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Commission for Europe

**UNCTAD-UNECE High-Level Regional Conference
for Transition Economies**

ICT and E-Business Strategies for Development

Palais des Nations, Geneva, Switzerland
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Chairman's summary

1. The High-Level Conference on ICT and E-Business Strategies for Development, jointly convened by the United Nations Conference on Trade and Development (UNCTAD) and the United Nations Economic Commission for Europe (UNECE) from 20 to 21 October 2003, brought together more than 80 participants from 32 countries, representing mainly Governments of countries with economies in transition, as well as regional and international organizations, private-sector entities and other non-governmental organizations (NGOs).

2. During this two-day conference 20 speakers, including four at the ministerial level, made presentations. The presentations and discussions focused on policies and strategies to develop the information economy in the region. The conference was convened one year after the adoption of the Bucharest Declaration, which was the regional contribution to the World Summit on the Information Society (WSIS), with a view to contributing further to the preparations for the first phase of WSIS (Geneva, December 2003) and UNCTAD XI (Brazil, June 2004). The conference addressed the following main issues relating to ICT and e-business strategies for economic development:

- ICT, the Internet and economic performance in a globalized marketplace: implications for emerging transition markets;
- Designing and evaluating national ICT and e-commerce strategies;
- Designing and evaluating regional ICT and e-commerce strategies: a pan-European perspective in the context of the WSIS;
- Adapting the legal and regulatory environment; and
- ICT and e-business applications for transition economies, such as B2B e-procurement and B2C platforms, e-services, open-source software and e-payments and e-finance for enterprises.

3. The conference was opened by Mr. Carlos Fortin, Deputy Secretary-General of UNCTAD, and Mr. Patrice Robineau, Senior Adviser to the Executive Secretary of UNECE. The conference concluded with a ministerial round table in which six ministers from transition economies participated, and with addresses by Ms. Brigita Schmögnerova, Executive Secretary of UNECE, and Mr. Carlos Fortin. The conference was chaired by H. E. Mr. Clyde Kull, Permanent Representative of Estonia to the United Nations in Geneva, while the ministerial round table was moderated by his H. E. Mr. Karen Chshmaritian, Minister of Trade and Economic Development of Armenia.

4. The Chairman presented his summary to the conference, including 17 recommendations that were approved by consensus. The summary is also available on the UNCTAD website at www.unctad.org/ecommerce.

ICT, the Internet and Economic Performance in a Globalized Marketplace: Implications for Emerging Transition Markets

5. The first plenary session considered the key elements of the ICT and e-business strategies and policies that need to be considered by Governments and stakeholders in relation to their particular situation. The experiences of a number of developed countries have illustrated the positive effect of ICT on both economic development and state performance.

6. In this context, the keynote speaker, H. E. Mr. Dmitry Milovantsev, Deputy Minister of Communication and Informatization, Russia, presented his views on ICT and economic performance, stressing the positive impact of the former on economic growth and the functioning of public authorities. He underscored the importance of improving the quality of human capital and moving from hierarchical relations to those based on networks. Turning to the question of Russia's ICT strategy, he highlighted the fact that the strategy is based on the country's competitiveness in natural

endowments, human potential and technological innovations and that it has several objectives. The first is to enhance investments in both human capacity building and infrastructure development and persuade leading global ICT firms to base their R&D activities in Russia. Another is to improve on traditional strengths by integrating ICT into natural resources management systems in order to attract IT-based outsourcing and adapt global best practice models to the Russian economic situation. Finally, the strategy focuses on the adoption of consistent ICT policy in order to ensure an increasing return on investment; increase ICT usage in the key sectors of the Russian economy; and eventually stimulate IT services and software exports.

7. Mr. Milovantsev formulated a number of recommendations, in particular with reference to the leading role that Governments have to play in the adoption of ICT, and the need to invest in critical factors such as infrastructure and human resources. He stressed the fact that each developing and transition economy should focus on its own priorities while using ICT as leverage to attain accelerated growth and development goals.

8. The presentation by Professor Donald Siegel of Rensselaer Polytechnic Institute (New York State, United States) reviewed empirical studies on the impact of investment in ICT on productivity, wages and labour composition. Several stylized facts emerged from this literature. There is a positive correlation between almost any proxy of ICT investment and productivity. These results, in conjunction with voluminous qualitative industry-specific evidence, suggest that the social returns to ICT are fairly high. The bottom line is that there is growing evidence to indicate that ICT and the Internet constitute a general-purpose technology (GPT). A GPT is a technology that causes dramatic changes in the whole economy by stimulating new applications and industries and by modernizing existing sectors.

