

A stylized globe composed of a grid of thin white lines, with twelve yellow stars arranged in a circle on its surface, set against a dark blue background with glowing light trails.

| Building the European
| Knowledge Economy

Telefonica

Telecommunications and the future
prosperity of Europe and its citizens



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Foreword

Why Telefónica believes that it is important to take the opportunity offered by a new European Commission and Parliament to refresh both the approach and the policies directed at the ICT industry and in particular the communications sector.

Almost no one predicted the severity or shape of the economic crisis that the world now finds itself in. Indeed it is only during early 2009 that Telefónica has seen the real impact on the markets in which it operates. Economic crises are both a threat and an opportunity. It is in times of trouble that people often seek out new opportunities and different ways of doing things with increased fervour, but they then judge those things through the eyes of a new harsh economic reality. These are times when successful businesses plan for survival and prepare for future opportunities and we have responded by continuing to invest where we can make a difference, clearly demonstrated by some key recent announcements.

Telefónica is a truly global operator in the communications sector, a sector where European businesses have up to now been the most successful.

In the maturing European market, Telefónica has invested in new operational units in 15 countries to further enhance the integrated telecommunications services we offer Multinational Corporations across the region. This roll-out includes the provision of Wide Area Networks, Internet services and fixed and mobile voice and data services.

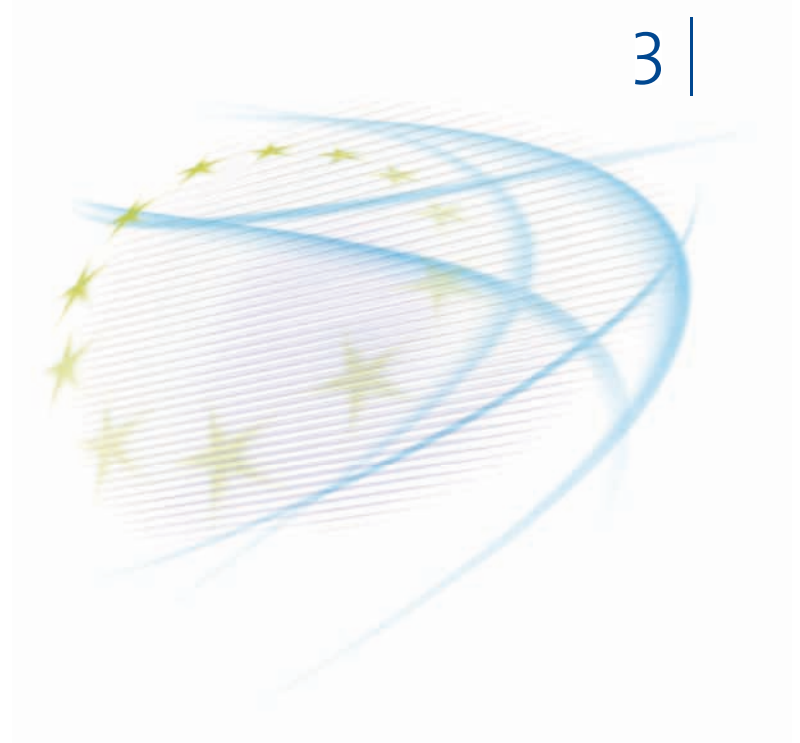
In Asia Telefónica and China Unicom have entered into a strategic alliance agreement where we agreed that the two companies would cooperate in various areas such as; procurement, development of wireless service platforms, services to Multinational enterprises and R&D. China Unicom and Telefónica agreed to invest the equivalent of US\$1 billion

through the acquisition of each others shares. This is the first time a Chinese telecom company will take a stake in a European operator. Unicom will own close to 1% of Telefónica Group, while we will raise our stake in Unicom to 8%. For Telefónica, this offers an increased exposure to the world's fastest growing mobile phone market.

In Latin America Telefónica has been the largest single investor in the region committing over €80 billion over the last 15 years.

The above investments reflect the global nature of modern ICT businesses and why a more strategic EU approach to global investment issues is needed. This requires an improved industry dialogue and new policy approaches that can deliver improved international competitiveness through world leading innovation both in ICT and its application.

We have said previously that Telefónica and ICT can also be the engine for economic recovery. This is far more relevant as we consider what Digital Europe should look like, and how ICT can facilitate positive change, investment and inclusion. Telefónica is ready to play its part by providing the tools for innovative Investment (Telefónica has this year become the leading Telecommunications company based on sustainability criteria according to the Dow Jones Sustainability Index (DJSI)) in Infrastructure, Transport, Climate Change, Energy and the Environment, Health, Education and Skills. This will require more imaginative cross-sector policies to include ICT as a vital enabler for these sectors and development of Digital Europe.



This document presents Telefónica's views on the current opportunities that face European communication businesses and why it is important for European citizens to ensure that the ICT industry continues to be successful and is encouraged to deliver the infrastructure, products and services that Europe needs. The European Commission, together with the Council and Parliament has a key role in this as it sets policy and proposes regulatory interventions that shape and give confidence to the investment climate.

The aim of the first common European policy governing telecommunications was liberalisation, removing remaining historical national monopolist privileges, cutting back the role of the State and introducing competition to the benefit of the consumer. It began in the 1990s and, a decade and a half later, the result of its implementation, although not perfect, is very close to that intended.

The industry, the Commission and the Parliament have just spent the last two years debating proposed updates to the current communications regulations. As this document is being written that process is still not complete. The result of all this work in our view offers some improvements but is combined with some regressive regulation. Telefónica believes that a more progressive pro investment and pro innovation agenda is required which acknowledges the challenges facing the industry in the next decade.

What these recent discussions did not really address were two of the biggest issues facing the EU:-

- how to make sure that Europe derives maximum economic and social benefit from broadband technology (a connected or Digital Europe) to underpin European competitiveness and social cohesion; and
- how to survive and emerge from the economic crisis with economies fit to compete in the 21st century global economy.

Telefónica believes that we need to look beyond the next 2 to 3 years and address the harsh realities of markets, technologies and investments. The world is becoming more unpredictable leading to increasing risks and uncertain returns for business. How best to deal with this unpredictable risk is probably the major issue in our decisions on where to invest globally and on the rollout of broadband networks. The policies that are created in Brussels are a significant factor in these risks and it is in everyone's interest to seek to reduce uncertainty in ways which continue to deliver benefits to European citizens and encourage the investment essential to a prosperous European economy. Telefónica is ready for this new strategic dialogue.

Cesar Alierta

Executive summary

The new European Commission and Parliament that will take up office in 2009 have a clear opportunity to take a fresh approach to Digital Europe including new digital services and applications which will be supported and enabled by the ICT sector and in particular communications. The global economic crisis represents both a threat and an opportunity. It forces people to focus on what really matters in terms of action planning. We must plan for the future needs and prosperity of European citizens with a disciplined prioritisation and targeting of the available resources now.

The ICT industry is a critical enabler to the future health of the European economy and European citizens. This document provides Telefónica's assessment of where industry in Europe is today compared to the global marketplace, followed by the contribution that ICT makes or could make to European citizens and finally gives some pragmatic proposals for a fresh regulatory approach that would help deliver these benefits.

There are three distinct elements of delivering beneficial outcomes for citizens from ICT. They are:

- ICT readiness (infrastructure and access)
- ICT use (intensity)
- ICT skills (literacy, education, trust and confidence)

All three areas are required to interact effectively to get the best outcomes. It may seem obvious but without pervasive infrastructure there can only be limited use and without skills there can only be limited economic and social value from that use.

The current debates about high speed fixed and mobile broadband networks are about providing the first essential infrastructure element in this value chain. This is why it is important for a framework to emerge that encourages and provides incentives for the deployment of next generation networks and high speed broadband by supporting new risk sharing and incentive pricing models.

Innovation is at the heart of a knowledge based economy and for Europe to continue to prosper the correct climate for innovation in ICT must be created. The ICT sector is essential to developing the innovative environment that will provide a platform for European competitiveness. For example network based services such as cloud computing will enable Small and Medium businesses to become more efficient and competitive.

The economics of the future IP networks are based on global economies of scale and Europe needs to address this issue and not stand in the way of consolidation, where this does not create significant imbalances of market power.

For many years regulators, including the Commission, have said that they would like to move away from the detailed ex ante regulatory environment that we now have. Apart from a statement¹ in February 2007 by Commissioner Reding anticipating that the new regulatory framework would lead to removal of ex ante regulation "*...should be capable of making ex ante-regulation practically superfluous by 2018 at the latest*". We have seen no real movement in this direction. It is now time to make real progress along the path to removing the special ex ante conditions placed on the sector and replacing them with a conventional competition law regime.

Spectrum will play a growing and important role in the future delivery of high speed broadband and continuing attention needs to be paid to the timely release of the frequencies across Europe to achieve a digital dividend and an economy with more customer choice. In a Europe which strives to deliver "broadband for all", wireless technology will be critical to enabling that vision. Wireless technology is not just a way of economically extending the reach of broadband it is and will increasingly be a substitute for fixed network broadband. Telefónica believes that some areas will be especially key to realising Digital Europe. These include raising the competence

¹ Towards a True Internal Market for Europe's Telecom Industry and Consumers – the Regulatory Challenges Ahead, speech to the ERG 15 February 2007.



levels in ICT through training and education, establishing the web as a trusted source, addressing digital safety and piracy and encouraging a wide diversity of content and creativity. Defending outdated business models by intrusive measures will ultimately not work. It is important to take a coherent, consistent and pragmatic approach to privacy, security and

content issues and encourage the development of new content delivery business models.

To summarise, Telefónica believes that the following actions are critical for the economic and social welfare of European citizens.

1. Place ICT at the heart of plans to address European competitiveness.

- To ensure ICT is a key enabler supporting economic recovery and prosperity

2. Encourage the most beneficial market growth by addressing all elements of the ICT value chain.

- To create an environment where ICT readiness, use and skills are all closely tied together and supported by appropriate public and private plans and resources.

3. Promote infrastructure investment for a Digital Europe.

- To support investment in next generation high speed networks (both fixed and wireless) as an European Policy objective by supporting risk sharing and new wholesale business models.

4. Implement a responsive European spectrum management policy.

- To encourage the development of new services through the release of spectrum based on demand.

5. Support European industry in its search for global competitiveness, scale and leadership.

- To provide a better link between investments and the underlying global economic drivers

6. Reconsider the universal service model

- To focus on policies that addresses territorial cohesion (coverage) but generally leave social cohesion (prices) to innovation and the market.

7. Encourage both the creation and distribution of digital content.

- To encourage content owners to work with service providers to develop new business models that build on the strengths of both parties and work with innovation, not against it.

8. Move from an ex ante to an ex post regulatory regime

- To make real progress towards a conventional regulatory regime that is less sector specific and more reliant on the direct application of competition law.

1. Economic problems and opportunities



What seemed to start off as significant turbulence in the financial markets has ended up turning into a deep global crisis leading to a recession in most countries.

Therefore, the global economy is facing a period of great uncertainty and obvious risks – linking factors that feed one another – rising unemployment, slowing down trade, curbing activity and compromising standards of well-being.

The end of the crisis will come as a result of applying essential mitigating remedies, but these need to be complemented by more structural and reforming actions aimed at correcting problems that have been identified as causing the current situation.

Unlike other recessions, beyond the obvious priority of cost management, companies seem more aware of the global need to maintain competitiveness, address energy consumption and conserve skills in the workforce. To achieve this, businesses are highly dependant on the ICT industry. The ICT industry is itself a rich ecosystem with high levels of interdependence among

its players. The telecommunications industry is at the core of that relationship providing the intelligent communication grid between businesses, between businesses and end customers and between governments and citizens.

The contribution of ICTs in any future scenario will be essential to improving the level of competitiveness. Contrary to that predicted by some critics, the current crisis has not fundamentally questioned globalisation as an effective economic stimulus; rather it has demonstrated the inherent interaction of world economies. In Europe the area of ICT where we are strongest is Telecoms and building on this is essential for European competitiveness.

As stated there is general awareness of the contribution of ICT to improving productivity and the availability of goods and services. More difficult to quantify but increasingly recognised is its potential to contribute directly to the well-being of citizens – in their homes, at leisure, personal health, personal development and training, etc. This is alongside its direct impact on global challenges such as the availability of energy, environmental protection and the improved supply of essential goods and services in the developing world.

| 1.1. The Necessity of Public-Private Cooperation

It is now clear that the result of the economic crisis will undoubtedly be pressure on public budgets, with a lower capacity to take on further commitments and an increase in debt, resulting in limited and in some cases reduced resources being available. This may lead to new funding models and more demands on

private sector investment. The vast majority of the required investment for new networks will come from the private sector but there is a clear role for the public sector in some regions where returns are problematic or where there is prior control or ownership of infrastructure by public bodies.

| 1.2. More Questions than Answers

At the moment we are seeing what seem to be a growing number of economic questions and a decreasing number of answers. The main uncertainty is, without a doubt, the sustainability and general health of the financial system. The recent events in the financial system have, not surprisingly, led to a climate of intervention and regulation developing. However there are a number of distinct views, ranging from those who favour complete nationalisation of businesses to those who see a fast return to the previous environment.

One of the most contested debates of the last few months surrounds the opportunity to strengthen regulatory mechanisms over certain players in the economy; especially those associated with the financial markets, both at the individual state level, as well as in terms of international governance as discussed at recent G20 and G8 meetings. This

debate has expanded well beyond the financial industry and now ranges over issues such as globalisation and corporate incentives and reward systems. If this debate becomes focused on deeper intervention by regulators into already highly regulated markets like telecommunications, then it cannot but have a significant cooling effect on investment plans.

In America the huge spending plans are encapsulated in the American Recovery and Reinvestment Act which is clearly focused on stimulating investment, not on trying to reform regulation. In the serious situation that we are now in it is critical to keep a clear focus on intended outcomes, be it primarily employment closely followed by long-term infrastructure investment and avoid diversions due to special pleading on tangential issues that will inevitably lead to inefficient and sub optimal results.

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1.3. Towards a New Growth Model

A possible benefit of the current economic crisis is that it is leading to a fundamental reappraisal of how countries and the EU will be positioned in the future global economy. For Europe to maintain and improve on the current standard of living and welfare its citizens have come to expect, continuous improvement in productivity and innovation will be essential as economies move out of recession. To achieve this requires a sustained broad range of actions from both government and industry to ensure a widespread take-up and use of ICTs.

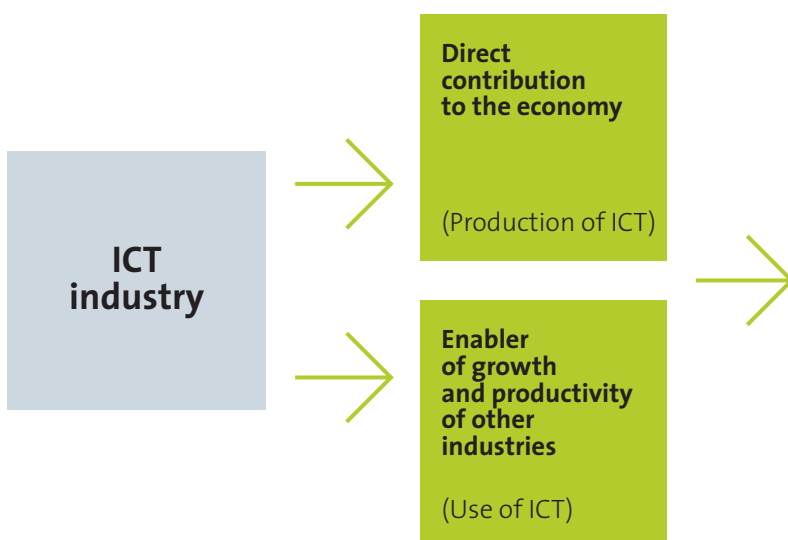
For example the encouragement of R&D, combined with the innovations that ICTs can bring about, appears as the key element to boost productivity and competitiveness across all sectors of the economy. New telecommunications networks, as determinant infrastructures on the 21st century, must play a key role in this change both in enabling innovation and

assisting in skills development. However, promoting R&D alone will not be enough if it is not accompanied by adequate infrastructure and programs to develop people's skills in this area.

Today (figure 1.1), the ICT sector contributes 8% to the GDP of the EU-27, accounts for 25% of the economic growth, 6% of jobs, and 20% of expenditure on R&D&I. The telecommunications sector, as part of this ICT sector, accounts for around 40% of productivity growth and 3% of total GDP of the EU-27, and directly employs more than one million people. It is undoubtedly a strategic sector for Europe. In times of economic difficulties, the capacity to innovate, invest and continue generating growth and employment become key factors for the European economy. In the current times of economic turbulence, it is very important to maintain the health of one of the main sectors of Europe's economy.

