

Comments on the PricewaterhouseCoopers Report: *Rethinking the European ICT Agenda – Ten ICT Breakthroughs for Reaching Lisbon Goals*

September 2004

Microsoft welcomes the PricewaterhouseCoopers report *Rethinking the European ICT Agenda – Ten ICT Breakthroughs for Reaching Lisbon Goals* (the "PwC report"). By stimulating discussion and challenging long-held beliefs, the report may well become the catalyst for change necessary if Europe is to accomplish the Lisbon Strategy goal of becoming the world's most competitive knowledge-based economy by 2010. Microsoft agrees with many of the report's conclusions and proposals. At the same time, we are concerned by the report's limited support for intellectual property rights (IPR) and repeated calls for government intervention in the fast-paced, dynamic and highly-competitive information and communications technology (ICT) market. We therefore offer a few suggestions below that highlight issues we believe are essential if Europe is to become the world's economic leader.

KEY MESSAGES

- **Increased development and uptake of ICT are critical if Europe is to achieve the Lisbon goals.**
- **Interoperability and standardisation are best achieved through voluntary industry-driven initiatives and technologically neutral public policies.**
- **The private sector is leading the push for interoperable and user-friendly DRM systems that are necessary for the realisation of anywhere, anytime content.**
- **Strong intellectual property protections are critical if Europe's ICT sector is to become a global leader.**
- **Flexible and harmonised telecommunications regulation is needed to foster innovation in next generation networks and services.**
- **All Information Society stakeholders have a role to play in enhancing online security and safety.**
- **Reducing the digital divide through e-skills training will improve European competitiveness and help create a more social Europe.**

1. Increased development and uptake of ICT are critical if Europe is to achieve the Lisbon goals.

The PwC report details at length the importance of ICT development and uptake for European economic success. As the report concludes, "ICT is not only the technological basis for a fast growing industry sector but also an indispensable enabler and driver for an inclusive, dynamic and knowledge based economy and a modern social society". (p. 19) For Microsoft and others in the ICT sector, such a conclusion is not surprising, but rather confirms our experiences around the world.

Increasing European development and uptake of ICT to levels found elsewhere will be a difficult challenge. In this respect, the PwC report mirrors many of the points made in a 2004 Microsoft-sponsored study entitled *Reaping the Benefits of ICT*. The study, which was undertaken by The Economist Intelligence Unit, concludes that the EU is not doing everything possible to benefit from ICT. Despite these concerns, important strides have recently been made. For example, the updated

eEurope 2005 Action Plan is stimulating deployment of broadband technology and online services. Meanwhile, Member States are increasing research and development funding, though typically at rates below the Lisbon target of 3% of gross domestic product.

The private sector obviously has a critical role to play in this process. Microsoft takes this responsibility very seriously and is committed to continuing our public/private partnerships in support of the Lisbon Strategy. For example, in 2004, we opened the European Microsoft Innovation Centre (EMIC) in Aachen, Germany. Microsoft scientists and engineers at EMIC, in conjunction with academia and industry partners, take part in applied research projects, such as those sponsored by the European Commission and Member State governments. EMIC complements Microsoft's existing research and development centres in Europe: fundamental research at Microsoft Research Cambridge, United Kingdom; software development at the Vedbaek facility, Denmark; and product localisation at the European Product Development Centre in Dublin, Ireland. Through these and other efforts, Microsoft and its industry partners are working to increase European ICT development and economic competitiveness.

2. Interoperability and standardisation are best achieved through voluntary industry-driven initiatives and technologically neutral public policies.

Microsoft welcomes the PwC report's recognition in "breakthrough 2" that interoperability and standardisation are important components of Information Society growth. We have long supported government and industry initiatives to promote interoperability. After all, the ability of a product to interoperate with other products or services can have a significant impact on market demand, and ICT firms that fail to adhere to widely adopted industry standards risk losing customers to firms whose products do implement such standards. That is why Microsoft works diligently to ensure that its systems are interoperable.

The PwC report's call for government intervention.