9. Investment in ICT also appears to exacerbate “skill-biased technological change” (SBTC); in other words, improvements in technology favour more highly educated and skilled workers. The SBTC phenomenon is more prevalent in developed countries than in the developing world. ICT is also associated with workplace transformation and other types of organizational changes. International evidence suggests that developing countries are falling further behind in the “digital divide”, as well as in the “learning divide”. To alleviate this condition, a set of policy recommendations to diminish these gaps and enhance the social returns to ICT in developing countries was presented.

10. The presentation by Professor Matti Pohjola of the Helsinki School of Economics, Finland, covered ICT and economic performance. The benefits from the production and use of ICT should accrue as improvements in productivity and economic growth. But while ICT use seems to have had a substantial impact on the performance of the US economy, the evidence for other countries is much weaker.

11. There are at least three possible explanations for this apparent “productivity paradox”. The most obvious one is the fact that many countries have yet to invest much in ICT. The second reason is that, even if they have done so, they may not have invested enough in complementary infrastructure, such as education and skills, to reap the benefits from ICT investment. Technology by itself is not a solution to any development problem; it only provides an opportunity. The third explanation is that ICT seems to mostly enhance productivity in service sectors (wholesale and retail trade, banking and finance, business services, etc.) that may not yet be as developed in transition and developing economies as in high-income countries.

12. While the adoption of ICT may not be sufficient to produce benefits from its use, it is definitely a prerequisite. Policy makers’ attention should thus be drawn to the determinants of adoption and diffusion. The relative price of ICT and the level of education are the factors that matter most for ICT adoption and diffusion. Training and education are important not only for providing skills for work and production, but also for providing a sufficiently strong demand base for digital or “knowledge” products.

Designing and Evaluating National ICT and E-Commerce Strategies

13. The second plenary session reviewed the experiences of selected transition economies, namely Armenia, Kyrgyzstan and Estonia, in implementing national strategies and policies, including the main difficulties met as well as potential means to overcome them. These difficulties relate to awareness building; telecommunications; and access and infrastructure to improve connectivity, increase access and lower costs. They also relate to the legislation needed to create an enabling regulatory environment for e-commerce activities, to capacity building and human resources development, and to the need for secure banking and online payment systems, logistics and other business services in order to diminish transaction costs. The session was moderated by John Burley, Director, Division for Services Infrastructure for Development and Trade Efficiency (SITE), UNCTAD.

14. H. E. Mr. Karen Chshmaritian gave an overview of the situation of the knowledge-intensive ICT sector of the Armenian economy. It is based on the country's comparative advantages such as a qualified and experienced labour force, a high level of specialized education, developed ICT R&D infrastructures, a heritage and traditions in the ICT sector, and significant diaspora resources.

15. Mr. Chshmaritian outlined the advances made in the area of economic policy in Armenia in recent years. Since 1999, the Government of Armenia has followed a consistent policy of promoting and developing the ICT sector in the country. In 2000, the IT sector was acknowledged by the Government as the priority sector for the Armenian economy, and a concept paper for IT industry development was adopted in 2001. To promote electronic trade in Armenia, a draft law based on the provisions of the concept paper on the Electronic Document and Electronic Digital Signature has been prepared and submitted to the Government for approval. The draft law takes into consideration the legislative experience of other NIS countries in this field.

16. In recent years, the IT sector in Armenia has demonstrated dynamic annual growth of 12 to 15 per cent. The share of this sector in GDP is 2 per cent and the number of actively operating companies in the sector has risen to 120. Their export revenues currently amount to US\$50 million. At the same time, the level of productivity and work quality in these companies meets the appropriate international standards. Foreign capital participation in the IT sector is relatively high. More importantly, 85 per cent of demand for this sector's output comes from abroad. The contribution of the diaspora business community to the development of the IT sector of the country is significant. Meanwhile, new developments are occurring in a number of fairly advanced and specialized ICT subsectors.

17. To maintain effective links between the business community and the Government and to improve public-private partnerships, the IT Development Support Council, headed by the Prime Minister, was founded in 2001 by presidential decree. In 2002, with the support of the World Bank, the IT Enterprises Incubator Foundation was established. The main objectives of the Incubator are promotion of private-sector development and provision of the Armenian IT companies with a package of necessary services (standardization, educational and training facilities, etc.) for their business activities. To promote e-commerce and facilitate electronic trade, a number of marketing centres and other relevant infrastructures have recently been established in Armenia.