Figure 1.1. Impact of ICT sector in Europe

Double economic impact of ICT



European ICT sector: Key facts

8% of EU GDP

25% of EU GDP growth

Employing 13 million people (6% of EU employment)

40% of EU productivity growth

20% of total EU R&D

Guaranteed Universal Service of telephony to all citizens

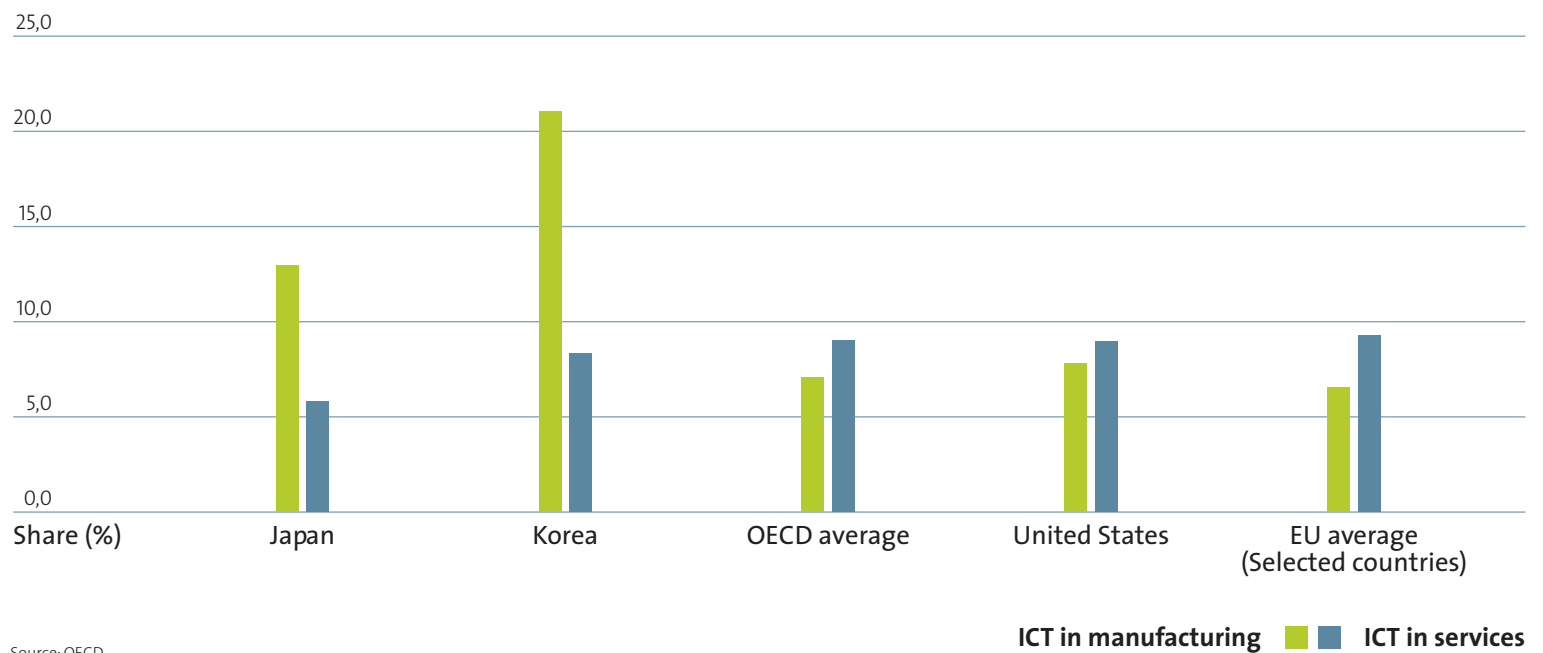
Declining prices: strong contribution to inflation control

Source: European Commission Information Society DG, EC (2010 Annual Report 2007) and Telefónica

The impact of the telecommunications sector goes far beyond its direct contribution to economic growth both directly and indirectly. Telecommunications have revolutionised people’s day-to-day lives and prompted companies to revise their business models and improve their productivity. Use of the services it provides in areas such as healthcare, education or public services is transforming how citizens interact with each other and with institutions.

To repeat an earlier point that, productivity improvement is a critical issue for the future health of the European economy. All of the aforementioned factors make telecommunications one of the pillars for the new economic model which develops the capabilities that Europe needs to accelerate along the growth curve, overcome the current crisis situation, and emerge stronger from these turbulent times. Europe already has one of the highest economic value added in services globally but is the weakest in manufacturing (figure 1.2) according to the OECD.

Figure 1.2. Contribution of ICT to Economic Value Added - 2006



The enablement of significant improvements in productivity, the move towards ever increasing networked and connected people, processes and systems, is dependant on continued high levels of investment in telecommunications. The telecommunications sector must play a key role in preparing Europe for the emergence from this period of economic crisis, fully equipped to compete in the global marketplace.

1.4. Telecommunications are resilient but not immune from the economic crisis

Given the rate at which the economic climate has deteriorated, it seems vital to analyse the evolution of the ICT sector in this environment, and in particular telecommunications. Although the sector largely depends on internal demand, particularly consumer demand, it has not been affected in the same way as others.

Provisional estimations at the end of 2008 suggest that the turnover of the sector in the euro-zone maintained a slightly positive rate, between 1 and 2 percent. It is, without a doubt, a significant reduction in the upward trend of previous years, but at least two cases can be highlighted: firstly, its more resilient progress than the economy as a whole, and secondly, the trend towards the growing use of services associated with greater bandwidth in both fixed and mobile

locations. This trend is compensating for the stagnation and reduction evident in traditional segments of activity, affected in many cases by a combination of saturating and maturing markets.

With respect to the deterioration of the economic situation that has occurred throughout 2008, the European telecommunications sector has managed to maintain growth rates that, although lower than previous years, are still significant.

We can currently draw the conclusion that, the telecommunications sector shows more resistance to the crisis than other sectors, although it is not immune from its overall effects.

1.5. Difficult investment decisions in communications

It is somewhat of a cliché to talk about the speed of change in the communications industry but we have perhaps been underestimating the full impact of changes on business models. The constantly evolving range of broadband technologies, the move to IP networking together with the emergence of new business models driven by advertising, applications and service bundling have greatly increased the perceived risk of long-term investments. The big issue currently for communications companies is how to deliver broadband services as efficiently and effectively as possible. As far as most customers are concerned broadband is broadband and whether they buy from a cable company, a fixed Telco, an ISP, a mobile operator or a satellite provider doesn't really matter. All these operators are faced with the choice of current technologies and technologies just around the corner to invest in. On top of this the market is changing because customers are buying more and more bundled services and they see broadband as a way of receiving and accessing a whole range of services. This makes price setting very difficult over the medium term along with predicting payback times with any confidence.

The current regulatory framework in Europe that is just being revised is not in fact very forward-looking. The assumption has been that its competition law roots enable it to be flexible enough to deal with a fast changing environment. Whilst this is partially true it struggles to deal with fast changing situations and tends to resist change despite the fact that a significant number of markets have now been removed from the list of relevant markets. The treatment of broadband so far has not really acknowledged the investment challenges and the changing nature of markets. The advent of significant new players like Google, Yahoo and Microsoft who generally seek to exploit network capacity and investment made by operators does not seem to have impacted the regulatory environment. The focus still seems to be around current incumbents with debates about issues like functional separation, almost to the exclusion of addressing actual market conditions that will affect operator's medium and long-term investment decisions.

The prospect of almost perpetual asymmetric regulation in a converging market with powerful new players does not create an environment that encourages difficult new investment decisions for the existing players.

The reality is that it is this risky and uncertain picture that operators see when they consider major new investments. This would be true without the current economic downturn but when that is factored in as well, it is not surprising that operators are desperately seeking a predictable regulatory environment in which to make these new investments.

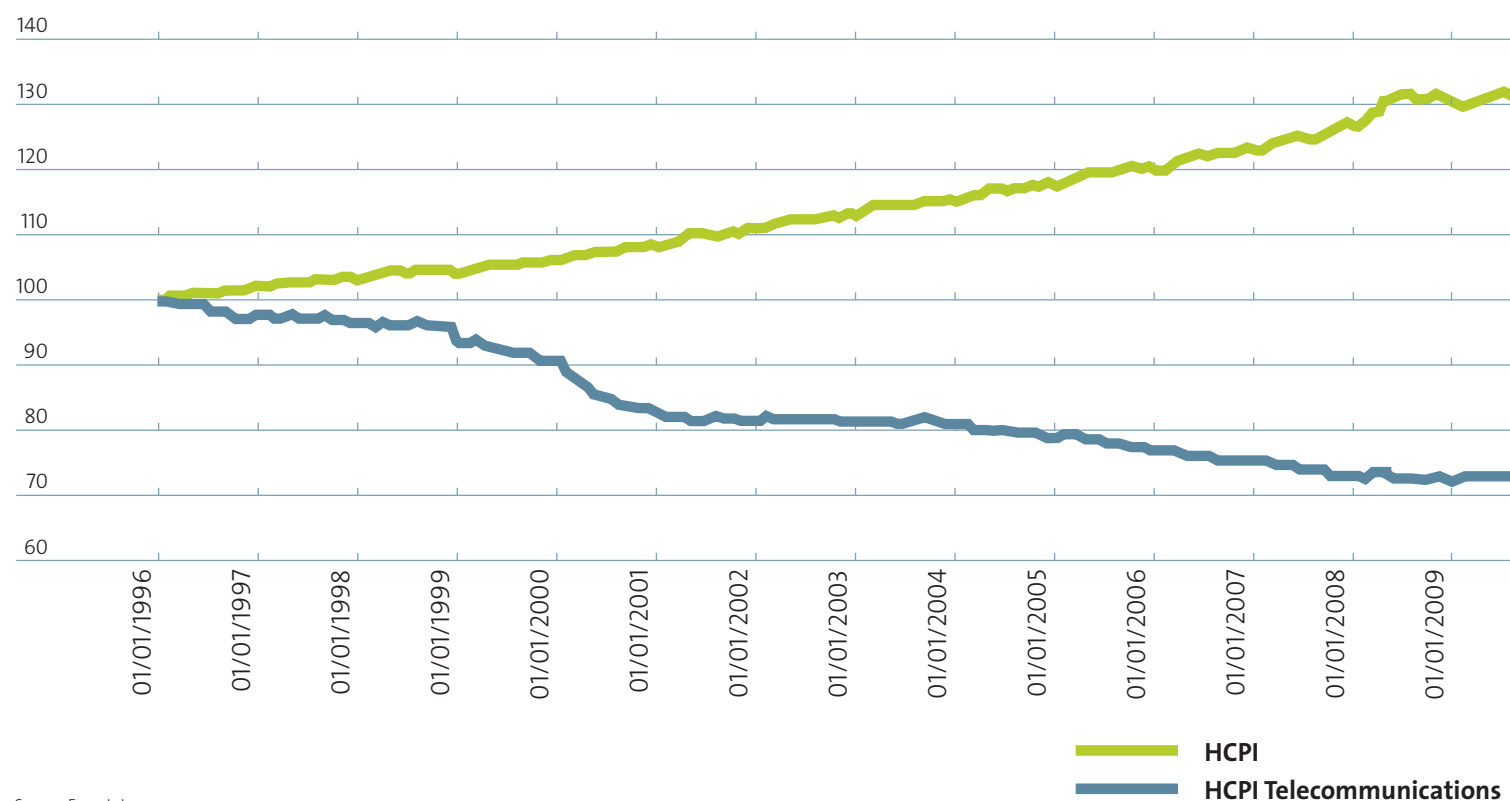
The other major factor that influences investment decisions is the constantly declining retail prices in the sector driven by competition and regulatory intervention.

As shown in figure 1.3, despite the fact that the Harmonised Consumer Price Index (HCPI) has followed an upward trend over the time period analysed, the trend for the ICT² goods and services areas has been just the opposite. While prices in Europe for the economy as a whole have increased more than 25% in the last eight years, telecommunications prices have dropped by

more than 30%. Taking into account that the weight of this item has been increasing over the years, from a weighting in the HCPI of 5.67% in 1999 to 7.63% in 2008, the impact of this gradual reduction in the prices of these type of goods and services on the general CPI of the economy is continually increasing.

In the eight years analysed, the direct estimated effect can be quantified in a drop in the price levels for the entire economy of 2.9%, or the equivalent of an average annual reduction in the HCPI of 5%.

Figure 1.3. Harmonised Consumer Price Index (CPI) in Europe – general and ICT (EU27)



Source: Eurostat

² The ICT goods and services areas include telecommunications, equipment for receiving, recording, and reproducing sound and images, photographic and cinematographic equipment and optical instruments, information processing equipment, and telecommunications-related services. A harmonised price index for ICT goods and services has been reconstructed based on the harmonised price indices in these sectors and their respective weighting as part of the general price index.

2. The role of ICT in securing the economic future for European citizens

2.1. Driving innovation

In the competitive global marketplace Europe is seeking to develop a knowledge based economy based on innovative individuals and innovative businesses. ICT is at the heart of that drive and communications is the nervous system that keeps it working.

Perhaps most important to that success is the availability of

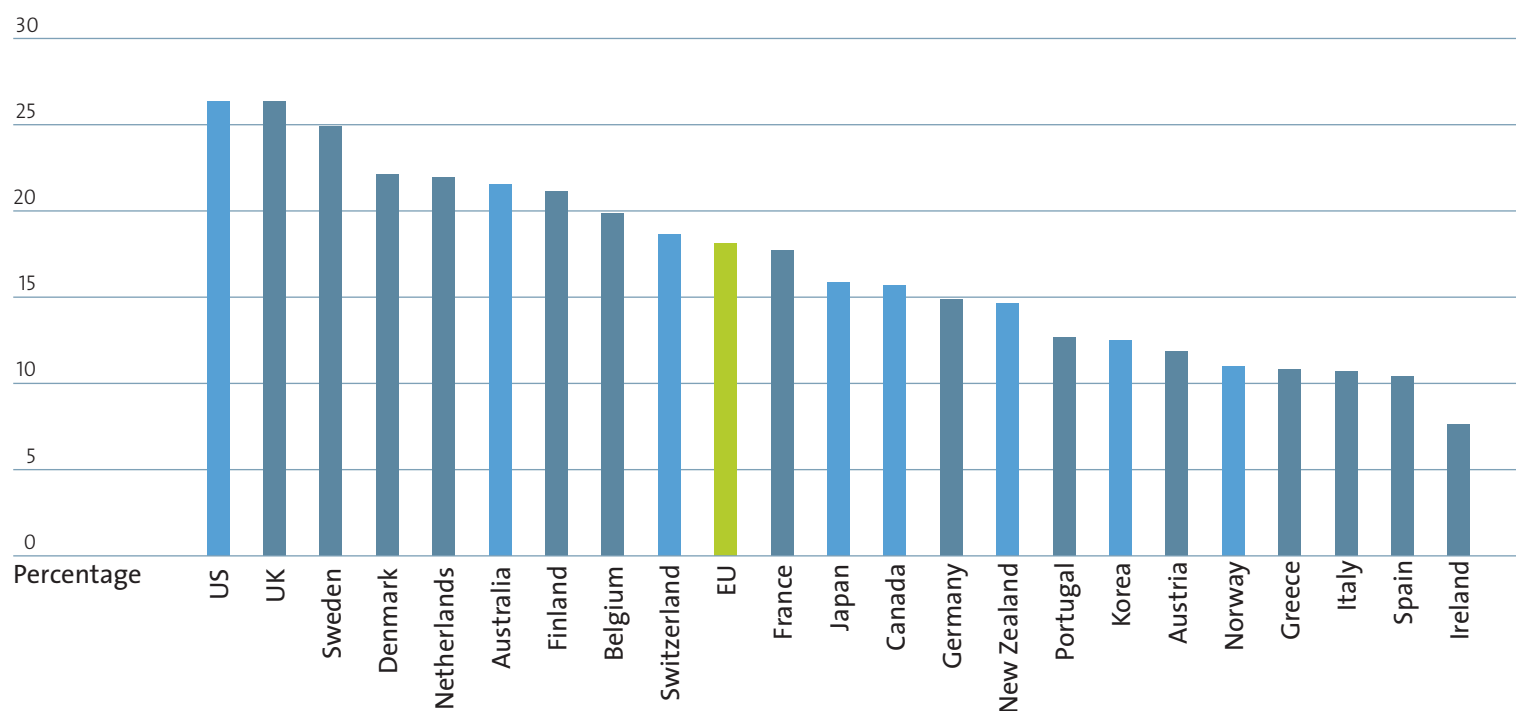
broadband and next generation networks, both fixed-line and mobile. These allow citizens and companies to access and use advanced services, applications, and tools with the required levels of quality and reliability. The new networks must be the foundation on which the future competitiveness of the economies of Europe is built.

