Information Society Trends

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EDITORIAL

Commission adopts landmark draft directive on electronic signatures

On 13 May 1998, the European Commission adopted a proposal for a directive aimed at establishing a legal framework for electronic signatures in Europe. It would lay down rules concerning security and liability, thus ensuring that electronic signatures are legally recognised throughout the European Union (EU).

The setting up of an EU framework for secure on-line transactions aims to stimulate investment in electronic commerce, thus leading to benefits in terms of growth, competitiveness and jobs. Since most EU Member States have not yet adopted electronic signature laws, the move would ensure a harmonious environment from the outset.

Electronic signatures are a cryptographic technology that allow the recipient of data sent over electronic networks such as the Internet to determine the origin of the data (authentication) and to verify whether the data has been tampered with (integrity). The data is accompanied by a certificate issued by a certification service provider which allows the recipient to check the identity of the sender.

The draft directive is technology-neutral, thus taking into account the rapid pace of technological change. Its scope is limited to the supply of certificates to the public aimed at identifying the sender of a message, and does not apply to closed user groups such as corporate Intranets or banking systems, where a trust relation already exists.

Certification services could be offered without prior authorisation, but EU Member States would keep the option of setting up voluntary accreditation schemes for service providers. The directive would define essential requirements for certificates and service provider, as well as establish minimum liability rules for service providers, which would be liable for a certificate's content. It would also ensure that an electronic signature cannot be legally discriminated on the grounds that it is in electronic form.

In order to facilitate electronic commerce at global level, the proposal also includes mechanisms for co-operation with third countries, in particular regarding the mutual recognition of certificates on the basis of bilateral and multilateral agreements.

The proposed Directive, to come into force by 1 January 2001, comes as a follow up to the Commission's Communication on digital signatures and encryption of October 1997. (It draws upon input from the Copenhagen Hearing which was jointly held by the Commission and the Danish government in April 1998.

(Available on-line)

EUROPE

Trends: European trends are dominated by telecoms news which reflect the intense level of business activity triggered by the 1998 liberalisation. That includes a new alliance between Telecom Italia and C&W, the emergence or strengthening of new players such as Esprit Telecom, Carrier 1, KDD, etc. On the computer front, Europe is losing one of its last major PC maker with SNI's decision to sell its PC plant to Acer.

MARKET AND COMPANIES

The Italian national telecoms operator Telecom Italia and the UK telecoms group Cable and Wireless (C&W) said they have agreed to form a global alliance. This would include the setting up of joint venture which would be the world's second largest international carrier after AT&T with over 1,400 multinational clients in over 200 cities.

The partnership would not be sealed by a direct stake swap, at least for the time being, but Telecom Italia would acquire C&W assets worth over 1.7 billion Ecu. This would include C&W's 20% stake in the private French operator Bouygues Telecom, in which Telecom Italia already owns 10.8%, 20% of Cable and Wireless West Indies, and 5% of Cable and Wireless Inc. in North America. Telecom Italia has also agreed to integrate its 29% stake in the Cuban operator Etecsa into C&W West Indies.

The move could be a setback for the pan-European joint venture AT&T-Unisource Communications Services (AUCS), which has already been dealt a serious blow in 1997 by the decision of the Spanish incumbent operator Telefonica to quit the alliance and join forces instead with Britain's BT and America's MCI. Indeed, Telecom Italia was to take up a stake of up to 30% in AUCS, a move that is now threatened.

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Esprit Telecom, a fast-growing European telecoms start-up, said it has agreed to spend about 160 million Ecu on purchasing PlusNet, the corporate telecoms services arm of the German industrial conglomerate Thyssen. The move would consolidate Esprit's operations in Germany, where it would have 1,400 business customers. Esprit already has operations in 19 European cities in eight countries, and is building a pan-European broadband network connecting major European cities. The move also suggests that Thyssen is increasingly withdrawing from the German telecoms market.

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The German electronics giant Siemens has announced that its computer subsidiary Siemens Nixdorf (SNI) would cease to produce PCs and sell its Augsburg, Germany, PC manufacturing plant to the Taiwanese computer maker Acer.

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A group of former executives from the pan-European telecoms carrier Unisource has unveiled plans to set up a new European telecoms operator, Carrier 1. The new company, which would be based in Zurich, Switzerland, would launch voice, Internet and broadband services in major European markets on 1 August 1998.

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The Japanese telecoms operator Kokusai Denshin Denwa (KDD) has said that it would spend 2.4 million Ecu on taking a 51% stake in Corporate Network & Services (Conos), a German telecoms start-up established in 1994. The company would be renamed KDD-Conos. The move would be part of KDD's efforts to expand in Europe.