Although Microsoft supports the push for greater interoperability and standardisation, we feel strongly that such efforts should be industry-driven and voluntary. We are therefore troubled by the PwC report's apparent call for government mandates and technical requirements. By urging regulators to take "fierce action", "confront" system developers and "break[] through status quo's" the report recommends that government should mandate the use of particular technologies. (pp. 42, 44) Microsoft acknowledges the concerns that led to such a radical recommendation. Nonetheless, we respectfully suggest that in the fast-paced global ICT environment, attempts by government workers to pick technological champions through inflexible mandates will not be successful.

The PwC report justifies its call for government intervention as follows: "[A]lthough . . . industry plays an important role in the design, development and implementation of solutions, there is such a wide range of stakeholders with different, often opposite interests, that government has the natural role of breaking through status quo's which are not in the interest of users". (p. 42) This statement has it exactly backwards. The fact that industry is responsible for the "design, development and implementation of solutions" means that industry – not government – should take the lead on these issues. Moreover, the existence of competing industry interests does not foreclose the development of interoperable systems. On the contrary, industry competition is the fuel that drives the creation of ever more interoperable systems.

The value and importance of voluntary industry-driven initiatives.

The commercial software industry illustrates clearly how the private sector – with all of its competing interests – can achieve interoperability. By working closely with standards bodies and other ICT firms, commercial software vendors have improved ICT interoperability in recent years, and this trend will undoubtedly continue. Indeed, commercial software firms have historically been active contributors to broad-based standards bodies, and Microsoft's efforts in this area are no exception. Microsoft participates in every leading information technology standards body, including the European

Telecommunications Standards Institute (ETSI), the European Committee for Standardisation (CEN), the European Committee for Electrotechnical Standardisation (CENELEC), the Internet Engineering Task Force (IETF), the World Wide Web Consortium (W3C), the European Computer Manufacturers Association (ECMA), the Web Services Interoperability Organization (WS-I), and many others.

The result of these various efforts is that literally thousands of off-the-shelf hardware and software products on the market today can communicate and exchange data. Further evidence of these efforts can be seen in the ICT systems of large enterprises, which often include a range of hardware, software, and platform products from several different vendors. Sharing data between the disparate elements of these systems typically would have been difficult or impossible only seven or eight years ago. Today, thanks to industry efforts to promote open standards, such sharing takes place with much greater ease.

Finally, the PwC report does not explain in detail the real and significant problems that will result from government mandated standardisation and interoperability. Government efforts to promote particular solutions impede innovation by undermining industry's incentive to develop new technologies in that area. Such mandates also tend to "lock in" consumers to specific products that may quickly become outdated. This deprives consumers of new features, increased functionality and efficiency, and possible benefits from new, lower-cost products.

The importance of neutrality in government procurement.

The preceding comments on the respective roles of government and industry in promoting interoperability provide important lessons for the role of government procurement in spurring ICT innovation. The PwC report correctly observes that the U.S. Government has served as a catalyst for ICT innovation by "acting as a launching customer for new technologies." (p. 33) Yet the report incorrectly concludes from this that governments should use their procurement power "strategically" to favour specific technologies, vendors, or development models. (p. 51)

The U.S. Government has in fact consistently pursued a policy of merit-based procurement, and nowhere more so than in the procurement of ICT. This policy has spurred innovation by allowing governments to showcase new technologies and applications, while forcing competing firms to offer government purchasers the best possible value for money. The U.S. policy of merit-based procurement recognizes that governments – like users generally – are best served when they can select ICT from a broad range of products based on such considerations as value, total cost of ownership, feature set, performance and security. European governments should likewise leverage the marketplace to spur ICT innovation and should avoid intervening through preferences or procurement requirements that would discriminate in favour of one model over another.

Microsoft believes that the principles articulated by the Initiative for Software Choice (ISC), a broad-based industry trade group that includes many European firms, provide sound guidance in this area. The ISC recommends that governments: (i) procure software on its merits, not through categorical preferences; (ii) promote the broad availability of government funded research, including for commercial development by the private sector; (iii) promote interoperability through platform-neutral, voluntary, and industry-led standards; and (iv) maintain a strong choice of intellectual property protections. Taken together, these principles will promote the cost-effective use of tax revenue while prodding the private sector to offer governments the very best products and services at a competitive price.