2.2. ICT Contribution to the Economy

Over the course of recent decades, a large majority of the developed economies have experienced significant growth in the level of ICT use, which has been reflected in an accelerated growth of spending, both in consumption and in investment in

goods and services related to these technologies. As shown in the figure 2.1 below, investment in ICT represents almost 20% of the non-residential investment in Europe and more than 25% in the United States.

Figure 2.1 - Investment in ICT as % of investment in gross non-residential fixed assets 2006



* Excludes Luxemburg
Source: OECD

This process is the result of the considerable drop in the prices of these goods and services along with improvement in quality, which has, in turn, been generated by the intense rate of supply side technological advances.

Both processes – increased use of ICT and supply side technological and process improvements – have important effects on economic growth as illustrated in figure 2.2. Technological advances experienced by the production branches of ICT translate into increases which contribute to aggregate economic growth that depends on their growth rate and weight in general economic activity (**direct contribution**).

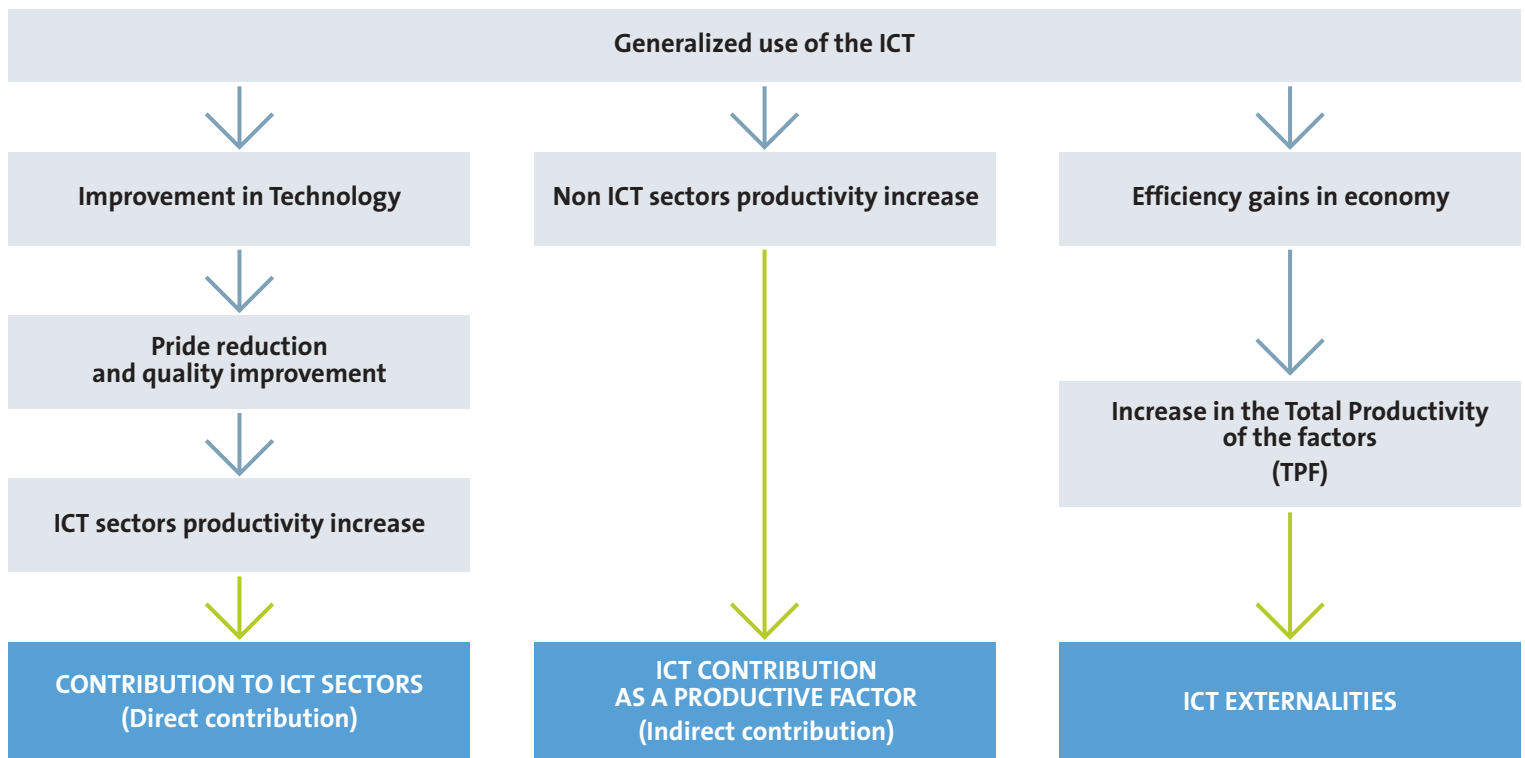
On the other hand, the higher degree of use of ICTs contributes to increased productivity through increased usage increasing the capital stock in ICT equipment goods per employee (**contribution by ICTs as a production factor or indirect contribution**).

In addition, the use of new technologies can facilitate increased efficiency and positive external effects in nearly all sectors, therefore contributing to growth in Total-Factor Productivity (TFP) in the economy as a whole (**ICT external effects**).

A number of studies have tried to quantify the effects of ICTs on the economy. All of these have reached consensus in that ICTs contribute significantly to GDP growth. According to the latest data from the OECD, between 1985 and 2006, ICTs contributed between 0.2 and 0.6 annual percentage points to growth in industrialised countries.

The following extract from an OECD paper indicates the practical ways in which telecommunications and broadband in particular contribute to innovation and growth in the economy.

Figure 2.2 - Contribution of ICTs to the economy



Source: Telefónica

Broadband and innovation

Broadband has an impact on innovation both through innovation in ICTs and through innovation enabled by ICTs, such as collaborative R&D networks, virtual simulations, artificial intelligence, grid computing initiatives, and new work practices. Broadband enables both innovation through development of new applications and the diffusion and further development of existing innovations, and these two channels mutually reinforce each other. The broadband enabled combination of ICTs and other technologies (e.g. biotechnology and nanotechnology) may generate even more inventions and innovations in future (Carlaw et al., 2007). There is also evidence that firms that use ICTs more intensively innovate more, creating larger spillovers and productivity gains (Koellinger, 2006). Such effects can be reinforced by broadband as it enables more intensive use of ICTs, enhancing the possibilities of their innovative use.

Broadband also increases firms' ability to move more quickly from idea to product, for example by allowing around the clock R&D, "24x7x52", and concurrent R&D on multiple projects in different locations. Thus, ICTs and broadband have a transformative effect on the way innovative activity is carried out. New forms of ICT-related innovation processes are emerging, speeding the diffusion of codified knowledge and ideas, enabling relations based on tacit knowledge and personal relations, and linking research more closely to innovation. They lower barriers to product and process innovation, accelerate start-ups, improve business collaboration, enable small business to expand their R&D and collaborate in larger R&D consortia, reduce cycle times, and foster greater networking.

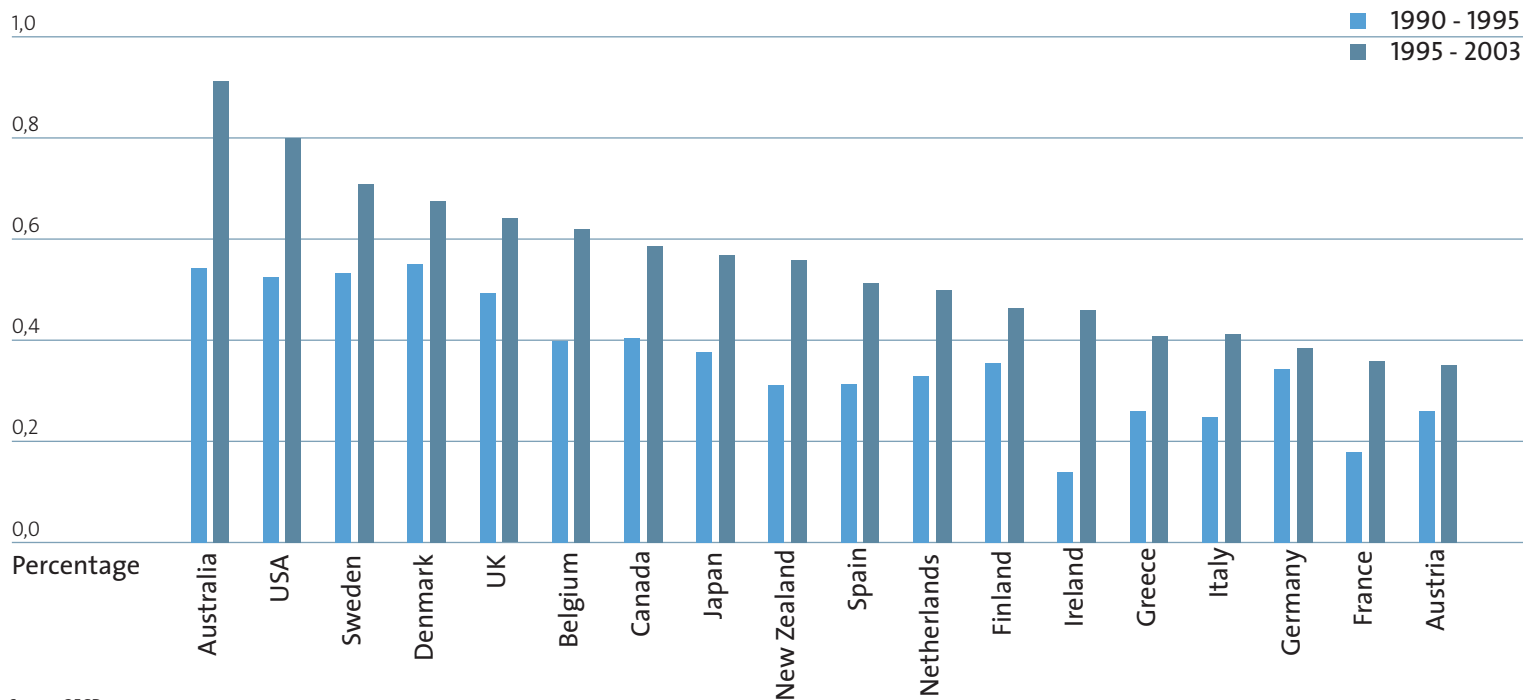
The focus of ICT-related R&D has also shifted from computer hardware towards software, computer and related IT services, web services and digital content. Broadband is an enabler of innovation in these areas and can be expected to drive further innovations in the future, especially in broadband enabled services and digital content. Furthermore, with the diffusion of ICTs throughout the economy, ICT-related R&D is also increasingly carried out in other sectors.

With the diffusion of broadband Internet, people outside the boundaries of traditional institutions and hierarchies can also innovate to produce new goods and services. The role of network users and consumers in the innovation process potentially increases as they more actively contribute to new ideas (user-led innovation, or "the democratisation of innovation", von Hippel, 2005) and collectively develop new products (e.g. Wikipedia, open source software).

The contribution of ICT investment to GDP growth has been quite significant in almost all of the countries of the OECD as shown in figure 2.3, although this impact has been variable. Analysing a long period between 1985 and 2006, several countries, such as Switzerland, Denmark, Germany, Sweden, United Kingdom, France,

and Belgium, showed a contribution from ICT investments greater than 20%, with Ireland the only country with a contribution below 10%. The conclusions are similar if we look at the shorter period from 2001 to 2006, where ICT investment contributed more than 20% to the GDP in over half of the countries analysed.

Figure 2.3 - Contribution of investment in ICT to GDP growth



2.3. ICT Industry Investment

Every year, the European Commission publishes the “*EU Industrial R&D Investment Scoreboard*” report, which analyses both R&D investment as well as the aggregated investment of the companies that allocate the most resources to R&D investment. In total, the figures cover 1,000 companies in the European Union and 1,000 from the rest of the world with the highest investment in R&D.

Using these figures as a starting point, it is possible to analyse the repercussions of the ICT industry on the economy as a

whole in terms of its contribution to investment and R&D, both as a whole and by the different ICT sub sectors.

The companies that make up the ICT industry are investment-intensive and devote a significant part of their resources to investing in both fixed assets and R&D. The amount of this investment varies for the different sectors that make up the industry, distinctively between European companies and companies based in other countries.

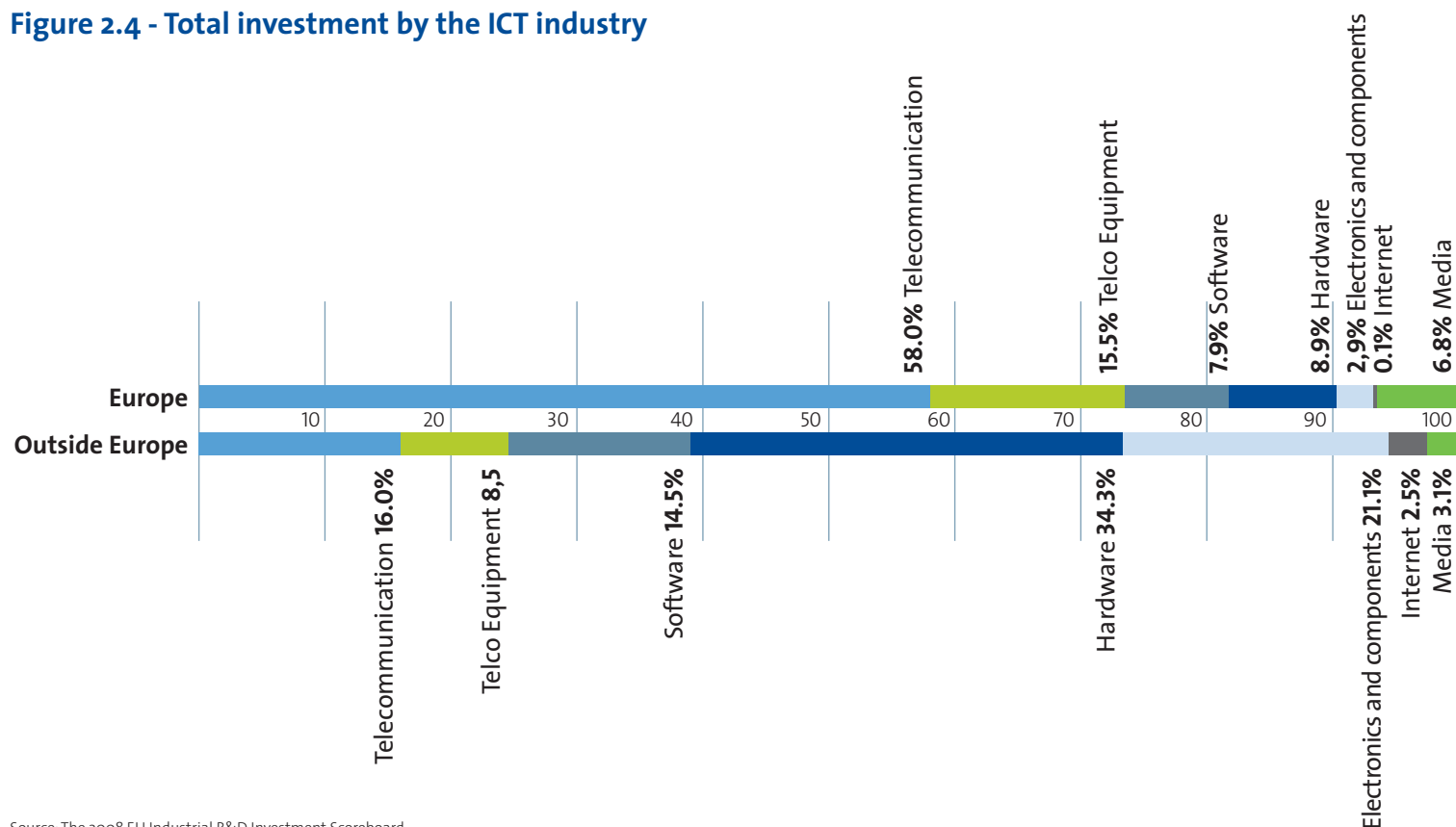
On the whole, the ICT industry in Europe invests just over 12% of its sales, higher than the investment for the sample at 10.5%, but slightly lower than the ICT sector companies from outside the European Union, 14%.

However, the most significant differences are found when the different sectors of the ICT industry are analysed as shown in figure 2.4. More than half of total investment by European ICT companies is made by telecommunications companies, versus 18% of non-European companies. This, despite the fact that the intensity of investment is practically identical in both areas of the world (13% for Europe and 14% for the rest), which gives an idea of the relative importance of the telecommunications sector in the EU.