18. H. E. Mr. Muktar Djumaliev, First Deputy Minister of External Trade and Industry, Kyrgyzstan, gave an overview of the Kyrgyz ICT National Strategy and stressed that his country's highly educated population was very competitive in terms of its labour costs. In addition, the Kyrgyz Republic is quite active in the IT sector, producing polycrystal and monocrystal silicon used in the hardware industry, and offering offshore programming for countries such as Germany, Italy and the United States. As for Internet services, there are 16 Internet providers and broadband has developed over the past few years. Mobile communications in the Kyrgyz Republic rely on three different standards: TDMA, GSM and CDMA.

19. The Kyrgyz ICT National Strategy focuses on three areas: e-government, e-economy and e-education. For e-government, there are four objectives: mastering of informational systems; e-governance; development of an appropriate personnel policy in the context of ICT; and further development of the information infrastructure for public administration at the national and regional

levels. In the e-economy, the main directions include business information, e-commerce and the constitution of the Central Asian Regional ICT business centre. For e-education, the focus is on the adoption of ICT in education and educational management, along with development of human resources and capacity building. For e-commerce, the main objectives include the development of a new industry to strengthen the competitiveness of Kyrgyz goods and services and fast integration into the regional and world economies.

20. In its first stage (2003–2005), the national ICT strategy of the Kyrgyz Republic has focused on the adoption of e-commerce laws and regulations, the development of offshore zones, the creation of awareness on new online business opportunities, the creation and improvement of delivery systems, the inclusion of the Banner Network of Kyrgyzstan in the banner exchange system of the CIS and other foreign countries, and the development of projects on electronic and online payments. Examples of activities in the first phase include the e-METI and e-Trade projects. In its second stage, from 2006 to 2010, the Kyrgyz Republic will start implementing the Mobile Economy.

21. The third speaker in this session, H. E. Ms. Signe Ratso, Deputy Secretary General, Ministry of Economic Affairs and Communications, Estonia, gave a presentation on her country's progress towards becoming an information society. Twelve years ago, Estonia had to start from scratch; the existing telecommunications infrastructure was outdated and there was no regulatory environment in place. Owing to the proximity of more technologically advanced countries such as Sweden and Finland, as well as Estonians' ambition to adopt modern technology, the development of the information society quickly took off. Since 2000, the Estonian telecommunication market has been fully liberalized, and most of the necessary ICT-related legislation is now in force. The main tasks of the Government now include ensuring competition, building legal and financial frameworks, and acting in areas where impetus is needed for the further development of the information society – education and local communities.

22. Ms. Ratso stressed the importance of public-private partnerships for the development of the information society. In Estonia, the Look@World foundation is providing basic computer training and creating public Internet access points. In addition, the foundation has been acting as a partner of the Government in developing applications for the national ID card, which has two main functions: it acts as an electronic identity card and is used for giving digital signatures.

23. At this stage, the challenges faced by Estonia include creating awareness of the benefits of ICT in order to encourage the 40 per cent of Estonians who do not yet use the Internet to do so, and developing partnerships at different levels to foster the development of cross-institutional e-services.

Designing and Evaluating Regional ICT and E-Commerce Strategies: A Pan-European Perspective in the Context of the WSIS

24. The Bucharest Declaration expressed the political willingness of Governments of transition economies to promote ICT and e-business as vehicles for economic development in the region, while taking into account cultural, social and economic disparities. Regional strategies for achieving ICT deployment, such as the Electronic South Eastern Europe Agenda for Development of the Information Society, were discussed in this session to demonstrate the potential impact of regional integrated approaches on national e-development strategies. Mr. John Dryden, Deputy Director, Directorate of Science Technology and Industry, OECD, moderated the third plenary session.

25. In his presentation, Professor Marius Guran, Advisor to the President of Romania on ICT, described and analysed the ICT and e-commerce strategies in the South Eastern Europe (SEE) region. The SEE area represents high potential for growth in ICT. Discrepancies in progress on the way to the information society can be turned into advantages through appropriate national policies and international cooperation, by coordinating the various initiatives, programmes and projects promoted by the European Union, NATO, the United Nations, NGOs and other relevant institutions.

26. In November 2002, the Bucharest Declaration drew a vision of an information society beneficial to all (e-inclusion). The Declaration has seven principles and four priority themes. The seven principles were the following: securing access to information and knowledge; promoting universal access at affordable cost; promoting linguistic diversity and cultural identity; developing human capacity through education and training; setting up an enabling environment, including legal, regulatory and policy frameworks; building confidence and security in the use of ICT; addressing global issues. The four priority themes for e-strategies included e-government, e-business, e-society and e-education.