3. The private sector is leading the push for interoperable and user-friendly DRM systems that are necessary for the realisation of anywhere, anytime content.

In "breakthrough 4", the PwC report describes the future content market as "any content, any platform, anywhere, anytime". The private sector, by promoting the Information Society in general and digital rights management (DRM) systems in particular, is taking a leading role in realising this vision. Consequently, the European content industry appears poised for rapid growth.

The European content market and importance of DRM systems.

The PwC report accurately notes that the European Union's inherent characteristics (*e.g.*, a multi-lingual and diverse society) should help firms create quality content. Policymakers can take several important steps to ensure that this potential is realised. For example, as discussed during the Irish Presidency's 2004 roundtable conference, national governments should continue to implement regulatory frameworks regarding spam and promote the development of broadband technology. What regulators should not do, however, is mandate particular DRM technologies.

DRM systems encompass a wide range of technologies that allow right holders to communicate terms of use, determine how their content is delivered, accessed and used, and collect payment for such usages. By making it easier for authors to manage their digital content and by protecting this content from theft, such systems give right holders the confidence to make their most valuable works available in diverse ways. These systems are therefore critical for the realisation of "anywhere, anytime" content, and will benefit consumers, who will enjoy more opportunities to use digital content.

The private sector's drive for interoperable DRM systems.

The PwC report implies that government regulators should help define the best DRM solution. To ensure ongoing innovation, however, DRM development and deployment must remain voluntary and market-driven. As explained earlier, government-mandated technologies quickly become outdated, depriving consumers of new features, increased functionality and potential benefits from new products. Similarly, interoperability among DRM technologies must develop through industry leadership – as is happening already. Government imposed standards in this area would freeze innovation.

Although government-imposed DRM mandates would be counterproductive, there is one thing policymakers can do to increase DRM uptake – comply with the EU Copyright Directive by adapting national levies regimes to reflect the application of DRM systems. Despite the Copyright Directive's requirement, levies regimes in many Member States have not yet been adjusted to reflect the application of DRM systems. This issue must be addressed. As former Information Society Commissioner Erkki Liikanen said in 2003, "[l]evies should be seen as a temporary solution, pending better alternatives in the form of DRMS. This is in the long-term interest of the Information Society and eEurope. DRMS are a better deal for right holders than levies".

4. Strong intellectual property (IP) protections are critical if Europe's ICT sector is to become a global leader.

The PwC report states in "breakthrough 5" that European firms should "go for global platform leadership in the ICT industry". (p. 49) The report, however, fails to explain the significance of strong IP protection in achieving such a goal. We recognize that the list of breakthroughs in the report is not intended to be exhaustive. That said, strong IP protection is of such vital importance to attaining the Lisbon goals that we believe it must be included in any list of essential breakthroughs. Unfortunately, the report deals with IP in depth only in "breakthrough 5" and only in the context of the EU's proposed Directive on Computer-implemented Inventions (the "Software Patents Directive"), where it provides a misleading and single-sided perspective of the issue. To illustrate the importance of IP for Europe's ICT industry, Microsoft notes the following:

- ✓ **IP has long been recognized as a driver of innovation.** For centuries, Europeans have recognized the relationship between protection of intellectual property and innovation. Copyright, for example, is a principle that can be traced back to the ancient Greeks and Romans. The British in 1709 enacted the first copyright law (the "Statute of Anne") in the English-speaking world. Each recognised that copyright specifically, and intellectual property more broadly, serves the fundamental purpose of promoting social and economic progress by encouraging creativity and innovation.