Also, the telecommunications equipment industry in the European Union accounts for more than 18% of the investment, more than double the figure for non-European countries. Similarly, the media sector is the third of those that have a greater relative weight in terms of investment in Europe than outside of it, despite its higher investment intensity outside of Europe.

More than half of the total investment by European ICT companies is made by telecommunications companies

Figure 2.4 - Total investment by the ICT industry



Source: The 2008 EU Industrial R&D Investment Scoreboard.

2.4. R&D Investment of the ICT Industry

Within investment as a whole, R&D investment generates the greatest positive multiplier effects for the rest of the economy, and consequently draws attention to what different Administrations devote to this type of activity.

In this sense, the ICT industry becomes a key area of investment, since, in the case of Europe, investment in R&D by companies in the sample that belong to this sector account for 23% of the total. This makes it the second most important industry for the European Union, surpassed only by the auto industry. In the case of non-European companies, this participation increases to 37%, making it the leading sector in R&D.

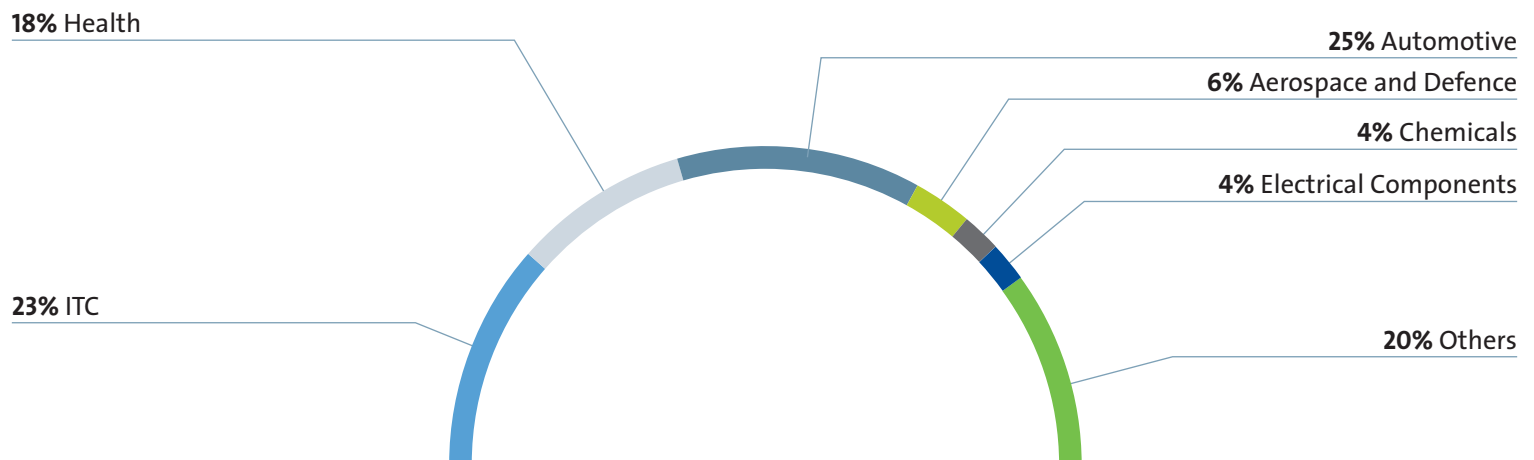
Once more, however, the contribution of these industries differs significantly among the different sub sectors, as well as in regard to the different structure in the European Union and the rest of the world.

Telecommunications equipment companies occupy a leading position in terms of the intensity of their R&D investment, oscillating around 12% in both geographical zones. However, the relative weight in Europe is much greater, since it exceeds 42% of the total R&D investment for the ICT industry, as compared with 13% in other countries.

Likewise, the relative weight of the telecommunications sector differs greatly between Europe and the rest of the world. While non-European countries constitute a relatively small sector, just over 4% of the total ICT investment in R&D, in Europe its contribution is multiplied fourfold, to more than 16%.

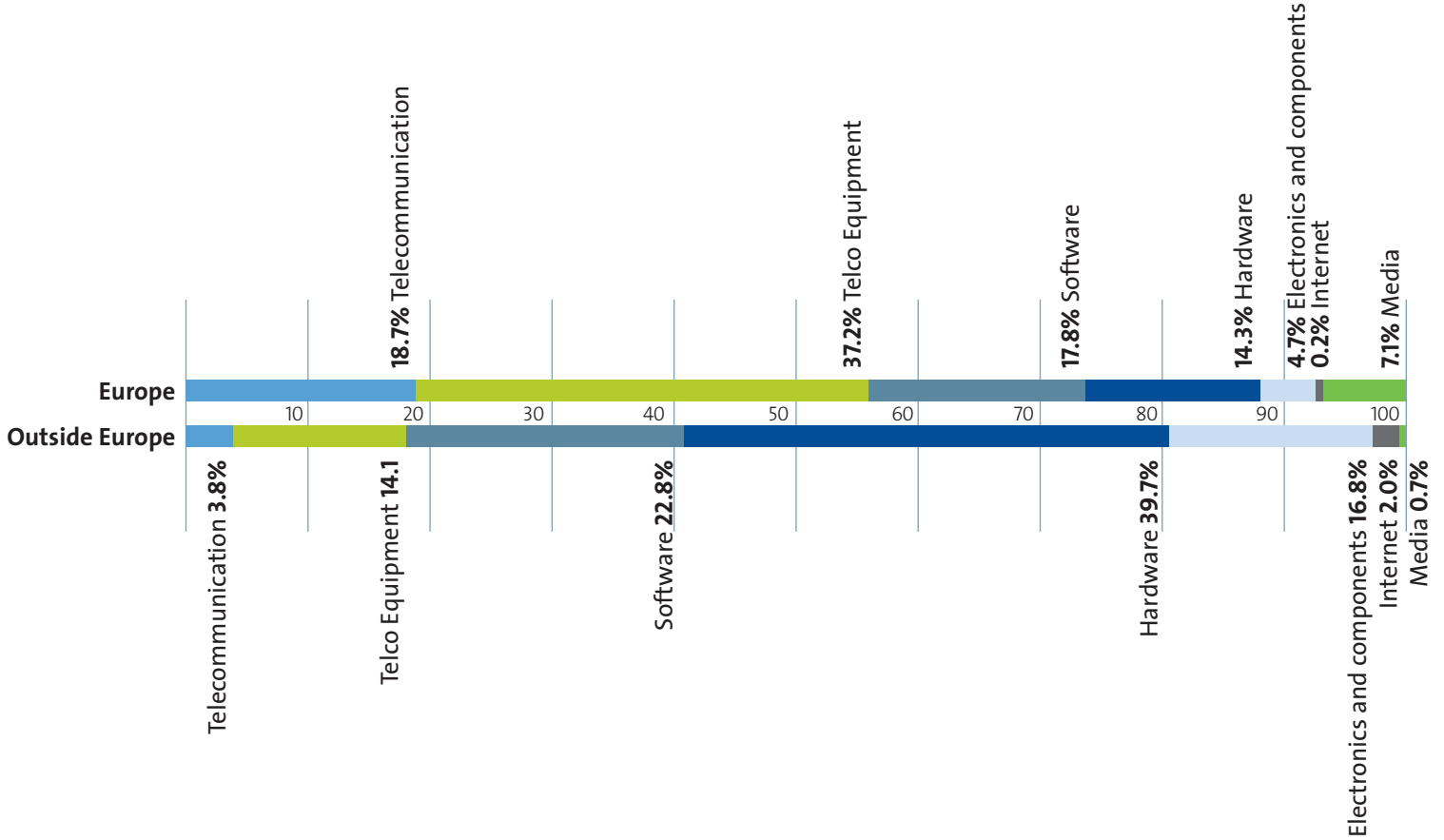
On the other hand figure 2.6 shows that the rest of the sectors, including Software, Hardware, electronics and components, and internet, together account for almost 37% for the European Union, as opposed to 80% outside the EU.

Figure 2.5 - R&D investments of European industry sectors



Telefónica calculation based on The 2008 EU Industrial R&D Investment Scoreboard

Figure 2.6 - R&D investment in the ICT industry



Source: The 2008 EU Industrial R&D Investment Scoreboard.

2.5. Improving ICT outcomes in Europe

The ITU has published an ICT development index that they have applied to 154 countries worldwide. This statistical tool is intended to allow countries to benchmark their information societies globally and regionally. There are two simple points we would wish to use this data to make here. Firstly the model, which produces a score (0-10) for each country looks at three key factors which are weighted 40/40/20:

- ICT readiness – Infrastructure and Access – telephony, internet, computer penetration etc
- ICT Use – intensity - internet users, fixed and mobile broadband users.
- ICT skills – literacy and education

These three areas illustrated in figure 2.7 show the important interrelationship of the factors needed to deliver positive impact and outcomes to the economy and to citizens. It may seem obvious but without pervasive infrastructure there can only be limited use and without skills there can only be limited economic and social value from that use. Whilst operators contribute to all these areas to some degree, their main focus is on infrastructure and access followed by intensity of use.

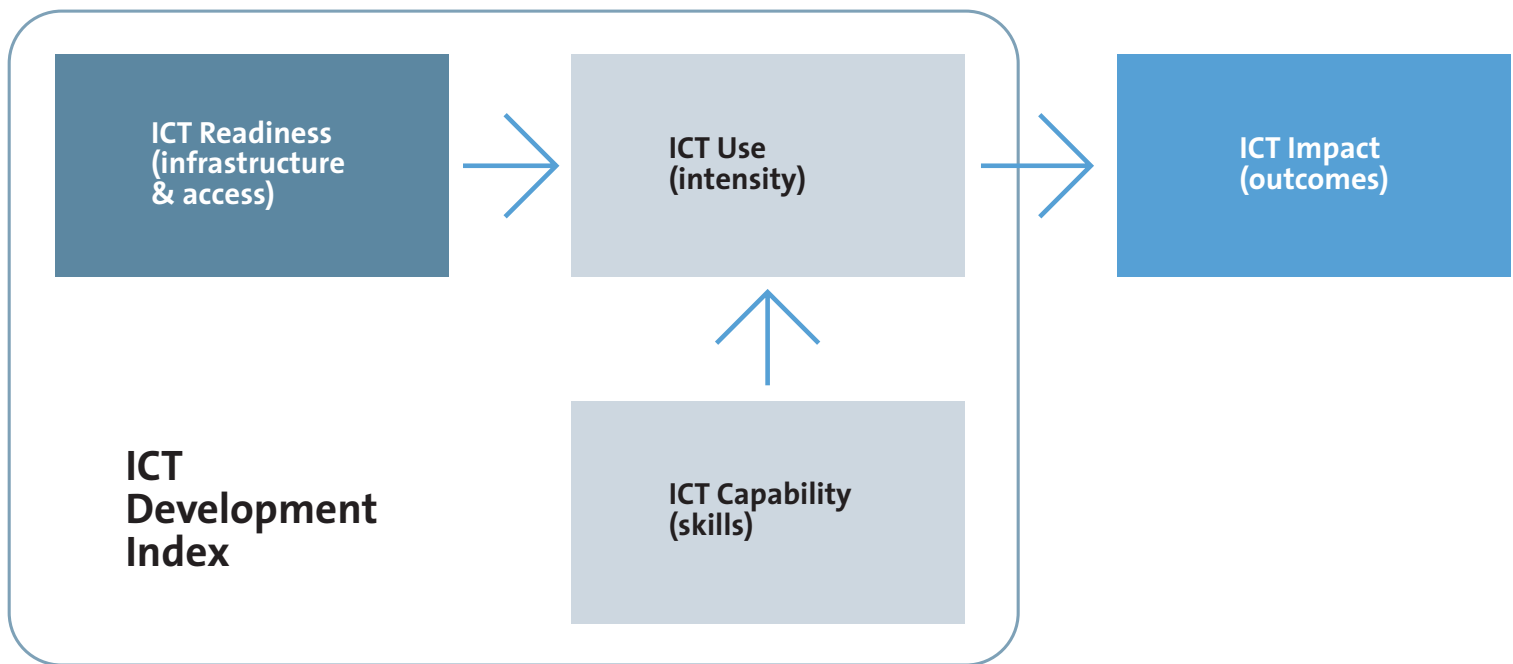
The development of education and skills falls mainly to the member states themselves but is a critical factor in delivering and maximising positive outcomes from ICT.

From the chart in figure 2.8 it can be seen that European countries generally score well. In the full table Korea is the only non European country in the top 10 coming in at number 2. All countries in the sample have significantly improved their overall scores between 2002 and 2007. For Europe the challenge is to keep increasing these scores in all three segments, increasing the benefits to citizens and at the same time reducing the emerging digital divide in society. It is also worth noting that only one of the larger European states appears in the top 10 and that is the UK at number 10.

As Europe debates what should follow the i2010 initiative it will be important to develop a coherent plan that addresses all elements that are required to deliver the benefits of ICT to citizens and who is best placed to provide them. In most areas the private sector is already active in planning infrastructure and promoting use. This should be encouraged by the regulatory environment and not inhibited by untimely and in the view of operators, unjustified interventions that sow uncertainty in the minds of investors.

Without pervasive infrastructure there can only be limited use of ICT and without appropriate skills there can only be limited economic and social value from that use.

Figure 2.7 - ICT Development Index



Source: The 2009 ICT Development Index- ITU

2.6. EU consultation and debate on post 2010 strategy for Europe

The Commission has begun to set the groundwork for a debate on the post 2010 environment in Europe and has put forward its views on possible approaches. In its July communication the Commission proposes three priorities for Europe's information society and media policies:

- i) the completion of a Single European Information Space which promotes an open and competitive internal market for information society and media;
- ii) strengthening Innovation and Investment in ICT research to promote growth and more and better jobs;
- iii) achieving an Inclusive European Information Society that promotes growth and jobs in a manner that is consistent with sustainable development and that prioritises better public services and quality of life.

This document is not a specific response to the questions raised by that consultation (that is the subject of a separate submission by Telefónica) although it is intended to contribute to the wider debate.

Telefónica generally agrees with the three priorities but believes that these already contain the possible seeds of conflict when it comes to practical implementation. As discussed in the previous

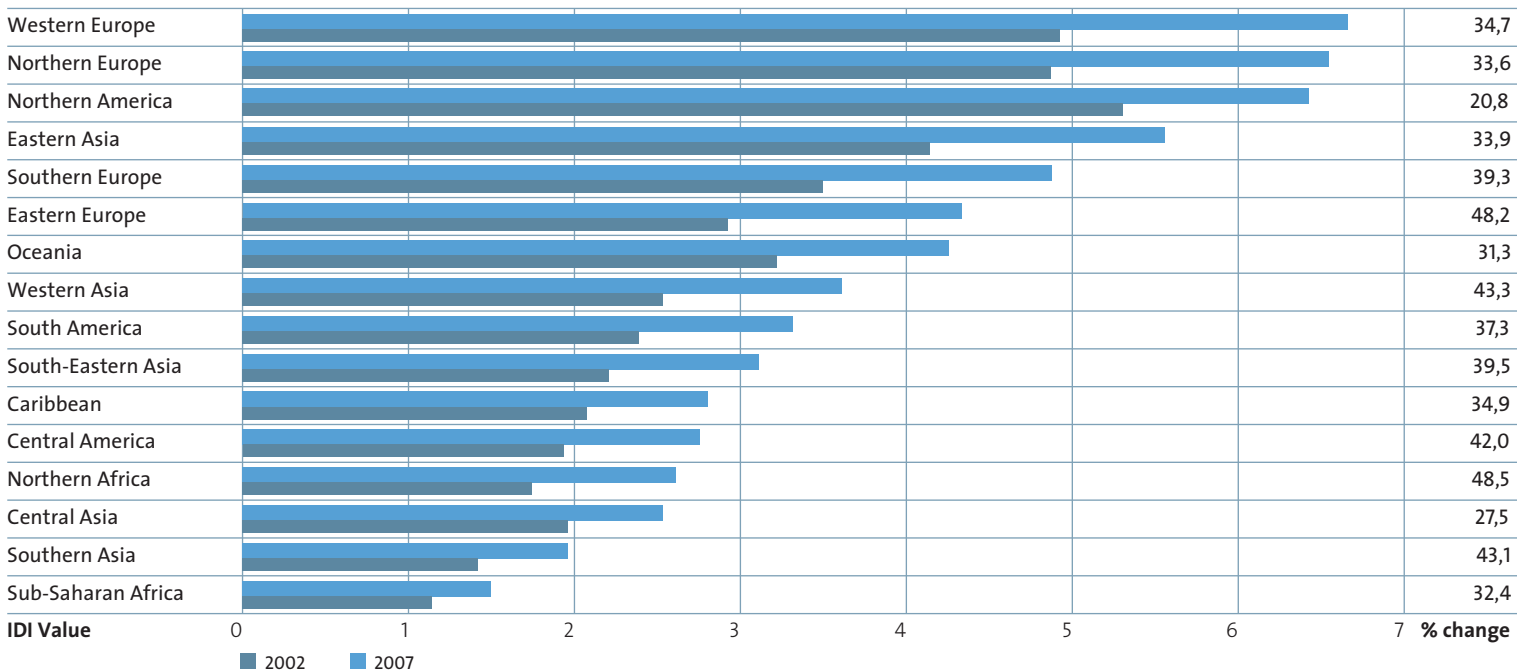
section it is important to keep a continuous balance between infrastructure, use and capability when it comes to deriving the benefits of ICT. However there is a logical progression between these three aspects and the need to create the confidence for long term investment is the essential first step when it comes to new fixed and mobile network investment.