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The Scottish telecoms operator Scottish Telecom, a unit of the energy utility Scottish Power, has agreed to spend 90 million Ecu on purchasing the leading UK Internet service provider Demon Internet. The move would allow Scottish Telecom to expand its business to the rest of Britain and to the Netherlands, where Demon has operations.

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The incumbent Swiss telecoms operator SwissCom has agreed to set up a regional telecoms venture, Estel, in the French region of Alsace, with the local energy utility Electricité de Strasbourg (EDS). This follows the setting up of similar regional ventures in Germany, Tesion and Communications Network Services (CNS). The strategy aims at combining the private networks of the utilities with SwissCom's know-how. In the case of Estel, SwissCom would also benefit from EDS' cable TV operations.

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In a move to enter the Russian telecoms market, the US media giant News Corp. has agreed to take at least a 38% stake in PLD Telekom, a Nasdaq-listed fast-growing Russian telecoms group with operations in the former Soviet Union. The asset would be bought back from the UK operator Cable and Wireless (C&W). News Corp. intends to sell half its share in PLD to LogoVAZ, a major Russian industrial conglomerate. On top of this, News Corp. would also buy back C&W's 11% stake in PeterStar, a St. Petersburg-based local and long distance operator owned by PLD.

LEGISLATION AND POLICIES

The European Union (EU) has called upon the World Trade Organisation (WTO) to launch a debate on the removal of obstacles to the rapid development of electronic commerce. The EU suggested that international trade rules related to electronic transactions should be clarified, and in some cases revised, by December 1998. This concerns, for instance, an agreement that no duties be imposed on the import of on-line services and the effective protection of the privacy of individuals.

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The European Commission has presented its proposals for specific programmes implementing the forthcoming 5th Framework Programme for research and technological development (1998-2002). This concerns four thematic programmes and three horizontal programmes for a total amount of 16.3 billion Ecu.

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The European Commission has adopted a Communication aimed at establishing European position for the forthcoming World Radiocommunications Conference (WRC-99) to be held in the second half of 1999. WRC-99 will address key issues such as frequency requirements for global mass market radiocommunications applications, including satellite broadband services and third-generation mobile services.

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The Greek government has announced plans to privatise, in the fall of 1998, a further 10% to 15% of the country's national telecoms operator OTE. An initial 18.7% of OTE was sold-off in two steps in 1997.

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The Turkish government has decided to privatise the country's mobile phone system. Two Turkish groups, Turkcell and Telsim, have agreed to pay 420 million Ecu each to the national state-owned operator Turk Telekom for 25-year GSM licenses.

NORTH AMERICA

Trends: Mega telecoms mergers are back on the US agenda, this time involving SBC and Ameritech. Meanwhile, Boeing is further strengthening its satellite communications operations by joining in Ellipso. As for Lucent, it strikes back in the networking market.

MARKET AND COMPANIES

The US regional telecoms operators SBC Communications and Ameritech have unveiled a $62 billion worth merger plan, the largest in telecoms history, thus dwarfing previous mergers between US Baby Bells and the planned $37 billion worth merger between WorldCom and MCI. While there were still seven Baby Bells in 1996, the move would cut down this number to four following the $25.5 billion and $16.5 billion worth mergers between Nynex and Bell Atlantic and between SBC and Pacific Telesis Group. This shows that the 1996 US Telecoms Act has been more successful in triggering consolidation of the US telecoms industry rather than fostering competition.

Taking into account SBC's recent acquisition for $4.4 billion of the independent US carrier Southern New England Telecoms (SNET), the merged company would become the largest Baby Bell with annual revenues of over $42.8 billion and one third of the 178 million access lines existing in the USA. The venture would be completed through a stake swap that would leave SBC and Ameritech stakeholders with respectively 56% and 44% of the new group. The two partners hope to finalise the deal in a year, once it has been cleared by competition authorities on both sides of the Atlantic.

The move would not revolutionise the US telecoms landscape as the new SBC would continue to focus on the local market and would still not have the possibility to offer long-distance services in the markets it controls. But it would significantly extend SBC's market reach beyond its core Western and Southwestern regions. The only potential hurdle comes from SBC and Ameritech's cellular rivalry in the St. Louis and Chicago markets, where one of the partners would have to divest its cellular interests.

At international level, the deal would give SBC a strong foothold into the European market, where Ameritech has extensive operations. This includes a 42% stake in the incumbent Danish telecoms operator Tele Danmark, a 35% stake alongside Tele Danmark and Singapore Telecom in the consortium that owns 49.9% of the incumbent Belgian operator Belgacom, and a significant stake in the Hungarian operator Matav.