- ✓ **The success of the ICT sector in Europe depends upon IP protection.** Strong IP protection enables authors and inventors to recoup their investments, which in turn yields greater incentives, and resources, to invest in creating new products and new technologies. These new products and technologies improve efficiencies and increase productivity. IP protection also fosters the transborder flow of technology, goods and services. Foreign firms are more likely to open research and development facilities in countries where intellectual property protection is strong, thereby providing jobs and access to technology for the host country. And as businesses follow intellectual property protection, so too does talent. Innovators poorly protected at home will tend to pursue their research abroad, thus causing a "brain drain" in the home country.
- ✓ **There is a clear link between IP and economic growth.** Among the Lisbon goals the EU has set for itself is the goal of sustained and accelerated economic growth with maximum employment. As experience demonstrates, IP and the innovations it fosters are closely tied to economic prosperity. Over the past 25 years, industries that produce intellectual property have become major contributors to economic growth. The software industry is an excellent example of this trend. A recent survey by IDC indicates that the software and ICT service industries add more than a trillion euros to Western Europe's economies, and half a million high wage, high skill jobs. Moreover, by improving efficiency and productivity, the software sector enhances economic success in other, unrelated industries.
- ✓ **IP protection also drives content creation, the backbone of the Information Society.** As the PwC report notes, the development of new and innovative content is critical for the success of e-commerce, and is an engine for future economic growth and employment. Strong IP protection gives authors the incentives they need to create new content and to make this content available in new ways, including over the Internet.
- ✓ **Patents for computer implemented inventions are an essential element of this equation.** When granted after a serious examination and based on strict criteria, as is the case with the patents granted by the European Patent Office, patents for computer-implemented inventions (CII patents) encourage innovation in the software industry, increasing the size of the industry and of the economic contributions that it makes. A number of studies, including Commission-sponsored studies, confirm this, concluding that software patents fostered the growth of computer-related industries in the U.S. (Inexplicably, the PwC report excludes IP protection from its list of factors behind the success of the U.S. ICT industry, although this factor has long been recognized as a primary reason for U.S. achievements in ICT).

We thus must disagree with the report's contention that patents for computer-implemented inventions – and the proposed Software Patents Directive more specifically – pose a threat to innovation in the EU. In this context, it is important to recall that the European Patent Office (EPO) has in reality long been granting CII patents. Indeed, the EPO has recognised the patentability of computer-implemented inventions for many years and has granted approximately 30.000 patents for such inventions. As a result, inventors large and small have flourished, and consumers have benefited from the fruits of their labours. Codification of the existing practice will serve the EU well. Accordingly, rather than backing away from the proposed Software Patents Directive, as the PwC report suggests, the EU should be encouraged to adopt the Directive, and to resolve outstanding issues in favour of existing EPO practice.

Finally, we must clarify one particular point with regard to CII patents. The PwC report suggests that a software patent "serves to protect inventions of a non-technical nature" and thus could undermine innovation. (p. 50) This is not the case in the context of the Software Patents Directive. The Political Agreement reached by the Council follows the current practice of the Technical Board of Appeals of the EPO and requires that a computer-implemented invention make a novel and non-obvious technical contribution to be patentable. This ensures a careful approach to inventions in non-technical areas and

effectively excludes the possibility of patent protection for computer-implemented business methods. In addition, the Political Agreement expressly excludes patents on business methods because they lack the technical contribution requirement.

- ✓ **Enforcement of IPRs is equally important to the ICT sector's success.** Recent estimates indicate that more than in one three copies (37%) of software in use in the EU is pirated. In addition to undermining industry's ability to invest in new technologies, piracy deprives EU economies of much needed jobs and tax revenues. Indeed, a recent study by IDC indicates that a 10 percent reduction in the piracy rate could help Western Europe double the number of people employed in ICT jobs in 1995, reaching 3.5 million ICT jobs by 2006. The UK, which has the region's lowest piracy rate, has enjoyed the highest growth rates in both its software and ICT service industries – adding nearly 200,000 jobs from 1995 to 2001.