Post 2010

Telefónica believe that the best economic and social outcomes occur in a fully functioning open and competitive marketplace. Like all broad and complex markets the European ICT market is not perfect but it has either achieved a high level of competitiveness or it is on its way to doing that. In developing a strategy for post 2010 it is important to acknowledge this and address those issues that are both important and will respond to intervention. It is important to let markets work and this means accepting both market entry and market exit (and or consolidation).

Addressing confidence is probably the major issue going forward. This means confidence by investors to make long term commitments, confidence by governments to move more strongly to e-government and confidence by citizens to use the digital services because they have the knowledge and skills to reap the benefits.

Figure 2.8 - ICT Development Index (IDI) by geographic region



Source: The 2009 ICT Development Index- ITU

Long term sustainable economic improvement requires an economy that promotes both investment and innovation. Innovation is the key driver of productivity and can take the form of new or improved products and services, processes and technologies, forms of organisation and markets. This is the true economic definition of innovation and it is important to understand that it is not simply limited to sexy new products and services. The benefits of innovation to economies are therefore much more significant than those realised by simply selling a new consumer product. Innovative economies are knowledge creating and knowledge sharing economies that continuously improve productivity.

There is a relationship between innovation and competition but that relationship is ambiguous. It is therefore important not to simply rely on competition alone to creating the most effective innovative environment. There has been a tendency in Europe by regulators and policy makers to focus strongly on ensuring competition and assuming that innovation will follow. This is not necessarily the case and in order to have a truly innovative economy we need to look at all the elements that make up the ICT ecosystem.

Regulators and policy makers need to look beyond straightforward competition and understand how to make the whole ICT ecosystem more effective if we are to achieve the best outcomes for our citizens.

2.7. Market and Sector Transformation

The way in which people communicate is shifting from point-to-point and two-way conversations, to many-to-many, collaborative communications. This shift is fundamentally changing the way people and businesses around the world communicate, share information, and drive progress. Users are adopting new services and communication habits very quickly and this trend will only intensify in the future. This becomes clear by just looking at a few of the more widespread recent examples: social networking, personalised television services, blogs or microblogs, etc.

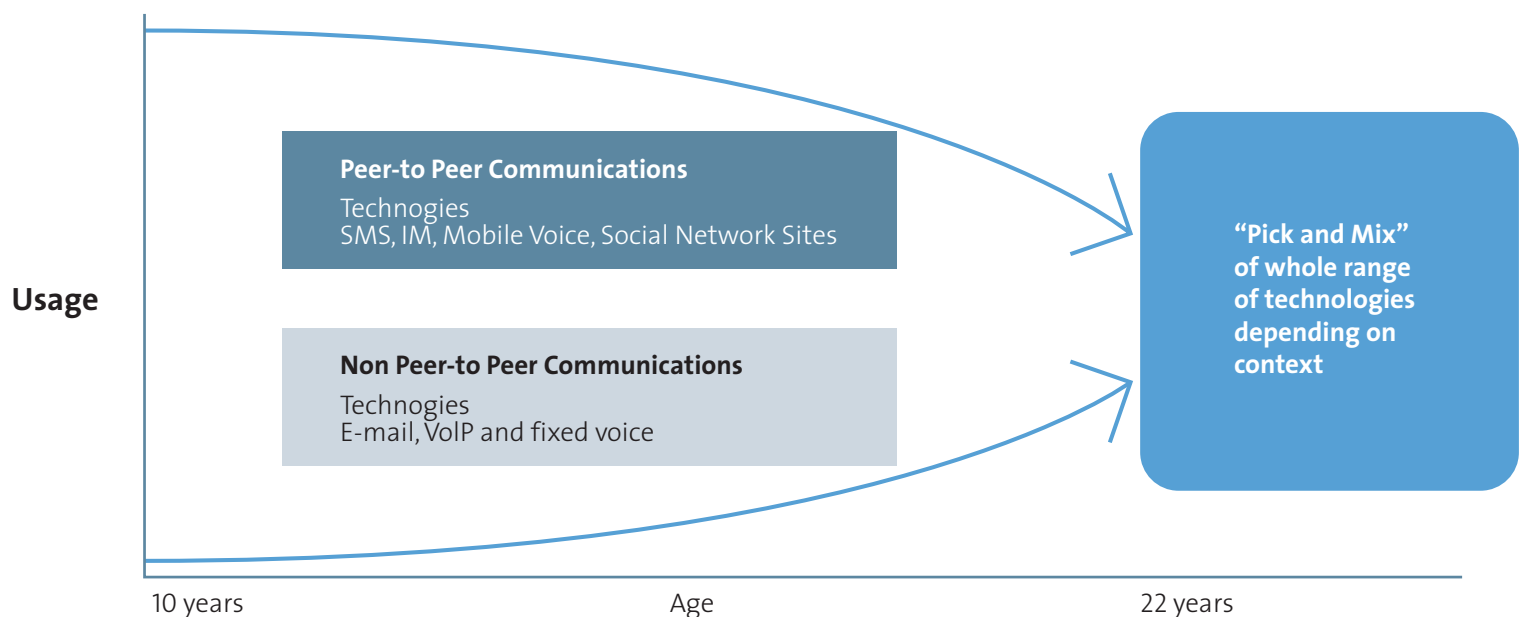
It is clear that young people adopt one type of communication amongst their peers and another with those outside their peer group (figure 2.9). However what we will therefore end up with is a society where people are comfortable with a whole range of communication tools and use them much more freely depending on the context they are in. This will lead to

a far richer communication experience and more effective knowledge working than we see today.

For operators this means an ever more difficult to predict future and the need to plan to support a multiplicity of services each with their own network requirements and costs. IP networks will need to support an ever increasing service mix with the associated demands on service quality and performance. This will provide opportunities for service differentiation at the network level and should provide incentives for competition at the basic level of infrastructure.

The predicted growth in IP traffic in both core and access networks is shown in figure 2.10. This however illustrates that it may well be possible to take a view of demand at the macro level but it is much more difficult when it comes to planning networks at a local level when operators have to choose

Figure 2.9 – Evolving use of communications technologies amongst young people



Source: Gartner – modified by Telefónica

between a range of alternative technologies with different costs and capabilities.

In addition to these new user habits, digital devices are increasingly powerful and the volume of digital content is growing constantly. Even conservative estimates regarding digital content indicate that its volume will increase tenfold over the next 5 years. If, on top of this, we take into account the advances in storage technology and falling prices, a clear scenario is developing in which the need for transmitting, distributing, commercialising, and enjoying all of this digital content means that telecommunications networks will play a pivotal role. This is both in terms of delivering social welfare and economic prosperity.

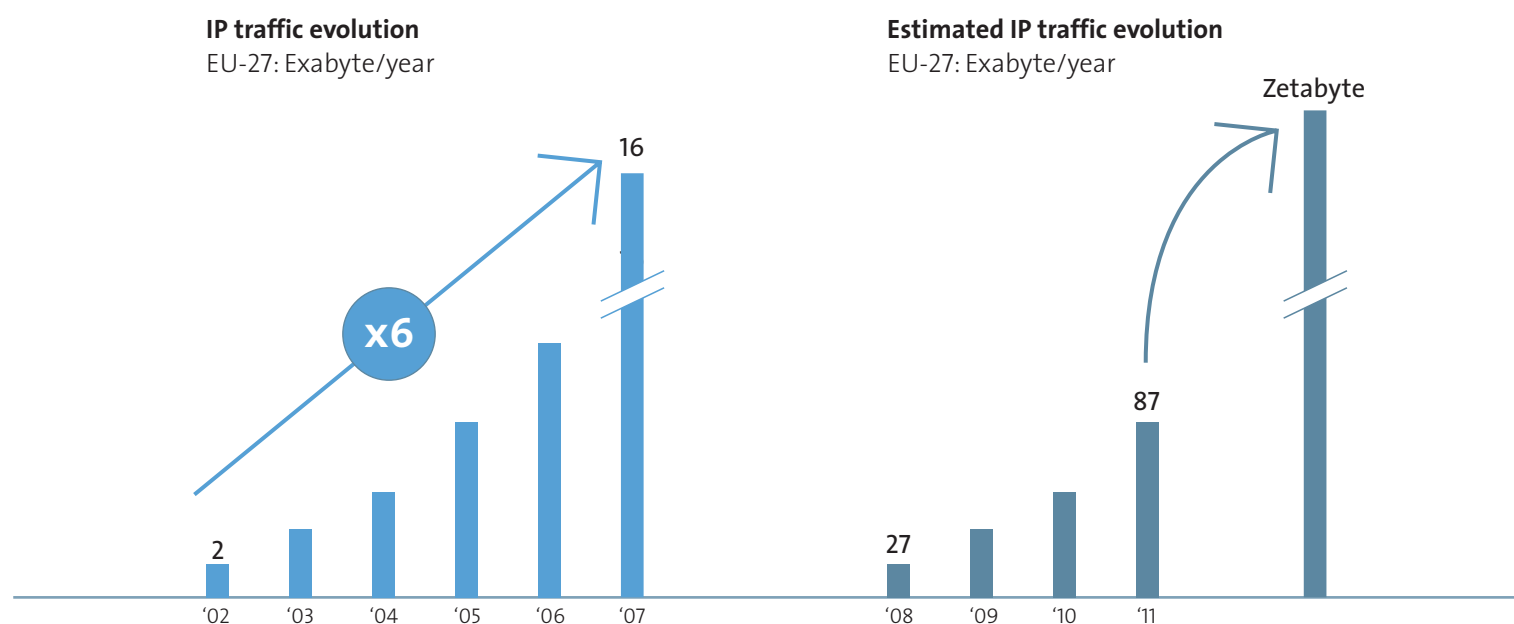
In this setting, it is easy to imagine (although more difficult to quantify) the world of new services that will appear when the

capabilities of the new networks reach critical mass, and what these services would mean for both the competitiveness of companies and the welfare of citizens.

The next generation networks will provide the platform for an information society that provides e-healthcare, e-government, digital education, digital leisure, intelligent transportation and many other services not yet envisaged.

Alongside this a key new technology, cloud computing, will create a move towards increasing use of network based facilities. High bandwidth networks provide an essential platform for this technology that will enable new business models, based on renting computing capability and applications to develop. This will allow companies and individuals to save on capital expenditure by taking advantage of different business models such as lower risk

Figure 2.10 - Estimated Evolution of IP Traffic in the EU-27



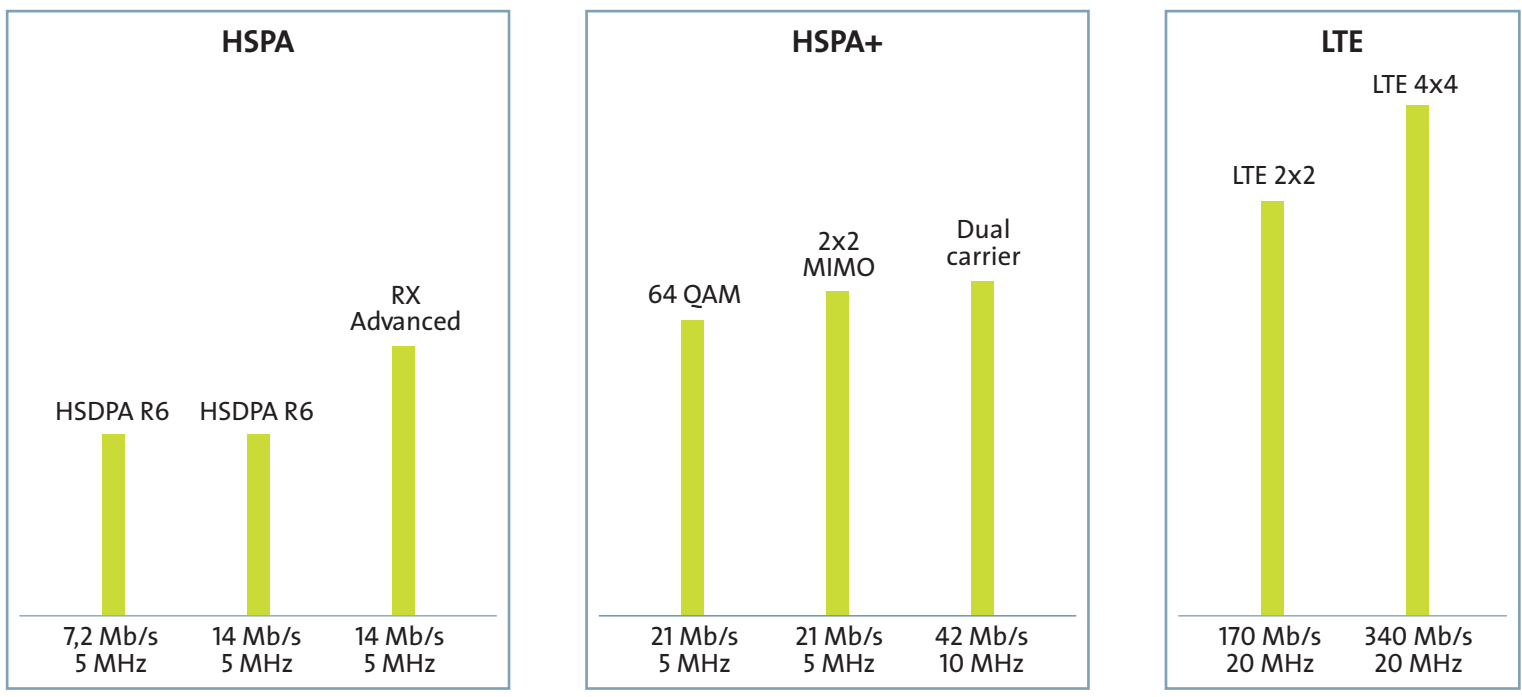
Source: Cisco, Telefónica

rental options that will help them improve both efficiency and productivity.

The evolution of mobile technology to 4th generation cellular will lead to much higher potential speeds and in some circumstances equivalent to other high speed

fixed technologies as shown in figure 2.11. The economics of mobile are highly dependant on spectrum cost and availability and it is important that the spectrum in the Digital Dividend bands with the best propagation characteristics is made available as soon as practical in line with demand.

Figure 2.11 - Evolution of mobile broadband



Source: Telefonica

The move into 3G technology (HSPA and HSPA+) is not a simple single step and neither is the move to 4G (LTE). There are many technology choices and options on the way which have different cost and quality attributes.

These new technologies present operators with an increasing number of options in both fixed and mobile. There is no simple path that can be applied to every market, difficult choices are required about when and what to invest in. Investing in the wrong generation of equipment is difficult to recover from in today's competitive markets. A few years ago many operators

saw a straightforward technology path that upgraded core voice networks to IP technology and gradually improved data access. Today many operators have reversed that view with the focus on broadband access and the timescale for upgrading core networks more piecemeal. These changes are in response to market demand and an evolving understanding of what customers value.

| 2.8. Improving ICT outcomes in Europe

Whilst an efficient and competitive economy is essential the ICT sector also brings about many more opportunities to improve the lives of citizens. Its role in addressing social exclusion, making public services more effective and reducing the growth in energy consumption will prove as important for Europe's long term future.

ICTs make an extensive real and potential contribution to individual welfare and quality of life and in particular help to address the predicted demographic changes to the EU population. The following section highlights a number of the key areas that Telefónica believes will be essential to improving the lives of citizens in Europe in the coming decades.

Healthcare services - eHealth

In Europe the increase in life-expectancy – two decades over the last fifty years – has resulted in many diseases – being thanks to medical science, no longer necessarily fatal and irreversible. Coupled with this, major socio-economic progress has resulted in constantly improving expectations about quality of life in terms of health.

The resulting burgeoning healthcare requirements of the population will intensify even more in the coming years. Not only in terms of therapeutic services and care, but also in other associated aspects, which range from diagnosis to tracking of chronic diseases, including the important area of dependency and the desire to live independently.

Consequently, the network of healthcare facilities, centres and hospitals are faced with a growing demand that has two increasingly evident constraints: budgetary limits and the availability of professionals and carers.