27. Professor Guran pointed out that the adoption and implementation of national programs, projects, and strategies were essential and would create conditions that would make international help more efficient. He presented case studies from Romania as examples of good practices for the SEE area.

28. In the next presentation, Mr. Mario Apostolov, Regional Adviser and UNECE Representative in the Stability Pact–eSEEEurope Initiative, gave an overview of the activities and results of the Initiative. The lower level of Internet penetration in South-Eastern Europe (2–6%) compared to the EU level (15–65%) confirms the existence of a digital divide and the urgent need for quicker information society development in that part of the European continent. The eSEE Initiative, aiming at building capacity for the information society in South-Eastern Europe, was launched at the request of the Government of the United Kingdom in 2000. Its objective was to provide assistance to the countries of the region with reference to the possibilities offered by ICT. The initiative involves the South-East European countries that are not candidates for EU membership (Albania, Bosnia and Herzegovina, Croatia, The former Yugoslav Republic of Macedonia, Moldova, Serbia and Montenegro) but wish to keep in line with the European Union's achievements and legislation in the area of the information society. Since March 2002, the Stability Pact has accepted a new regional approach, and Serbia and Montenegro has become the first regional chair of the Initiative.

29. Further steps to develop the Initiative included the signature of a Letter of Intent by ministers of the region on the European Ministerial Conference in Ljubljana in June 2002, followed by preparatory work on the eSEE Agenda for the Development of the Information Society. This document, being in line with the eEurope 2002 and 2005 Action Plans and the eEurope+ plan of candidate countries, was signed and accepted by the ministers from South-Eastern European countries at the Regional Ministerial Conference on Telecommunication for Development held in Belgrade on 28–29 October 2002.

30. Two major publications related to the Initiative and related policy guidelines are "Common Guidelines for National Information Society Policies" and "Terms of Reference for Information Society State Bodies". Signatory countries accepted the obligation to adopt those guidelines by 1 November 2003 as a basis for national information society policies, and to create cabinet-level bodies in their respective countries to tackle those issues.

31. Acknowledging the lack of confidence in the Internet for critical e-applications, Mr. Krastu Mirski and Mr. Alexander Ntoko, both from the Telecommunications Development Bureau of ITU, addressed the issue of trust and security in e-business and other ICT applications. Building trust and security for ICT applications is of great concern to several Governments and is also a high priority for the WSIS discussions. The presentation highlighted some of the challenges involved in building online trust and security, and addressed some technological strategies, policies and initiatives. For building trust in e-applications, it was concluded, the following features are needed: data confidentiality (information accessed only by those authorized), data integrity (no information added, changed or taken out), strong authentication (parties are who they claim to be), non-repudiation (originators cannot deny the origin of transactions) and an infrastructure of trust (automated checking of identities).

32. The digital signature is a valuable technology tool for identifying people on the Internet and solving some security problems. Notably, the digital signature guarantees data integrity for e-application transactions, data confidentiality when combined with encryption algorithms, non-replay

in combination with content validation (time stamps), positive authentication of parties, and content non-repudiation or non-deniability for e-application transactions. However, some challenges remain, such as acceptance of digital signatures across multi-jurisdictional PKI (public key infrastructure) domains, adoption of policies for generic identity certificates (PKI), attribution of certificates, elaboration of harmonized and technology neutral e-legislative framework and enforcement mechanisms, and CA-CA inter-domain interoperability across national boundaries.

33. Governments can be active in two different areas: the design of national/regional policies for the management of Internet protocol resources (Internet protocol addresses and domain names) and the creation of a suitable environment for e-applications (accreditation of certification authorities, control and enforcement mechanisms' central role in generic digital credentials, harmonized regional framework e-legislation). In other words, international and in particular regional cooperation in the security domain is of paramount importance.

Adapting the Legal and Regulatory Environment

34. ICT invite countries to revisit many parts of their laws, including regulation of telecommunications, security, taxation, access to public information, intellectual property, confidentiality, personal data protection, and cyber-crime. In many cases, legislation in developing and transition countries still needs to be adapted to the development of the use of new technologies, since inadequate legislation prevents trust between commercial partners and jeopardizes the conduct of domestic and international trade.

35. Plenary session 4 started with a videoconference with Mr. Erkki Liikanen, the European Commissioner for Enterprise and Information Society in Brussels. The videoconference was followed by presentations from Mr. Renaud Sorieul, Secretary to UNCITRAL, and Mr. Carlos Moreno, Legal Adviser of UNCTAD. Mr. Pape Gorgui Touré, Chief, Policies Strategies and Financing Department, Telecommunications Development Bureau, ITU, moderated the session.