Experience has shown that meaningful enforcement is the best way to reduce piracy levels and to reap the concomitant benefits. To this end, we welcome the EU's recently-adopted Directive on the Enforcement of IPRs. Member States should now be encouraged to implement this Directive quickly. In addition, we encourage the EU to take action to harmonise and strengthen the criminal rules relating to counterfeiting and piracy. Meaningful criminal penalties are an important part of a deterrent enforcement system. Finally, we applaud the EU's proposal to focus efforts on the IP enforcement activities of its trading partners. To ensure the success of European authors, their IP rights should be protected both at home and abroad.

As a final matter, we are uncertain about the PwC reference to a "perceived incompatibility between the EU IPR Directive and the EU data protection Directive". (p. 52) The EU Enforcement Directive provides a series of safeguards, including requiring respect for existing rules on data privacy. There is no incompatibility between the two Directives, and we would ask for greater clarity from PwC on this issue.

5. Flexible and harmonised telecommunications regulation is needed to foster innovation in next generation networks and services.

The PwC report recognises that continued innovation in communications services is important for the achievement of the goals of the Lisbon Strategy. Microsoft agrees with the report's general approach to communications regulation in "breakthroughs 3, 7 and 8" and in particular encourages efforts to reduce regulatory uncertainty and to foster flexible, lightly regulated policies across Europe.

While the technology-neutral approach of the new regulatory framework for electronic communications is an improvement over the prior telecommunications regulatory regime, Microsoft agrees that the EU should ensure that the implementation of the framework does not discourage investment in next generation networks and services. With the continued development of IP-based technologies, European regulators must now consider the application of the regulatory framework to new areas, such as Voice over Internet Protocol (VoIP), that traditionally have not been subject to regulation. The EU should promote investment in these innovative technologies by creating a light-handed regulatory regime and permitting self-regulation wherever possible. Furthermore, the EU should take the lead in encouraging national regulators to apply the framework in a consistent and harmonised manner so that regulatory uncertainty across Europe is minimised. As the PwC report states, regulatory uncertainty creates significant barriers to innovation in communications services and networks.

Microsoft strongly agrees that the flexible use of spectrum is also key to innovation in the ICT sector. As suggested in "breakthrough 8" of the report, a mixed system consisting of "spectrum rights" and "commons" is required. More flexible spectrum policies, including greater availability of spectrum on an unlicensed or shared basis, are necessary to allow more varied access to broadband and to permit new services to be offered. Microsoft agrees that the "spectrum dividend" from digital switchover is an important resource for the development of new wireless services. The EU should encourage

Member States to make a portion of the dividend available for interactive services on an unlicensed basis.

6. All Information Society stakeholders have a role to play in enhancing online security and safety.

The PwC report identifies in “breakthrough 9” many of the Internet’s security challenges. Microsoft believes that network and information security is a prerequisite for a well-functioning Information Society. Efforts to improve security, however, are hampered by the increasing – and increasingly aggressive – presence of criminals online. Among other things, criminals rely on spoof emails and websites to steal users’ identities and information. They also hack into secured websites to steal financial and other data, and then use that information to perform still other illicit activities. This type of criminal misconduct harms consumer confidence and reduces the uptake of ICT.

The importance of collaboration.

As the PwC report recognises, improving network and information security requires the combined efforts of government, the private sector and individual users. In this respect, the report follows closely the OECD’s Guidelines for the Security of Information Systems and Networks, which state that each participant in the networked economy has a role to play in ensuring security. We at Microsoft have long recognised the responsibilities that we and other stakeholders have in this process, and are actively working on security issues both on our own and in collaboration with the public and private sectors.

The private sector’s ongoing efforts to enhance network security.

Microsoft strongly supports EU efforts to improve network security and reduce cybercrime. For example, we supported creation of the new European Network and Information Security Agency, and encourage policymakers to adopt the Framework Decision on Cybercrime as quickly as possible. In addition, as the PwC report recommends, we are working on numerous projects to provide even greater levels of security. For example, our Trustworthy Computing Initiative helps integrate security solutions into all aspects of the computing environment. As part of the initiative, we are improving the process of updating software, expanding security training for customers and partners, and developing new technologies to protect users from malicious attacks online. Recently, for example, we released Windows XP Service Pack 2, which includes a range of new security features and technologies, such as a “Security Center” that allows users to check the status of essential functions at a glance.