Services such as remote diagnosis, online monitoring of treatments, the provision of essential services to the housebound, monitoring, control, etc. are becoming available, although they have yet to have significant impact. This is an area where ICT skills must be in place to complement the availability of infrastructure.

On the other hand, in addition to the physical pressures on hospitals, in a growing number of cases citizens are showing a clear preference for substituting hospital stays – when not absolutely essential – with treatment at home. From the patients point of view they expect a similar level of care and attention that they would have in a hospital. These are exactly the areas where technology can make a very significant contribution.

Education and training services - eLearning

In the area of education the future role of ICTs is no less important. The importance of ICT goes beyond primary and secondary learning and training with its guided instruction and classroom education. Today most, if not all disciplines require continuous updating of knowledge. That has to take place in an environment compatible with professional roles and the limitations imposed by modern work schedules. It is clear that many of these limitations can be overcome thanks to ICT.

From the start of the schooling process to university and further education, new technologies can contribute to both methods as well as practices, but above all, can help facilitate

additional knowledge and skills associated with the subjects studied and more importantly, keeping up to date when formal education has finished.

Among other things, these new technologies make it possible to remove physical location as a barrier to learning for large segments of society. No less importantly, they give the teaching community access to the latest teaching practices and methods, aimed at constantly improving their work, regardless of where they exercise their profession. Also, thanks to these technologies, the use of advanced teaching tools is no longer restricted to a limited number of centres.

Like many things technology has positive and negative aspects. Young people today are often more familiar with technology than their parents and teachers but what they are often not aware of, are the risks that they can run by certain behaviours and actions.

Telefónica believes that we have a responsibility to help provide information to parents, teachers and young people on the best ways to keep safe whilst using the wide range of communication services now available.

Security, home automation and energy saving services - eSecurity

A third area is security: here, the applications and tools commonly grouped under the heading of domotics play a more than significant role; in other words, the applications and tools that are designed to manage and control the home. This is a group of functions that undoubtedly will move far beyond the more limited (but useful) concept of basic automation of lighting and heating control.

An area that is currently in the forefront is the need to promote energy savings, so it is important to mention the wide range of opportunities that domotics could potentially have in the advanced management of household areas such as lighting, heating and air conditioning, waste, food conservation, etc. The ability to control the domestic environment and achieve it from any location should become a critical part of future energy reduction plans and linked to moves to Smart Grids.

Leisure and entertainment services - eInfortainment

Although it may initially sound less important than the previous areas in terms of personal well being, leisure and entertainment is an area that immediately benefits from better bandwidth performance and ubiquitous coverage. Citizens are able to access services such as legal downloads of digital content, video on-demand, or high-definition video. Technology has empowered individuals to produce and upload and share their own user generated content. The increasing linking of social networking services with each other is part of the phenomenon of the connected individual who demands high bandwidth connectivity 24/7.

Provision of entertainment is one area that has evolved significantly in recent years. A trend that is becoming more and more established, is the transition from consumption of entertainment content that is by and large collective, often in a family unit, to consumption that is more individual and that responds to a desire for increasing personalisation and interaction. Expressed somewhat flexibly: the desire to choose when, how, where, and what each person wants to see, instead of passively viewing whatever is determined by a broadcaster. This requires advances in interactive systems and processes and increased and more granular control of what were broadcasting services. Again, increased bandwidth is essential to make this possible with the necessary levels of quality and reliability.

Delivery of public services - eGovernment

Growing pressure on the public sector for an efficient delivery of public services and the increasing budgetary constraints to which it is subject to, suggests that – as has occurred in the private sector – ICTs have an important role to play in the modernisation of the way government services are delivered to citizens.

Currently, public purchasing via conventional means is equivalent to 16% of EU GDP and it is estimated that the widespread implementation of electronic billing mechanisms can lead to costs savings of up to 300 billion euros in the EU.

Digital Inclusion

By the year 2020, 1 in 4 Europeans are expected to be over 65 years of age, and by the year 2050 it is estimated that there will be over 2 billion people over the age of 60 worldwide. At current rates, it is expected that within a generation the effects of this growing dependency ratio will become increasingly felt.

ICTs can play a crucial role in helping our societies address the challenges posed by these changes and may be essential in helping those groups at risk of social exclusion (e.g. retired people, people living alone, etc.).

| 2.9. Content and Media

Much of the drive for higher bandwidth is driven by the demand from customers to deliver content and in particular video online. As has been pointed out this does not mean that we should consider broadband as primarily television with e-mail, it is far more than that. We are currently seeing a struggle for the development of new business models in the content industry alongside a strong

desire to protect the old ones and their associated revenue streams. In the coming years there will be much to do in terms of fostering the availability and development of online content markets. Service providers should not be turned into network policemen for parts of the content industry in the defence of customer unfriendly business models.

It is critical that the search for viable future business models continues. We see a reduction in the barriers to legitimate access to content delivery across the whole of Europe. The ability to be able to negotiate single content deals for Europe will be an essential part of re-invigorating the delivery of legitimate content through new channels and devices.

2.10. Climate Change

ICT and within that, modern communication networks, are vital to enabling economies and especially developed economies in delivering major reductions in energy usage. Although ICT contributes approximately 2.5% to greenhouse gas (GHG) emissions, they have an enormous potential to reduce remaining emissions. Despite this carbon footprint and energy consumption, ICTs are considered to be a key player in the efforts to tackle climate change in cities and strategic sectors, by the introduction and development of energy-efficient devices, applications and networks.

According to the ITU, “ICTs have the potential to assist in finding a solution to reducing the remaining 97.5 per cent of global emissions from other sectors of the economy, including cities” The Smart 2020 report states that new ICT solutions present an opportunity to reduce five times the sectors own emissions. This is equivalent to 7.8 GTn CO₂, or 15% of the total World emissions predicted by 2020³.

In particular, it is estimated that ICT could reduce the worldwide emissions predicted for 2020 by up to 15%.

Cities in particular seek for sustainability and climate change abatement within an urban and local approach. Especially through the development of energy efficiency in households, transport and industries. ICTs can be enablers to achieve these goals.

The following are examples of ways in which the ICT industry can make real contributions to reducing society’s impact on the climate. They are based on a wide range of initiatives Telefónica has implemented or is in the process of implementing.

Reducing the internal carbon footprint

ICT companies must promote internal energy efficiency programs focused on employees and processes. In the particular case of Telefónica, we have developed several energy efficiency projects; this energy reduction is delivered through best practices applied to equipment, cooling, heating, lighting, etc. It also extends to green self-generation. In 2008 over thirty initiatives had been tested and assessed as rapidly implementable.

Telefónica believes that it is also important to make energy efficiency a visible part of the purchasing processes for ICT companies. Attributes that should be taken into consideration include: average energy consumption, both in stand-by and in fully operational modes. This has the objective of extending the energy efficiency culture in the supply chain of the company.

In 2008, Telefónica committed to reducing its consumption of network electricity by 30% per equivalent access and its office electricity consumption by 10% per employee by 2015.

Note: Equivalent Accesses: number of fixed, mobile, broadband and TV accesses provided by Telefónica, weighted by their relative power consumption in our networks. This is considered the “unit of product” of Telefónica.

Providing sustainable solutions that help other sectors be more efficient

There are many practical examples of the opportunities and benefits that the ICT sector provides for carbon

reduction to other sectors. The most obvious examples are the use of sophisticated telecommunication services such as videoconferencing and tele-presence to reduce travel requirements and CO₂ emissions. Virtual services such as E-government, e-health, or e-commerce will optimize the use of energy and materials, and optimize time consumption in cities.

Another example where ICTs have been extensively used for reducing energy consumption and CO₂ emissions is in the use of intelligent transport systems (ITS). Satellite navigation systems can find the best routes, saving both time and fuel. In terms of emissions, the implementation of energy efficiency activities in the transport sector, could lead on emissions reductions of 1,52 GtCO₂ by 2020 equivalent to 280 billion euros savings⁴. Other relevant services are the improvement of energy efficiency in power transmission and distribution networks (smart grids), buildings (smart buildings) and factories. There is huge potential for energy savings to be made

when it comes to the design of buildings. By using ICT, lighting systems can be managed so that they are not switched on when there is nobody in a room. Heating and ventilation can be controlled in the same way, as well as the power for computers themselves.

Finally, according to the IEA, electricity consumption from residential information and communications technologies and consumer electronics devices could be cut by more than half through the use of the best available technology and processes which are currently available. In this sense, one of the areas of increasing energy consumption is the production and use of battery chargers. The mobile industry has been working on this issue for some time and this has led to the introduction of low consumption universal chargers. Telefónica in the UK have introduced a Universal Charger, which has already reached several thousand customers in the United Kingdom, with an estimated energy saving per individual of 2.8 KWh per year.

| 2.11. The Single Market in Europe

The single market has been and will continue to be the main stimulus to economic development in the EU. The ICT sector has significantly benefited in the reduction of barriers to cross border trade and a single Europe wide competition law and regulatory framework for communications. There remains a constant tension between developing a consistent approach to regulation and recognising the distinctive differences in markets when they exist. The recent review of the regulatory framework contains new mechanisms for addressing this problem but we have yet to see how effective they may or may not be in practice.

There has been a constant desire from the Commission to stimulate the development of EU wide telecoms services and “services without borders” to quote Commissioner Reding. Whilst these may indeed arise in the fullness of time the telecommunications business remains essentially a geographically defined business. Trying to force this type of service into existence would most likely lead to severe market distortions. International mobile roaming which is

often referenced as a Europe wide service is in fact a domestic service which is extended by agreements with other operators. Any true Europe wide services would require harmonisation of tax and consumer legislation that is far beyond the powers of the industry and probably the Commission.

For the foreseeable future we would expect, like all maturing industries, an increase in consolidation across European footprints that will lead to more consistent service provision and availability. This can be observed outside Europe where consolidation has either helped more uniform roaming services in East Africa or by its absence hindered them as in Latin America.

The explosion in the growth of online business and the introduction of user friendly mobile devices like the iPhone, that make accessing services from anywhere easy, will define the next stage of the single market. It is these new products that will facilitate market demand for cross border services rather than pressure from regulators.

Far more important than this issue is the facilitation of Europe wide services that enable business to be transacted across borders, consistent access to content and efficient and trusted payment mechanisms.

3. Defining a new strategy for the sector

The beginning of a new European Commission term and the new legislature of the European Parliament offer us a rare opportunity to assess progress made over the last five years and to – if and where necessary – take a fresh look at the policy goals and alternatives for the coming years.

Perhaps now more than ever Europe needs to make a decisive step forward towards a truly comprehensive telecommunications policy that builds on the liberalisation during the 90s, the stabilisation during this decade and addresses the complex issues arising from the deployment of new communications networks and technologies expected during the next decade.

As described in the previous section, the European communications industry faces a number of key challenges at a time of profound technological change in an increasingly competitive and globalised market place.

Crucial to Europe's ability to overcome current economic difficulties and to, at the same time, capitalise on the enormous potential of ICTs will be the deployment of a world-class communications infrastructure. This will require the modernisation of networks to deliver next generation internet based services when they require

replacement of both the core and access parts of their networks. The important investment decisions that will have to be made in order to enable these deployments contain more risk than in the past, not only because of the substantial monetary commitment but also because market players face a genuine choice of technologies, long payback times and a degree of uncertainty regarding customer demand associated with highly innovative markets.

In addition to infrastructure, Europe will also need to create a leading digital environment for the creation of a rich content and online services (applications) industry. For these reasons, the debate on a new agenda that encompasses the necessary policies and regulation for Europe to successfully meet these challenges must begin now. The following section outlines some of the key themes that Telefónica would wish this Agenda to address.

The sector must adopt an approach that is different from the one that it has traditionally maintained, in a more proactive and less reactive – defensive – sense, creating a system of dialogue, cooperation, and exchange that is fluid enough to help keep industry players and European companies as a whole from missing out on the opportunity of eventually realizing the goals proclaimed in 2000 at the European Council in Lisbon: that is to be the most advanced knowledge based economy in the world.

3.1. Promote Growth Based on ICT driven Innovation

As discussed in the previous chapter, ICTs are probably the single most important enablers of economic growth, productivity and welfare enhancement to have appeared over the last 60 years. A comprehensive approach to understanding how Europe can derive the best benefits from ICTs requires the proper consideration of three essential elements that are critical in maximising their potential:

- ICT readiness – Infrastructure and Access – telephony, internet, computer penetration etc
- ICT Use – intensity - internet users, fixed and mobile broadband users.
- ICT skills – literacy and education

The way these three factors interact determines the extent to which European citizens can maximise the beneficial long

term impact derived from the resources that are applied. It is the need to ensure that these three elements have appropriate resources applied to them through providing the right incentives to both public and private players that is the key message of this document. Maintaining focus over an extended period will be critical and policies should be shaped to deliver this outcome and avoid pursuing 2nd level objectives that do not align with this.

Europe's telecommunications operators play a significant part in ensuring the availability of the first element (ICT readiness), and the new investments in next generation networks - especially access - are the foundation on which the whole ICT ecosystem is built. As can be seen from the discussion in chapter 2, operators' face an increasingly challenging market and technological environment. This makes it difficult to quantify the risks in demand, costs and regulatory intervention.

The goal is the maximisation of beneficial long term impact on citizens for the optimal level of inputs. Policies should be shaped to deliver this outcome, making sure that all the three aspects of delivering benefits to European citizens keep in step, namely readiness, use and skills.

3.2. Placing bets on the deployment of new networks

The deployment of new networks – fixed and mobile – capable of supporting growing bandwidth requirements is the base foundation of effective ICT delivery and will be crucial for Europe if it is to achieve the world-class ICT infrastructure needed to underpin its ambitions of becoming the leading knowledge-based economy in the world.

Next generation access networks have become a much-debated topic in business and policy circles over recent years as operators have begun to outline their plans for the upgrade and deployment of new networks. The current options in terms of access technologies (fibre, LTE, DOCSIS 3.0, etc.) look particularly promising in terms of fostering innovation and competitive differentiation.

However, although the benefits of next generation networks are increasingly understood and shared by market players, investors and policy-makers alike, the current economic crisis is leading to

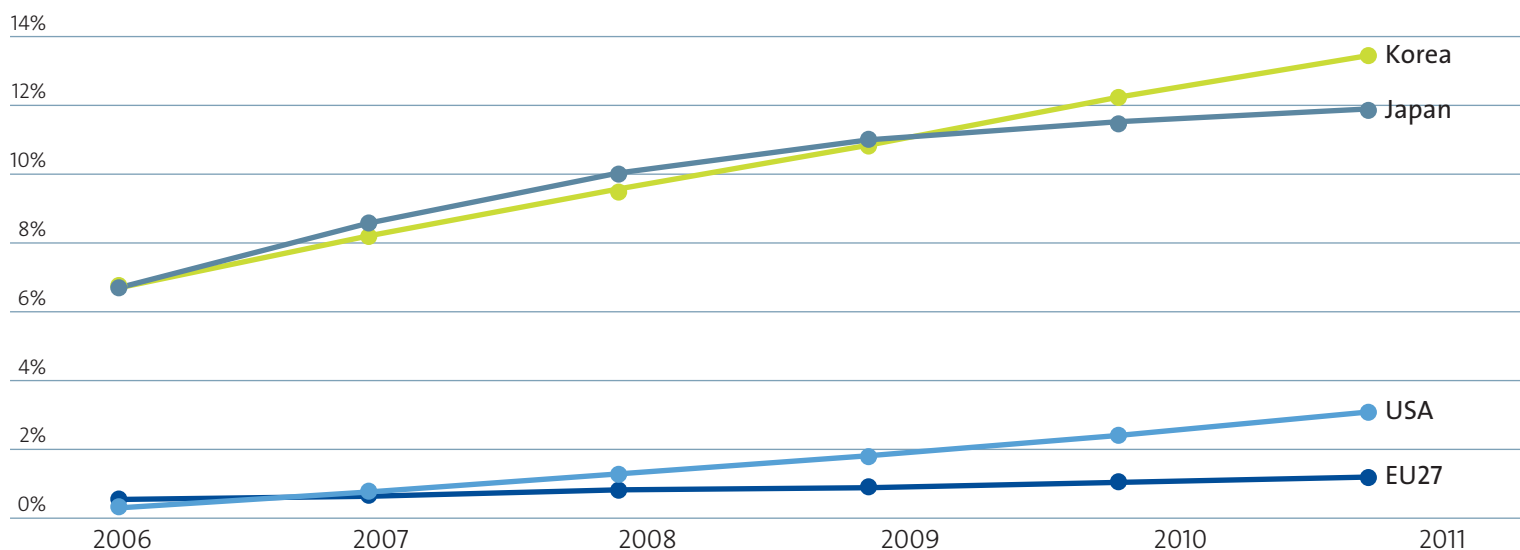
a strong re-consideration of investment plans that will now alter the extent and timing of these deployments.