36. The session covered various specific points relating to legal and regulatory aspects of ICT, such as recognition of the legal validity of electronic messages, electronic signatures and online dispute resolution mechanisms. It also considered the development of international legal instruments to deal with selected issues that are not yet covered, in particular in the area of electronic contracting, with a view to achieving further harmonization of national laws.

37. Mr. Liikanen stressed that setting up an independent and technologically neutral regulatory framework for ICT is critical for the development of electronic services and e-commerce. The issue has attracted attention from all stakeholders. In order to derive advantages from ICT, countries need to set up a development space supported by four pillars: a regulatory framework; investments in ICT; facilitating an information society, improving the use of ICT, and enhancing Internet services for development; and the reorganization of ICT-related business, skills and knowledge.

38. The EU regulation framework for e-services is based on technological convergence, which requires rules and measures for business sectors to create market competition in favour of consumers, who are new key actors in the digital economy. In this context, it is important to build up trust to mobilize the interest of consumers. The framework applies to all current and future EU member countries. The key principle of the European Union's implementation of the framework illustrates that adequate regulations support competitive markets. Now the European Union is extending its regulatory practices through a series of discussions with a number of Latin American and Asian countries with a view to sharing experiences and best practices. As for regulations on e-commerce, the European Union has set up several working groups to resolve issues such as spam and the use of e-signatures. Conclusive partnerships with the private industry will be essential in creating software solutions to ensure legal certainty in these areas.

39. In his presentation Mr. Sorieul focused on the need to implement a flexible legal framework to create trust and certainty. He presented the work carried out by UNCITRAL on e-commerce, which to date has focused on developing a set of legal principles that would provide a basic legal framework for

communication through electronic means. The key element of that work has been to formulate criteria for functional equivalence. However, the growth in the use of e-commerce brought about the emergence of a number of other legal issues that require consideration and resolution.

40. The implementation of international common standards is essential for the smooth and seamless operation of electronic authentication. The EU Directive on Electronic Signatures has achieved a high level of harmonization, which Member States are implementing into domestic legislation. This, however, is the central difference between harmonization in the European Union and global harmonization. Unlike the EU directives, UNCITRAL model laws are not binding on States, which remain free to adopt them or to expand or restrict their scope. Cross-border recognition of signatures and their supporting devices remains a largely unsettled issue.

41. Further to the two model laws adopted by UNCITRAL in 1996 on e-commerce and in 2001 on electronic signatures, the suggestion was made to develop a new international instrument in order to take into account the needs of e-commerce in the light of practical experience. This international legal instrument would address aspects of contract formation and performance that might be affected by the ways in which electronic transactions are currently structured and in which those structures are being modified to facilitate e-commerce.

42. Mr. Carlos Moreno addressed the issue of online dispute resolution (ODR). In order to implement a basic legal infrastructure for building trust, three main elements are important: legal recognition of e-messages, e-signature legislation and dispute resolution. The main barriers to online trading include the distance between the parties, linguistic and cultural differences, the determination of the applicable law and the competent jurisdiction, the application of judgements and their significant additional costs. Since traditional mechanisms for the resolution of disputes are not always adaptable to electronic transactions, consideration has been given to extrajudicial mechanisms for dispute resolution that would offer a rapid and less costly settlement mode. There are numerous possible contexts for ODR – for example, mediation on online auction sites and arbitration regarding domain names.

43. ODR is still at an early stage and must be expanded into an equitable and inexpensive mechanism for the resolution of disputes arising from online transactions. Its use should be promoted in order to strengthen consumer confidence in the new ways of doing business. Recommendations were made in order to create awareness of and promote the use of ODR as an alternative to litigation, with a view to creating an enabling environment that would take into account cultural diversity.

ICT and E-Business Applications for Transition Economies

44. Sessions 5 and 6 addressed specific applications and solutions that might increase the competitiveness of transition economies in the global e-market place. Session 5 on e-business was moderated by Mr. Ramamurti Badrinath, Director, Division of Trade Support Services, ITC; session 6 on e-finance was moderated by Mrs. Carol Cosgrove-Sacks, Director, Trade Development and Timber Division, UNECE.

45. In his presentation, Mr. Henri Barthel of EAN International focused on the cost reductions that could be achieved by enhancing visibility in supply chains. The current technology enables the collection and exchange of massive amounts of data coming from multiple sources. Transforming these data into meaningful information is a major challenge for many companies. A key enabler for these processes is the availability of standard means to identify products and relevant parties as well as standard protocols to facilitate data communications between multiple computer applications. The benefits of using a set of consistent global standards to connect movements of physical goods with related information flows were addressed. The applications of automatic data capture technologies, from bar codes to radio frequency identification, were also discussed. Finally, the challenges and opportunities presented by electronic data interchange applications were discussed. The application of automatic data capture and e-commerce technologies in open supply chain environments is a reality for many companies today, but there is still a long way to go to fully exploit the potential benefits.