The PwC report explains that the private sector cannot work in isolation. We strongly agree. That is why Microsoft works closely with law enforcement agencies to address the increasingly active presence of criminals online. As part of these efforts, we created a \$5 million reward programme to support individuals who provide information about alleged cybercriminals. This programme, combined with new technical and investigative techniques, has already led to information about a potential author of the Sasser worm, a virus that spread throughout the world in 2004. Indeed, Microsoft will grant \$250,000 to the Sasser informants if the individual in question is convicted. In addition, our Government Security Programme brings together public sector officials and Microsoft professionals to validate security features and pursue the development of additional security solutions. These efforts are part of a wide-ranging corporate initiative to advance the cause of network security.

The flaws of a manufacturer liability regime.

While we agree with many of the PwC report’s comments and recommendations, there is no justification for the report’s vague call “to create liabilities to enforce market players to find real solutions for ‘the darker side’ of the internet”. (p. 59) The report contains in most sections extensive citations, analysis and examples from the surveyed countries. When it comes to the issue of liability, however, there is no such support. The report does not identify a single country in which such a

regime has proven successful, or provide any detailed analysis as to why such a policy would be successful. The reason for these omissions is plain: no such proof exists.

Critics who call for the imposition of liability on manufacturers fail to appreciate fully that complete cybersecurity is impossible, and that the best possible security will ensue not from mass litigation, but from collaboration among industry partners, the government, and users. To this end, and as detailed above, Microsoft has made security its top priority, and the company is absolutely committed to developing ever more secure products. Indeed, it is difficult to imagine any greater incentive for the company's commitment to innovate and develop secure products than what it already faces today – namely, its customers' demands for security. The company is very proud of its various Trustworthy Computing-related efforts to meet consumer demands for security and respond to malicious attacks. The imposition of liability against this setting will do little more than raise the cost of developing secure products and distract from the true source of the cybersecurity threat: the malicious, criminal acts by third parties.

7. Reducing the digital divide through e-skills training will improve European competitiveness and help create a more social Europe.

One of the main goals of the Lisbon Agenda is "to create an Information Society for all". Still, the digital divide in Europe is growing. The PwC report accurately recognises that this problem is not solely due to insufficient availability of ICT infrastructure. Rather, it is in large part the by-product of a lack of education and training about new technologies that are already in place. Microsoft has witnessed such problems around the world, and supports the report's call for greater skills training to reduce the digital divide and improve European competitiveness.

EU and Member State efforts to improve education and life-long learning are positive and important first steps in the right direction. In particular, the provision of technical training to workers throughout their careers will help ensure that Europe's workforce adapts and flourishes in the information age. Microsoft supports these efforts because they will relieve the existing shortage of ICT skills in the European labour market. Of course, the private sector can play a valuable role in this process as well. That is why Microsoft and others in the ICT sector are working to reduce the skills gap by offering technical training and co-operating with universities and research institutions. For example, Microsoft launched in 2003 the Unlimited Potential (UP) programme. UP is a global initiative that focuses on improving life-long learning for underserved young people and adults by providing technology skills training through community technology and learning centres.

Finally, it should be remembered that ICT skills are about more than work and productivity; such skills are also important for personal fulfilment and achievement. People of all ages, educational and vocational backgrounds, and capabilities should learn to apply ICT skills in a wide range of contexts, ranging from communicating with friends and family, running home offices, shopping and banking online, to simply performing Internet research and creating a word-processing document. By providing people with these skills, they will be more willing to participate in the Information Society, and therefore also in the fast-growing economy.

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Microsoft appreciates this opportunity to comment on the PricewaterhouseCoopers report *Rethinking the European ICT Agenda – Ten ICT Breakthroughs for Reaching Lisbon Goals*, and would be pleased to discuss its views in greater detail. For further queries, please contact Marie Thérèse Huppertz, Director of Law and Corporate Affairs, at +32 2 550 06 10 or *via* email at marieth@microsoft.com.