Whether Europe falls behind in the implementation and use of new technologies and the tools and applications that are generated by them, will largely depend on this deployment. The impact of this delay may lead to Europe losing competitiveness in relation to the other regions (figure 3.1), undermining other European policies (e.g. other Lisbon /post-Lisbon goals).

As previously said, times of crisis are also times of opportunity. This is why; if Europe is to achieve the goal of having a world-class ICT infrastructure, now is the time to analyse and decide when and how these deployments should take place. Regulatory policy is a key factor in this decision, and Telefónica believes a fresh regulatory approach that enables Europe to achieve its potential in terms of new network deployment should be an integral part of a new policy Agenda .

Figure 3.1 - Estimated deployment of FTTx

FTTx rollout estimates (%)



Source: based on data from Informa

New networks are necessary to facilitate new services and maintain the quality of existing ones whilst at the same time reducing access costs and enabling increased consumption by companies and citizens.

New networks will require very sizable investments, in a situation with rapid technological evolution, a high degree of uncertainty in regard to demand and the value attributed to the new services by the users, and consequently, the expected return on the investments. It is logical to assume that this will require, on one hand, the application of economies of

scale, and on the other, reasonable expectations of recovery and profitability.

Competition at the lowest practical level in infrastructure remains the most effective way of delivering the maximum welfare benefits. When rolling out new networks this can take new forms and the application of geographical segmentation, a historically rarely applied regulatory approach in markets, is an example of new ways of improving the incentives for the investment in and deployment of new networks.

| 3.3. Effective competition between platforms

Since liberalisation, the “platform competition” model - whereby several communications infrastructures with either the same or different technologies directly compete to deliver services - has been widely acknowledged to provide the greatest degree of choice, differentiation and value for consumers.

The ideal market scenario is one of maximum rivalry between efficient platforms with a range of technologies. These platforms would be deployed on a number of infrastructures that would allow operators to achieve optimal efficiency and develop broad competition in services.

In recent years, the European communications sector has seen a growth in investment across the industry. Sector specific, or ex ante, regulation has played a key role in enabling new entrants to access the networks of existing market players and allowed them to develop their business cases by combining their investments plans with a host of regulated services. This has enabled the emergence of a certain degree of new network infrastructures on behalf of new market players, resulting in increasing choice and competition of communications services to the benefit of consumers.

The apparent current fixation on a few key measures such as the number of MVNO's, simple broadband penetration levels and market entry in mobile do not fit well with the true competitive state of the market. The classic regulators response to the question of how many operators is appropriate in a given market, which has usually been $N + 1$, where N is the current number of operators, has clearly had its day. A competitive market is not simply judged by the number of competitors, that is a factor but not the factor. With markets maturing, a more sceptical approach to investment proposals and the ever threat of new substitutes; severely market distorting incentives would in most cases be required to encourage significant new entrants. That is clearly not to say there will not be new entrants or that some operators will not exit the market. It simply emphasises that new entrants are not a simple measure of the competitive nature of the market. Mature markets can be very competitive, the very situations that will make a possible new entrant think carefully before entering, perhaps in ways that they did not at the beginning of this decade.

It is also important to remember the ambiguous relationship between competition and innovation. Regulators and policy makers should therefore not unthinkingly pursue measures to increase competition on the assumption that it will naturally lead to more and better innovation.

| 3.4. Networks open to commercialisation of services by third parties

There seems to be much current discussion about “openness” but this is usually accompanied by a lack of definition about what is really meant. It has often been suggested that network operators are somehow against openness and seek to capriciously restrict or control traffic over their networks. This is not the case. A distinction must be made between historical networks where investment was often directed (and funded) by governments and new network investment such as mobile and NGA where investors have a choice where to place their money and will only do so if they are confident they will get an adequate return. Operators therefore need to be able to negotiate commercial arrangements with other players in the value chain and to offer quality and price trade offs like any other market. It is not in an operator’s interest to build networks that are not attractive to users, application providers and content owners.

The model of competition between platforms should lead to a competitive situation where network owners have the incentive to facilitate the commercialisation of services by third parties to maximise the efficiency of their infrastructure (i.e. by maximising the traffic across networks). However, the development and building of these intelligent and innovative, ‘next generation’, networks will require important upfront investments and those operators who chose to make the monetary commitment in building these networks will require a fair return on these investments. Therefore, the creation of a virtuous cycle of investment and innovation by different players across the sector will require a re-balancing of current policy on access to telecommunications and ICT networks. This should move towards a more equitable and open approach that gives appropriate access to new facilities on a fair commercial basis and certainly not on a regulated long run or marginal cost basis that has been applied to historical assets.

| 3.5. Appropriate recognition of changing markets

Broadband access markets will be increasingly complex, and competition will be fierce among fixed telecom operators, mobile telecom operators and cable providers. Each will compete by serving different customer segments with different technologies, following patterns that nobody – operator or regulator – can now foresee. Thus, regulation should not define markets too narrowly: if it did, it would prevent the deployment

of some platforms while hindering others, not on the basis of some refined economic analysis, but arbitrarily.

On the other hand, competitive conditions will vary significantly between different areas, leading to geographic regulatory analyses which are appropriately granular, in order to reflect the existing differences in demand and supply conditions.

Hence, regulators should not now assume that future high speed broadband will be delivered by – or even chiefly on the basis of - a specific platform. Market definitions should accordingly be broad both on a technological and geographic basis.

3.6. Promoting investment through fair market pricing

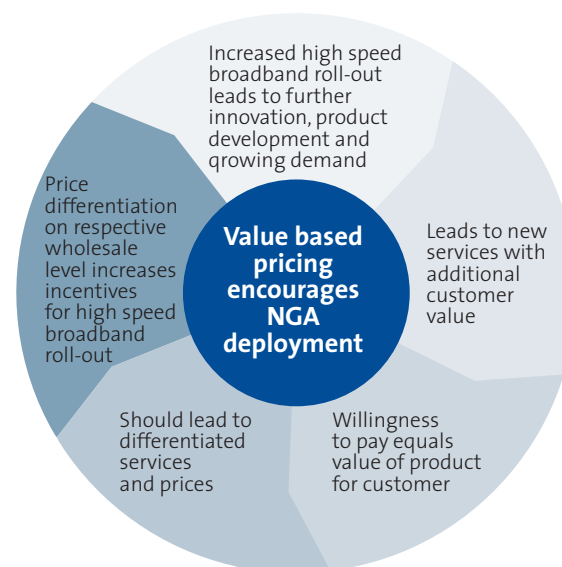
In order to promote network deployment, the development of risk-sharing arrangements should be supported, as these can be effective commercial solutions to an efficient spreading of risk across different parties enjoying the benefits of the investment. Regulators should in particular recognize that commercial co-operation among operators can take a number of different forms, ranging from simple contractual arrangements for a proportionate sharing of the investment risk, to the sharing of network infrastructures built in different geographic areas, through to jointly building and owning a single network infrastructure.

This should be regarded as a perfectly natural, welfare-enhancing behavior, and should be left to develop in full. In practical terms, commercial co-operation will help fostering levels of competition among investors, both upstream and downstream, by allowing the provision of wholesale services by multiple parties. Cooperative investment in NGAs reconciles the needs for competition and investment by internalizing them - competitors become investors and investors become competitors.

Alongside pricing of wholesale to share risk and provide incentive for investment there may also be benefits in adopting more value based pricing models in wholesale services.

Figure 3.2 – Benefits of alternative wholesale pricing models

Willingness to pay relates to how people value services and efficient investment models direct resources according to the value of those services. Telefónica believe that for new investments some forms of value based pricing will be more efficient and encourage more investment in NGAs, both fixed and mobile. This may be based on the different quality of service requirements of different services. It should not be based on cost models but on the commercial levels set by the market and customer demand. The resulting virtuous investment circle is illustrated in figure 3.2.



| 3.7. Making progress towards a competition law based regime

The current Regulatory Framework for Electronic Communications, in place since 2002, created a comprehensive regulatory regime that – together with competition law rules – aimed to enable the transition to a removal of specific ex ante regulation in the telecommunications sector at the earliest possible date. Almost a decade into implementation, with substantial progress made on a number of fronts, the level of prices and the degree of choice in communications markets across Europe, suggests that now is the time to make real progress towards an ex post competition law based environment. An environment where the rules applied to the

telecommunications industry are similar to those applied to other economic sectors.

The extensive development of competition law practice in Europe, together with the insights and experiences gained by operators from the application of a sector-specific regulatory environment over recent years, implies that the sector is ready for a lighter regulatory model now. This new focus would imply a move away from the presumption that certain operators with dominant market positions have incentives to abuse this power and would inevitably act on them.

| 3.8. The role of consumer rights in the digital space

One effective way of re-enforcing competitive dynamics in the market is to ensure adequate consumer rights, which are particularly important in the evolving digital space. Indeed, competition will be encouraged if the defence of consumers' rights is aimed at enhancing the customer/service provider relationship, ensuring that

customers receive the features and services promised in an environment of transparency. Telefónica believes that appropriate transparency is essential to maintain competitive markets but it would be detrimental to innovation if how this was done was highly regimented and did not take account of local market conditions.

| 3.9. Improving the availability and flexibility of Spectrum

It is becoming increasingly important to take decisive steps towards the creation of secondary spectrum markets and, along the same lines, to continue the development of concepts such as technological neutrality associated with both trading and the freedom to change the use of spectrum by licence holders. Given the difficulty of implementing these proposals, the pace must be gradual, ensuring

that distortions are not generated in competition, that uncertainty is not created among agents, and that problems of interference do not result.

The introduction of freedom to use any technology on any spectrum band (technological neutrality) and to offer any service on any band (service neutrality), will increase flexibility

in the market, but must take appropriate account of the impact on current licence holders.

Europe is making good progress along these lines but there is still much to do. The value of spectrum dependent income is shown in figure 3.3.

Exploiting the digital dividend

The debate that is now well underway regarding the future use of the digital dividend is very positive. With the importance of the information society established and sanctioned in Europe, it would make no sense for the

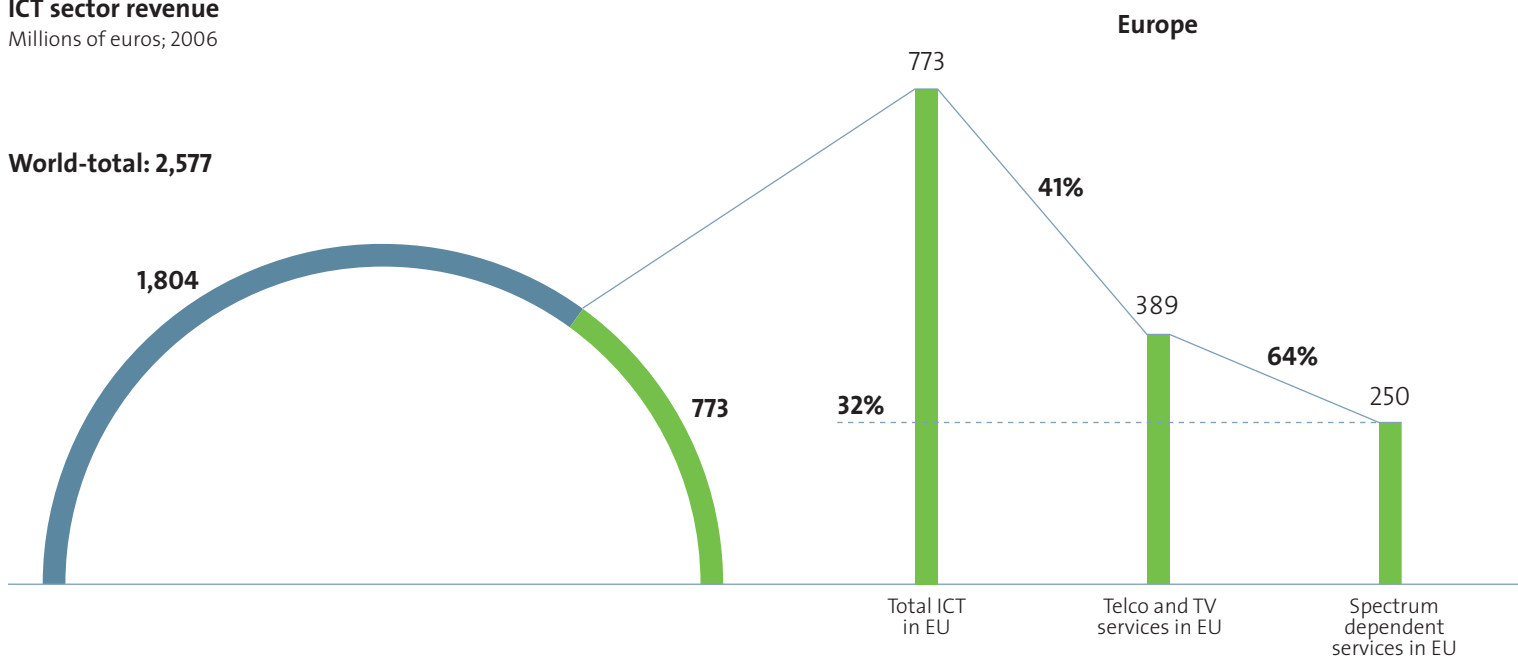
European authorities to make decisions without duly taking into account the needs of the industry and, particularly, the value contributed by different uses of the spectrum to society as a whole.

There are clear benefits for the future deployment of mobile systems in the UHF band in Europe (790-862 MHz). This band could play a key role in the supply of new mobile services, and the availability of spectrum for mobile use after the shut-down of analogue television transmissions, together with the degree of harmonisation achieved at a European level will have a clear impact on sector competitiveness.

Figure 3.3 - Spectrum-dependent income

ICT sector revenue
Millions of euros; 2006

World-total: 2,577



Sources: MEMO/05/345. A New EU Radio Spectrum Strategy: Frequently Asked Questions. European Commission, 2007 EU Telecoms Reform #8. Less but better regulation. European Commission, DigiWorld 07

The year 2015 - which was the year initially planned for the alternative use of the spectrum opened up by the digital dividend and is still the target date for some Member States - appears to be too late to begin implementing the new services associated with the mobile internet with the conviction and ambition required to meet Europe's aspirations for global competitiveness and social inclusion.

3.10. Revising the Concept of Universal Service

The concept of universal service arose when voice was the only consumer telecommunications service available. In exchange for being the exclusive service provider, most incumbent operators had to provide certain guarantees of access to all the citizens in the country. The operator's were required to address two key issues, availability of services (coverage) and accessibility of services (price).

Ensuring affordability of services - Lack of affordability of telephony services is not now a problem in most Member States particularly with low income households taking up prepaid mobile phones. To the extent that intervention is considered necessary, general income support has the benefit of enabling households to determine how best to meet their needs given their limited resources.

Targeting of any universal service regulation is important to ensure available funds go to customers most in need. Eligibility criteria should be based on income levels (e.g. welfare recipients). Support for households in high cost, rural, areas should also be targeted at low income households albeit that a higher subsidy may be necessary to address higher service provision costs. Support should be competitively neutral.

Ensuring supply of services - Governments should first review potential barriers to access including ensuring the availability of spectrum at low frequency bands through refarming and access to the Digital Dividend spectrum; permitting network sharing and new investment models; enabling fair returns on investment taking account of level of risk and streamlining planning procedures.

To the extent that significant coverage gaps remain, then one-off government support for network investment provided on a contestable, technology-neutral, basis is likely to be more

economically efficient than ongoing consumption subsidies. This can enable individuals who highly value the service to access it. One-off payments to cover fixed costs can enable prices to be set closer to marginal costs in line with promoting efficiency. Coverage extension could be considered on a case-by-case basis taking into account other uses of regional and European funds

Broadband - General policies to support the development of broadband markets are likely to be more effective and efficient. Mobile broadband will be an important additional source of competition and Governments can facilitate the extension of mobile broadband coverage by: Ensuring availability of spectrum for 3G at lower frequency bands including through refarming and providing access to analogue broadcasting spectrum and permitting network and facility sharing in rural areas.

The Universal Service debate should be correctly focused:

- It is not about telecommunications services and networks
- It is not about prices
- It is not about imposing obligations on operators or getting governments to shoulder them

Universal service policy should be about ensuring that no European citizen faces social exclusion.

There may also be a role for targeted government subsidies in the form of regional funds to extend broadband coverage to areas where broadband network provision is unlikely to be commercially viable. Such subsidies should not displace commercial investment and should be allocated by competitive tender on a technologically neutral basis.