46. Mr. Rishab Aiyer Ghosh of the International Institute of Infonomics of Maastricht University in the Netherlands addressed the question of open-source or free software (OSFS). OSFS has in recent years become one of the most talked-about phenomena in the ICT world. This is remarkable, not only because OSFS existed for many years as a volunteer-driven success story before being discovered by big business and now government, but also because free software largely developed quietly on its own without the international attention that it now receives. The Free/Libre/Open Source Software (FLOSS) study that Mr. Ghosh coordinated with the support of the European Commission in 2002 showed that the most important reason for developers to participate in open-source communities was to learn and develop new skills for free. These skills help developers get jobs and help small businesses. The most important reasons given by users of OSFS were not lower costs but higher security and better performance in comparison with proprietary software.

47. Inexpensive skills development is an important reason for transition economies to promote OSFS. But another reason, one that does not appear in surveys in richer countries, is cost. Total cost of ownership studies show varying results in rich countries, where labour costs are high and the relatively low licensing fee of OSFS need not necessarily reduce the total cost of using and maintaining software. But in transition economies, even after discounts, the price tag for proprietary software is enormous in purchasing power parity terms. In the interest of sustainable long-term growth and ICT development, transition economies should adopt and promote OSFS in order to develop local skills and businesses and avoid unnecessary expenditure.

48. Mr. Vladislav Oulendev from eHouse Holding, Russia, presented B2B and B2C projects of his company. One of them, eMatrix, is the first independent electronic marketplace for the IT market in Russia and provides IT business information and opportunities. Currently, over 2,500 companies are registered in the system and over 20,000 orders are placed, which represent more than US\$120 million daily. eMatrix gives real-time information about the actual market situation, makes searching for sellers and buyers easier, reduces expenses and speeds up business transactions. Any company can easily get detailed information about sectors of the IT market. The eMatrix system optimizes regular business processes for enterprises (sales, supply) and enables quicker searches for products and suppliers.

49. In his presentation, Mr. Scholl, Deputy to the Director, Telecommunication Standardization Sector, ITU, outlined the work of ITU-T in facilitating e-services. He first gave an overview of ITU activities and the three sectors in which ITU is actively involved: ITU-D, which focuses on assistance to developing countries; ITU-R, which deals with radio spectrum and satellite slot allocation; and finally ITU-T, which deals with standard-setting processes. ITU-T has undergone dramatic changes in the last few years to respond to the need for standardization and interoperability of ICT, which at the moment is mainly driven by the private sector in developed countries. Delays in approval of standardization procedures have been dramatically reduced through the use of ICT. Mr. Scholl also emphasized the need for security that emerged from the recent fundamental shift in the ICT industry and gave an overview of the available encryption mechanisms such as Secret Encryption Key, Public Key Encryption and Public Key infrastructure.

50. Mr. Scholl stressed ITU-T's involvement in workshops dedicated to e-health and e-government and its future role in the automobile industry, in order to assess the need for a new standardization process. He also informed participants that ITU-T study groups had been set up to implement standardization in the application of e-services.

51. Session 6 addressed the issues of electronic payments, e-banking and e-finance and their contribution to improved payment records and access to credit for transition both locally and internationally.

52. The first speaker, Mrs. Anne L. Cobb, President, Visa International, CEMEA, introduced Visa International, a global association that helps its 21,000 member banks all over the world make payments safer, more convenient and more efficient. As an example, Visa is upgrading the global payments infrastructure by deploying a brand new Internet provider-based access network that

connects each member bank to the VisaNet processing systems. Also, Visa is enabling growth in e-commerce through merchant monitoring and cardholder authentication technologies.

53. The progressive move to electronic payments offers significant economic benefits. In all transition economies, payment cards are drawing people en masse into the banking system. This liberates capital and liquidity, reduces shadow economies and maximizes tax revenues. Furthermore, at the macroeconomic level, electronic payments are substantially cheaper than paper- or cash-based equivalents. Recent studies suggest the potential for considerable aggregate savings, and that those efficiencies might translate into a 1 per cent saving in GDP. Global Insight, an econometric forecasting firm, goes so far as to suggest that a 10 per cent shift in total expenditure towards using payment cards can lead directly to a .5 to 1 per cent increase in consumer spending – which in turn fuels GDP growth. These apparent benefits should draw the attention of policy makers across all transition economies.

