this context, international cooperation in research needs to be strengthened, facilitating consensus building on future standards and providing for an early adoption of measures

that guarantee interoperability on a global scale. Greater openness to participation by third countries in European R&D programmes will bring benefits for European companies.

- There is also a need for industry to coordinate its efforts in the definition and collaboration of their research endeavours within the Union research programmes. Flexibility in research financing, improved research structuring and coordination of actions and initiatives are needed to achieve critical mass and optimise impact.
- Mobile business should be conducted in an environment based on security and trust. Spam is a growing problem and the theft of handsets must be tackled effectively. An appropriate m-payment environment is also essential to the development of new services.
- Access to spectrum is clearly very important for the provision of 3G services, and efficient mechanisms for managing this resource are indispensable. While there are currently disparate views in the industry and between the Member States on the way in which spectrum should be managed, the potential for increased spectrum harmonisation within the Union has been secured through the adoption of the Spectrum Decision¹⁷. Nevertheless, a broad reflection process on the means to access spectrum resources for wireless electronic communications would be beneficial. In this context, enhanced coordinated action at European level is needed.
- Finally, the adoption of regulatory models that are in line with the European approach in third country jurisdictions will substantially increase the opportunities for European operators seeking to export their services. Similarly, open international standards, following the model of GSM and UMTS, will boost the export of equipment by European companies.

In conclusion:

- *Challenges identified by the Mobile Communications & Technology Platform cover a wide range of areas. To avoid uneven progress, the issues need to be tackled within an overall policy framework. The Commission will therefore address them in a Communication to be presented to the Council and the European Parliament in July 2004. It will contain specific recommendations to all parties involved to address the different issues identified by the Platform.*
- *The success of 2G (GSM) is largely attributed to the interoperability which is a core component of the entire system. Moving to 3G involves a new dimension. It will mean moving from voice exchange to data exchange, thus offering possibilities to deliver entirely new services and to work and process data jointly, to do so online and in real time from anywhere. This should result in productivity gains. The move to 3G is hampered by the continued lack of interoperability at the level of platforms, but mostly at the level of services and applications delivered over the networks. Work on interoperability must be accelerated fast. To do so, the Commission, through its R&D Framework programme, will bring together the relevant actors (industry, standardisation bodies, etc.) to establish a roadmap of key areas where interoperability needs to be achieved as a matter of urgency.*

¹⁷ OJ L108/1 dated 24 April 2002.

- *The physical roll-out of mobile networks is also hampered by local, regional and national measures relating for example to rights of way and planning requirements. The Commission recalls that the Seville European Council in June 2002 called upon all relevant administrations to act to overcome difficulties encountered in the physical development of networks. Despite this call, progress has been slow.*

5. CONCLUSIONS

The electronic communication sector grew fast in the late nineties. In 2000, it faced a sharp downturn. After two years of consolidation, an improved economic outlook and evidence of demand for high-speed services offer renewed opportunities for the sector to return to a sustainable growth path.

Even though the sector has suffered a slowdown since 2000, the information society has continued to expand through continued innovation, increases in Internet usage, broadband connections, mobile services, availability and use of e-government and e-business services. This long-term trend creates a potential for higher productivity gains and improved competitiveness. The Union needs to promote the effective use of ICTs and create a favourable and competitive environment for the growth of the electronic communication sector to be sustained.

Governments can help in various ways. They can increase their own usage of ICTs and broadband applications, they can aggregate demand and facilitate the dialogue between stakeholders and, where needed, can support the provision of services in under-served areas. These are the main issues that national strategies are expected to tackle, both for broadband and 3G. The Commission will report on these strategies to the Council and the European Parliament in May 2004. It will continue working with stakeholders in areas such as IPRs, Digital Rights Management, trust and security issues, interoperability and standardisation, spectrum management and coverage of remote and rural areas.

A competitive market is conducive to investment. Thus, implementation of the new regulatory framework for electronic communications needs to be effective and consistent across the European Union. Unfortunately, six Member States have not yet transposed the framework into national law. The new Member States should already take now all the steps necessary to ensure a timely implementation of the framework.

The European Union must step up its efforts to encourage the use of ICTs. The eEurope 2005 Action Plan is the instrument designed to achieve this objective. The eEurope 2005 Mid-Term Review, which will be available to the European Council at the same time as the present Communication, sets out the key issues that will form the basis for a revised action plan for an enlarged European Union. It is important that the European Council acknowledges the role of ICTs in achieving the Lisbon goal and supports the eEurope mid-term review process.

If the Union is to maximise the impact of ICTs as the engine for growth, productivity and jobs, it is essential to move forward on the different actions identified in this Communication. They represent individual links on a chain that can pull the Union closer to the Lisbon strategy's goals of sustainable growth and jobs. Success requires the strengthening of the political commitment to a knowledge-based economy that was so evident in March 2000 when the Lisbon strategy was launched. It is therefore important for the European Council to give a clear political signal by taking the necessary steps to foster the conditions in which Europe's information and communication technology industries can thrive.