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The US computer giant IBM and the world's leader in PC chips, Intel, said they have agreed to team up to optimise JavaOS for Business software, a new operating system for network computing (NC) based on the Java platform. As part of the accord, IBM would also integrate Intel chips in its future lines of NCs instead of the PowerPC chip. The move closely follows an agreement between IBM and its US counterpart Sun Microsystems to jointly develop the JavaOS software and release it to manufacturers by mid-1998. This marked the first time the two computer rivals agree to team up to develop a common product. As for Intel, which originally opposed the concept of the NC, the deal indicates that the chip maker has now find an option to support NCs whilst preserving its interests. Both ventures are likely to reinforce Sun in its strive to impose Java as an industry standard. Java, a programming language which allows any kinds of terminals to easily work together, poses a threat to conventional operating systems such as arch rival Microsoft's Windows, which it could replace in the network environment.

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The US telecoms equipment giant Lucent Technologies said it has agreed to spend $1 billion on buying Yurie Systems, a US company specialised in high-capacity networks, in particular the asynchronous transfer mode (ATM) technology. The move seems aimed at allowing Lucent to mind the gap with fast-growing networking companies such as Cisco Systems, 3Com, Ascend or Bay Networks, which are emerging as key players in the rapidly expanding market for broadband communications systems.

INFRASTRUCTURE

The US aircraft and aerospace giant Boeing has been awarded a $1.4 billion contract by the US telecoms group Mobile Communications Holding (MCHI) to design, develop and deploy the Ellipso global mobile phone and data satellite system. Ellipso, in which Boeing would also take an equity stake, would compete with two other US-led global telecoms satellite systems, Iridium and Globalstar, which have a head-start. However, Ellipso could benefit from the fact that it would only be based on 17 satellites compared to 66 and 48 respectively for Iridium and Globalstar. This entails lower equipment and launch costs, and could allow for faster deployment and lower prices. The move amplifies Boeing's diversification into communications following its 1997 decision to a 10% stake in Teledesic, a global broadband satellite system sponsored by Microsoft chairman Bill Gates and telecoms entrepreneur Graig McCaw. Boeing is responsible for the conception and deployment of the Teledesic network which is to be based on 840 low-earth orbit satellites. Boeing's involvement increases the credibility of both projects.

MULTIMEDIA SERVICES AND PRODUCTS

The US PC software giant Microsoft has agreed to purchase the US Internet start-up Firefly Network, a leading provider of technology that allows Internauts to control exactly what personal information, for instance name, address, age, credit card number, interests, etc., they provide to any given Web site. The technology, to be integrated in Microsoft's Explorer browser, meets the Platform Privacy Preferences (P3P) privacy protocols agreed by the World Wide Web Consortium (W3C).

TECHNOLOGY

The US chip maker National Semiconductor has announced the release by mid-1999 of a technology allowing to integrate all the functions of a PC on a single chip. National's "PC on a chip" would come in different versions catering for the needs of different market segments such as desktop computers, notebooks, cars, consumer appliances, etc. The PC on a chip is being built around a technology developed by Cyrix, a US processor company with which National fully merged in November 1997.

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The US PC software giant Microsoft and the Japanese consumer electronics giant Sony said they have agreed to join forces to develop a single standard that would link up PCs and home appliances such as TV sets, camcorders or VCRs.

ASIA AND PACIFIC

Trends: The highlight of Japanese news is the emphasis placed on cryptography, both at regulatory level with the adoption of a government report on certification and authentication, and at market level with NTT's a new public-key encryption system.

LEGISLATION AND POLICIES

The Japanese Ministry of Posts and Telecoms (MPT) has unveiled plans to provide 1.4 billion Ecu in funding to help the country's broadcasters to convert terrestrial TV signals into digital ones. While the estimated 4.7 billion Ecu worth investment required to switch to digital broadcasting acts as a deterrent for industry, the MPT hopes the stimulus package will allow to switch to digital TV in Japan by the year 2000.

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The Japanese Ministry of Justice's Study Group on the Legal System of Electronic Commerce has adopted a report that sets the ground for the setting up, by 2001, of a legal framework for electronic certification and authentication services in Japan. The report says that legislation securing electronic applications is needed to promote electronic commerce. The report also calls for electronic signature systems to be based on the existing Japanese commercial registration and notarisation systems.

TECHNOLOGY

The Japanese incumbent telecoms operator Nippon Telegraph and Telephone (NTT) has announced the development of Efficient Probabilistic Public-Key Encryption (EPOC), a public-key encryption system which it claims is more secure than the most secure existing encryption schemes, including the RSA, elliptic curve and Rabin encryption schemes. NTT intends to incorporate EPOC in systems providing enhanced on-line security on the Internet.

SOCIAL, SOCIETAL AND CULTURAL

The Japanese government plans to provide additional funding to connect the country's schools to the Internet. The goal would be to wire up 38,000 public schools with a 1.5 Gigabit network by the year 2000 instead of 2003.