54. The next speaker, Mr. Olari Ilison, Head of E-Banking, Hansabank, Estonia, gave an overview of this largest commercial bank in the three Baltic countries, focusing on its e-banking activities. Since its establishment in 1991, Hansabank has served all customer segments, also offering through its subsidiaries a variety of other financial services such as asset-based financing, life insurance and asset management products. Hansabank has provided Internet banking facilities to its customers since 1996, when it was one of only 20 banks worldwide capable of rendering such service. Over the years, e-channels have become the main channel for routine transactions. Thus, in the case of Estonian corporate customers, 97.5 per cent of all domestic payments are executed through remote channels.

55. While developing e-services, Hansabank has also cooperated closely with government institutions. This has enabled customers to use e-services provided by the Estonian Tax Board. 35.6 per cent of all income tax declarations by private individuals for the year 2002 were submitted via the Internet. New services for companies, such as online alerts of transactions or e-bills, enable corporate customers to enhance their current services or create new ones. Services requiring digital signatures will be the next technological and legal challenge for all parties involved. Standardization of information exchange between banks and their customers will increase back-office efficiency on both sides.

56. The last speaker in the session, Mr. Rouben Indjikian, Senior Economic Affairs Officer, Electronic Commerce Branch, SITE, UNCTAD, reviewed the main global trends in e-payments, e-banking and e-finance with a focus on transition-economy enterprises' access to e-finance and finance. Stressing the growing importance of e-banking and e-brokerage in financial intermediation in both developed and developing economies, he presented the main instruments of e-payments in B2B and B2C transactions, singling out smart cards as a potentially important means of making e-payments in both types of transactions.

57. He emphasized the potential importance of e-payments and e-banking for small and medium-size enterprises (SMEs) and for their improved access to capital, particularly in transition economies. While SMEs are still perceived as high risks by banks, they can also turn to alternative sources of financing such as venture capital, leasing, credit insurance and factoring. Public support for these innovative forms of financing can correct market failure by enabling the servicing of SMEs on reasonable financial terms. Local and international public-private partnerships are equally important for encouraging SMEs entering the world of e-business and e-finance. New opportunities to access e-finance emerge from the participation of SMEs as suppliers in global and regional e-marketplaces, public and private e-procurement platforms and others. As trusted suppliers, they might start receiving pre-export and working capital finance. Advanced Internet technologies and the introduction of smart cards might give enterprises an incentive to launch e-business activities and seek online short- or longer-term trade finance.

High-Level Round Table: ICT and E-Commerce Strategies for Development in Transition Economies

58. The ministerial round table was devoted to the discussion of the main barriers at the national and regional levels to implementing ICT and e-business strategies. The ministers singled out the national industries making the most progress in the application of e-business in their countries; focused on key policy areas that need to be addressed by their Governments in order to create an enabling environment for e-commerce and the information economy as a whole; and stressed the importance of the international community's role in helping their countries to enhance e-commerce and bridge the digital divide. The panel included H. E. George Kakuberi, Deputy Minister of Transport and Communications, Georgia; H. E. Mr. Muktar Djumaliev, First Deputy Minister of External Trade and Industry, Kyrgyzstan; H. E. Mr. Dmitry Milovantsev, Deputy Minister of Communication and Informatization, Russia; H. E. Sherali Najmudinov, First Deputy Minister of Communication, Tajikistan; and H. E. Alisher Khadjaev, Deputy Director, Communication and Information Agency, Uzbekistan. H. E. Mr. Karen Chshmaritian, Minister of Trade and Economic Development of Armenia, moderated the round table.

59. Participants recognized that bridging the digital divide and benefiting from new opportunities provided by ICT were among the main objectives of their national development strategies. They strongly believed that ICT and e-business were powerful tools supporting sustainable development, improving productivity, increasing efficiency, and enhancing the quality of goods and services. ICT can also facilitate and promote international trade and investment, thus contributing to economic and social development. While the representative of Russia singled out standardization as the main challenge in using ICT, speakers from other CIS republics stressed that their countries still faced difficulties accessing ICT owing to the lack of adequate investment and infrastructure.

60. It was emphasized that the current international momentum for ICT for development represented a true incentive for developing countries and transition economies to actively promote the national and regional development of ICT, and to increase their cooperation in order to broaden their participation in the digital economy. The round table considered various successful economic ICT applications in selected industries, as well as challenges and potential solutions that could be implemented to further exploit ICT opportunities.