3.11. Addressing the Challenges of Security, Privacy and Content

The increasing convergence of services and platforms has given rise to a series of challenges related to security, privacy and content which are new for consumers and service providers alike. Indeed, the development of the Internet has been a learning curve for all and up until now - for the most part, general legislation has successfully been aimed at guaranteeing the protection of users and consumers.

The internet is much more than a simple conduit for existing business models. The Content owners need to work with service providers to develop new business models that build on the strengths of both parties and work with innovation, not against it.

However in Europe there is a growing debate regarding the proper balance between privacy and security. This is very relevant in the digital world where in addition there is tension generated between the desire to protect intellectual property against unauthorized use and the need to create easy to use and attractive services where customers can clearly perceive value for money.

Telefónica believes that a solution lies in the introduction of new business models that are not based on defending the physical content distribution models of the past. Requiring service providers to police the internet to protect outdated commercial models will also not work – in democratic countries the internet always tends to find a way around what are felt by some to be intrusive restrictions.

Commissioner Reding herself summed up the problem in a recent speech saying “In my view, growing internet piracy is a vote of no-confidence in existing business models and legal solutions. It should be a wake-up call for policy-makers.”

The principle of guaranteeing all users the right to access or distribute any legitimate content and use any service and/or application of their choosing is a broadly shared objective. Convergence has made content a key element for developing the market, where new online platforms are creating attractive opportunities for new legal models of distribution.

To efficiently deliver a choice of new services across networks it is important to manage those networks. This requires operators to deploy network management technologies and to be able to charge (if they choose to) for different use of network resources.

Operators and service providers are unquestionably interested in properly addressing the challenges of convergence in this area. They are clearly committed to security and the protection of the right to privacy in the digital world, a commitment shown in both the advances in network security and in the respect for user privacy.

The net neutrality debate that has ebbed and flowed across the Atlantic in recent years is in Telefónica’s view not driven by the underlying economic realities of network investment. It is not unreasonable to charge varying prices for varying consumption of resources and their associated costs. As discussed earlier it is also sometimes efficient to create price structures based on value to the customer.

3.12. Exploiting the Potential of the European Domestic Market

The EU has an unquestionable entrepreneurial, productive, technological and market potential that needs to be exploited if Europe is to remain competitive in an increasingly globalised marketplace. It is now time for state ownership of telecommunications operators to come to an end and enable the market to deliver Europe wide.

Harmonisation of markets based on deregulation

Making this domestic European market a reality involves providing a consistent approach across the EU. The new regulatory Framework that has resulted in the creation of BEREC provides some tools that will support this but BEREC will need to demonstrate focus on material issues and not be diverted onto issues of a peripheral nature.

Facilitating the process of consolidation

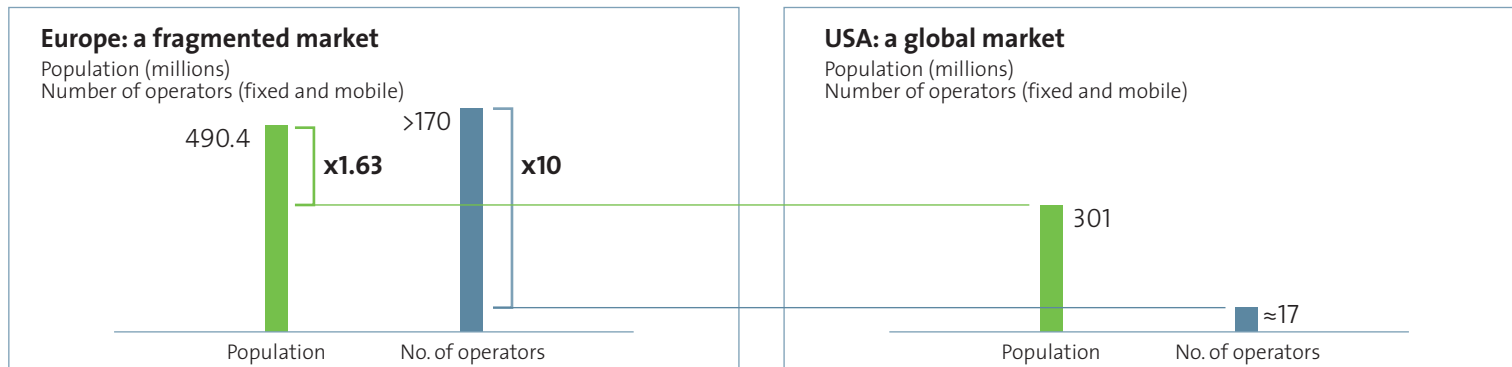
A comparison between the state of the telecoms market in

Europe and the USA reveals a major difference in the number of players in relation to population as shown in figure 3.4.

The nature of the telecommunications business and the economies of scale associated with its future development suggest that there are distinct opportunities for consolidation, both in country and cross border. Cross border consolidation can leave domestic markets little changed in terms of number of operators but can foster the development of Europe wide products and services. In country consolidation will also be necessary in some markets and this will need to be assessed in line with domestic competition law. The level of competition is not directly related to the number of operators and a proper analysis should always be made about the impact of changes in the number of operators and certainly not create rules that say the number of players in a market should never be allowed to go down.

Unnecessary fragmentation can lead to market inefficiency which then creates a competitive disadvantage versus other economic areas of the world. Size has become an essential competitive driver to sustain or improve positions within a global marketplace. Europe needs to face up to the realities of scale and scope where appropriate and not inhibit the legitimate drive to obtain critical mass on a global stage.

Figure 3.4 - Ratio between population and number of operators in Europe and the US



3.13. Updating the Strategy from the Sector

This section summarises the key aspects of the new Agenda:

A new approach that seeks to optimise the contribution that ICT makes to the lives of European citizens by creating an environment where ICT readiness, use and skills are all tied together and supported both by appropriate public and private resources. This is the key message for policy makers trying to deliver benefits for European citizens. There is no magic bullet, this is about keeping three things in step, firstly the deployment of infrastructure, secondly the take up and use of services and thirdly the skills of the general population.

A new strategy and approach will require organisations to develop and deliver it as well as providing the necessary steer. The following are some specific suggestions:

- A CEO level sector forum to discuss agendas and strategies
- Promotion of research studies and debates to publicise the important role that the sector plays in society specifically aimed at stimulating ICT usage and skills development.
- Ensure that EU resources on R&D&I are adequately focused on the 3 main elements of ICT value delivery to citizens, readiness, use and skills.

1. Place ICT at the heart of plans to address European competitiveness.

- To ensure ICT is a key enabler supporting economic recovery and prosperity

2. Encourage the most beneficial market growth by addressing all elements of the ICT value chain.

- To create an environment where ICT readiness, use and skills are all closely tied together and supported by appropriate public and private plans and resources.

3. Promote infrastructure investment for a Digital Europe.

- To support investment in next generation high speed networks (both fixed and wireless) as a European Policy objective by supporting risk sharing and new wholesale business models.

4. Implement a responsive European spectrum management policy.

- To encourage the development of new services through the release of spectrum based on demand.

5. Support European industry in its search for global competitiveness, scale and leadership.

- To provide a better link between investments and the underlying global economic drivers

6. Reconsider the universal service model

- To focus on policies that addresses territorial cohesion (coverage) but generally leave social cohesion (prices) to innovation and the market.

7. Encourage both the creation and distribution of digital content.

- To encourage content owners to work with service providers to develop new business models that build on the strengths of both parties and work with innovation, not against it.

8. Move from an ex ante to an ex post regulatory regime

- To make real progress towards a conventional regulatory regime that is less sector specific and more reliant on the direct application of competition law.

4. Annex

Telefónica Case Studies

Telefónica has this year become the leading Telecommunications company based on sustainability criteria according to the Dow Jones Sustainability Index (DJSI). In its annual review, the rating agency Sustainable Asset Management (SAM), based on corporate economic, environmental and social performance, has rated the Group with a score of 86 (81.4 points in 2008), which is 28 percentage points more than the industry average.

Similarly, Telefónica has been recognized as having best practice in seven key areas: risk & crisis management; standards for suppliers; reducing the digital divide; impact of telecommunications services in societies in which the Group operates; brand management; Codes of Conduct and anti-corruption policies, and corporate citizenship.

The following pages are 5 case studies showing how Telefonica is working on ICT applications that address the following key areas:

- 1 e-health
- 2 climate change
- 3 digital inclusion
- 4 e-education
- 5 helping citizens and SMEs overcome the economic crisis

1. Telefónica and... eHealth

Solution:

COLABOR@ Collaborative tool for healthcare professionals (Spain).

Scope:

Spain and Chile

Service description:

COLABOR@ is a network service for healthcare professionals that allows sharing medical information in real time between different health centres. It encourages the use of different collaborative tools as collaborative electronic whiteboards, integration with the EHR using HL7, IHE and DICOM systems, meetings on-line in front of open meetings or quality of video / image sharing and multi Video Conferencing. It also improves the knowledge of health workers; for example their understanding of the importance and role of information in their working lives.

One of the programme's main advantages is the improvement of the quality and range of informational inputs to health decision-making and, hence, to improve the quality of health decisions (covering planning, monitoring, evaluation, etc.). For example, the tool reduces the time that health workers spend on data-handling tasks. Quicker data-handling can also lead to faster health decisions and action, potentially saving lives. By making health data accessible on the desktop, ICTs can also enable faster health decisions and actions.

Benefits for society:

- Reduction in response time in complex clinical cases
- Easier access to diagnostic tests and physician clinical history, to be able to share such information
- Reduced number of diagnostic evaluation
- Access to talent in the process of diagnosis
- Save travel

Testimonials

"The uniqueness of the Western Isles highlights remote diagnostics and rehabilitation as well as chronic disease management as key points to properly deliver health care to our population. COLABOR@ fits perfectly as an enabler to foster remote care from local facilities, avoiding unnecessary transportation of people to the mainland".

Western Isles Health Board, Scotland

COLABOR@ is a perfect tool to implement a Teledermatology service, which could help to avoid moving people hundreds of miles to meet the dermatologist, making more viable local medical facilities, sometimes underutilized".

NHS Berkshire East Trust Benefits

2. Telefónica and... tackling Climate Change

Solution:

Telepresence a collaborative tool for CO₂ emissions reduction by virtual meetings.

Scope:

Global

Service description:

The **telepresence** service facilitates the development of virtual meetings in real time and avoids long distance travelling. This service allows the connection between participants in different remote locations that simulates meetings as if they were developed in the same space. It is an innovative service that will become a new tool for sustainability at public and private companies.

In 2008, Telefónica installed 14 telepresence rooms in its offices in three regions: Latin America, Spain and Europe. This initiative's objectives were time optimisation and the reduction of the international travel costs and CO₂ emissions associated with travel to meetings. This installation also enables the promotion of a collaborative international culture between Telefónica employees and serves as a demonstration for selling the telepresence service to other companies.

Telefónica expects with this information and communication service (IT service) to join company members, but also to its customers, suppliers and partners in a real environment.

Benefits for society and the environment

- 1) Reduction of CO₂ emissions from travel for meetings.
- 2) Internal collaboration of employees from different countries
- 3) Accessibility to modern types of virtual meetings to employees

Testimonials

"It is ideal for large group meetings, comfortably seating participants around a virtual table for applications such as customer engagements, presentations to groups, supply-chain dealings, press briefings, operational or engineering reviews, negotiations, or regular team meetings. The life-size images and remarkable clarity allow you to see every expression, while the rich, CD quality audio allows you to hear every word"

Cisco Telepresence Manual

"IT can be a significant driver of greenhouse gas reductions, but we need strong global climate policy to ensure these solutions are implemented at the speed and scale necessary to make a difference"

Dennis Pamlin, WWF Policy Advisor.

3. Telefónica and... fostering Digital Inclusion

Programme: **Integrare**

Scope:

Peru

Programme description:

Integrare is a programme to extend telephony and internet services to remote rural areas via public-private partnerships. The wider aim of the project is to help rural communities integrate and develop through telecommunications services. This policy of alliances has enabled the company to improve use of the service and, when added to the contribution by the municipal or regional government to the investment, results in better tariffs which make the service accessible to people with low incomes

The programme helps improve social and economic conditions in the most remote areas, based on the advantages offered by telephony and the Internet. In this regard, it helps break down the communication barrier among Peruvians, linking regions, fostering economic growth, integrating them into the world, and accelerating their social and economic development.

This social initiative of Telefónica's began in September 2006 and has so far brought public telecoms services to more than 80 locations throughout Peru, benefiting more than 32,000 residents.

Benefits for society:

- Travel savings for residents and authorities, in terms of both time and money.
- Increase productivity and therefore profits in their businesses. The cell phone allows for greater quality care products by significantly increasing the number of customers to expand the networking and satisfaction
- Improve standards of public safety in the localities. Thanks to the cell phone coverage, residents can get help from local police stations in case of danger
- Improve the emergency health care. The cell phone has reduced the waiting time for patients and even increased the childbirth rate.

Key Figures:

- 32,464 beneficiaries of the programme
- Over 80 locations covered
- The contribution of Telefónica in Canas, Huarmaca and Coasa local governments projects is S/1,251,295 (303,712) in Capex and Opex, until October 2008

Testimonials

"(Today), the miner asks in Coasa, what price is paid for a gram of gold. Then, calls to Juliaca or Puno to ask what price is paid there, and if he is paid better, goes to sell his product. Sometimes the price difference is from 3 to 5 Soles per gram".

Melitón Palacios Casasola, Mayor of Coasa, Peru

4. Telefónica and... ICTs in Education

Programme:

Interactive generations in Latinamerica

Scope:

Argentina, Brazil, Chile, Colombia, México, Peru and Venezuela

Programme description:

Telefónica, in collaboration with the University of Navarra and Fundación Telefónica's EducaRed programme, prepared the first and most extensive study of new technologies available to children and teenagers in Latin America: "Interactive generations in Latin America. Children and teenagers in front of the screen".

The report is the result of a pioneering initiative promoted by Telefónica within the framework of a much wider programme related to Interactive Generations in Latin America, which aims to promote responsible and safe use of new technologies and coordinate Telefónica's child protection activities in the region.

In the first months of its path, the project has reached many important milestones: more than 81,000 schoolchildren from Argentina, Brazil, Chile, Colombia, México, Peru and Venezuela have participated in the biggest research done about the use of diverse screens: Internet, cell phones, videogames and Television and 845 educational centres have already registered to participate.

Benefits for society:

- Know the use and assessment of the screens amongst the Latin-American schoolchildren
- Transfer and move this knowledge to all the actors that gather around the minor: parents, schools and social agents, among others.
- To promote practical actions –educational, legislative, and managerial– in order to provide teachers with the tools and knowledge to understand the world of the new generations and teach children and parents, as well as sharing responsible use of new information technologies with other teachers.

Key Figures:

- 81,000 schoolchildren
- 845 educational centres have already registered to participate

Testimonials

"Interactive Generations responds to a current problem that is the use of the Internet as a medium used by students to communicate. This project allows us to work with students not only based on written texts but also with multimedia content, more attractive and appropriate for their age (of students). Having this information and statistical data enables us to develop a social action plan to be used in several courses and inserted into the area of mentoring"

**José Félix Espino, teacher at the Colegio Parroquial
Nuestra Señora de la Reconciliación, Lima**

5. Telefónica and... helping SMEs and citizens overcome the economic crisis

Programme:

Anti crisis plan for small and medium businesses and the unemploye

Scope:

Spain

Programme description:

In March 2009, the Company launched an anti crisis plan with measures for small and medium businesses and unemployed customers that includes discounts of up to 50% in the bills of its unemployed clients, with a limit of 20 euros per bill. This year, up to half a million bills will benefit from this help.

Telefónica's announcement had a quick response in our customer care services (1004, Small and Medium Businesses, Internet) which registered, in the days following the announcement, around 10,000 calls from customers requesting information on the plans and asking for advice on how to control their telecommunications expenditure.

Due to its commercial success, a new Commercial Advisors Office was opened, with the aim of ensuring that each of the Company's clients has the best offer, and the products that best suit their needs. This office is open 24 hours a day, Monday to Sunday, on free phone 900 380 390. On the date of this Reports publication, this service had registered more than 4,500 calls and more than 100,000 unemployed customers have already had their requests processed to receive discounts in their bills.

Likewise, the www.telefonica.es/teayudamos website was set up to process customers' requests. Specifically, it has registered more than 250,000 downloads of the subscription forms. What's more, around 3,000 newly created businesses have also been interested in the help and discounts designed for them.

Benefits for society:

- Tools to control customer's telecommunications expenditure.
- Help the survival of newly established firms
- Increasing the disposable income of the unemployed

Key Figures - Impact:

- More than 100,000 unemployed customers have already made their requests
- 250,000 downloads of the subscription forms
- Around 3,000 newly created businesses have also been interested

Programme:,,

Telefonica