61. In the conclusions, H. E. Mr. Chshmaritian emphasized that governments, with the support of all stakeholders, should act as model users and key partners in the development of ICT and e-business. They should create an enabling environment for the deployment, adoption and use of ICT by implementing strategies and policies based on the economic and social context of each country. To that end, public and private partnerships should be encouraged. The role of the civil society at large was also emphasized.

62. It was noted that ICT and e-business strategies needed to take into account all relevant factors such as public awareness, physical and legal infrastructure development, human resources development, and financial, security and privacy aspects.

63. It was generally thought that the identification and sharing of experiences and best practices in the design and implementation of e-strategies at a regional level was crucial to ensure harmonization and interoperability with global e-commerce systems. Regional cooperation is of utmost importance in ICT and e-business development to support the work already undertaken in regional and international frameworks and to stress the importance of the continuation of this work and its integration into global e-commerce systems.

64. The round table considered international assistance essential for supporting national development strategies. UN bodies, including the UN ICT Task Force, ITU, UNCTAD, UNECE, ITC, UNIDO, and other global and regional organizations such as the European Commission, OECD, the World Bank, EBRD and EIB should further assist transition economies in promoting the development and use of ICT and e-commerce for economic and social progress. Their support should include ICT-

related investments and technical assistance, including in legislative processes as well as in organizing awareness-raising events on ICT opportunities and on up-to-date ICT solutions that can improve telecommunication infrastructure and key elements of the supply chain such as B2B and B2C e-marketplaces, e-finance, e-logistics and others.

Recommendations

65. In order to support the position of transition economies on the international scene in the area of ICT and e-business strategies, there was general consensus on the following recommendations that were made during the various thematic sessions. Delegates agreed that their countries should act to:

- a) Enhance the capacity of ICT infrastructure by increasing access and availability and reducing Internet access costs for businesses and households, *inter alia* by developing community access points organized on cyber-post principles, integrating telecommunications infrastructure with post offices;
- b) Encourage providers to introduce alternative (and cheaper) devices and consider the possibilities of wireless technology;
- c) Develop ICT and e-business infrastructure that is technology neutral and supports implementation of national and regional e-strategies;
- d) Use ICT to enhance transparency, accountability and efficiency in the delivery of public services to citizens and enterprises;
- e) Promote integration of e-business strategies into national economic and social development plans with the broadest possible participation of all sectors;
- f) Enhance digital literacy, as well as public awareness of ICT and e-commerce, and to increase human resource capacity to meet the challenges of the e-business environment (by using a country's basic education system beginning at the primary school level, providing adult training programmes, and investing in ICT in educational environments in general);
- g) Develop a culture of e-business by opening up access to e-mail and the Internet;
- h) Develop ICT and e-commerce infrastructure that is accessible and affordable to the population at large, and to enable transactions between citizens, businesses and Governments within and across borders;
- i) Promote the use of e-commerce by SMEs to build up their competitiveness by providing appropriate incentives and support;
- j) Review legal and regulatory instruments and enact legislation supporting e-commerce in order to overcome a number of complex issues that have arisen from the development of ICT in such areas as taxation, customs, intellectual property, domain names, computer crime, Internet content regulation, privacy and data protection, consumer protection, certification authorities, and the role of accreditation and standardization bodies;
- k) Adopt and implement appropriate measures to ensure trust and confidence among businesses and consumers, as well as the efficiency, security and reliability of e-business and e-commerce systems based on international interoperable standards, especially for international electronic trade and payments documents;
- l) Foster the creation of an e-finance-friendly regulatory environment and the development of secure methods of electronic storage and transmission of commercial messages, e-signatures and e-contracts;

- m) Adopt flexible regulations and create a supportive institutional environment to encourage the introduction of e-payments, Internet banking, online trade finance and credit information, and other e-finance facilities relevant to SMEs, and ensure public-private cooperation in that respect;
- n) Measure and monitor the progress of e-business and e-commerce development in transition economies by developing internationally comparable statistical indicators;
- o) Foster regional cooperation through the development of regional and sub-regional action plans and through public and private partnerships within economies in transition for the purpose of sharing resources and knowledge throughout the region;
- p) Invite and encourage all concerned organizations to support the efforts of the economies in transition in ICT and e-business development, especially in countries with a lower level of e-readiness, including in the area of capacity building; and
- q) Further contribute to the success of the WSIS process and increase the role of relevant UN institutions and other related organizations in the implementation of the recommendations of Governments to be adopted in the Action Plan.

66. These recommendations take into account the specific needs and requirements of transition economies. UNCTAD and UNECE are encouraged to convey these recommendations to PrepCom 3 of the WSIS.
