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International Conference on Technological Readiness
for Innovation-based Competitiveness: Promoting an Enabling
Information and Communication Technology Policy
and Regulatory Framework

Geneva, 29-30 June 2009

**REPORT ON THE INTERNATIONAL CONFERENCE TECHNOLOGICAL
READINESS FOR INNOVATION-BASED COMPETITIVENESS:
PROMOTING AN ENABLING INFORMATION AND COMMUNICATION
TECHNOLOGY POLICY AND REGULATORY FRAMEWORK**

I. ATTENDANCE

1. The International Conference on Technological Readiness for Innovation-based Competitiveness took place at the Palais des Nations, Geneva, on 29 and 30 June 2009. This Conference was organized in accordance with the programme of work of the Committee on Economic Cooperation and Integration with inputs from the UNECE Teams of Specialists on Innovation and Competitiveness Policies and on Intellectual Property.

2. Sixty-seven experts representing government agencies, the private sector and academic institutions from 22 UNECE member States participated in the Conference. The Conference was also attended by representatives of intergovernmental organizations with relevant activities in the area of knowledge-based development, such as Eurasian Economic Community, European Patent Office, International Trade Centre, International Telecommunication Union, Organisation for Economic Co-operation and Development, World Intellectual Property Organization and the World Bank Group.

II. OPENING OF THE CONFERENCE

3. The Conference was opened with a welcome address on behalf of the Executive Secretary of the UNECE. The welcome address highlighted the contribution of information and communication technology (ICT) to economic efficiency, in particular, its role in facilitating new forms of collaboration in the innovation process. It was pointed out that ICT and ICT-related innovations facilitate international trade and contribute to sustainable development. Various ICT applications and innovative use of ICT make activities of firms more competitive; however, small and medium-sized enterprises (SMEs) face specific problems and challenges in their ICT-related strategies. Cybersecurity is another general challenge as it is the backbone of the knowledge-based economy. Participants were encouraged to actively exchange experiences and provide relevant policy recommendations.

III. SUMMARY OF DISCUSSION

4. The Conference programme was structured into four main thematic sessions covering different aspects of the policy agenda for technological readiness for innovation-based competitiveness, namely:

- (a) ICT as a driver of innovation-based competitiveness;
- (b) ICT and open innovation – opportunities and challenges;
- (c) ICT as an engine of entrepreneurship and a source of new business opportunities; and
- (d) Challenges and opportunities in building an innovation-driven competitive society.

5. Each session was further structured into two panels covering formal presentations by participating experts, led by a moderator.

A. Information and communication technology as a driver of innovation-based competitiveness

6. The first panel “ICT, innovation and growth: addressing the challenges of the global crisis” addressed the impact of the current economic crisis on innovation in general, and on the ICT sector in particular. It further examined the role of ICT and innovation in overcoming the crisis and returning the global economy to a path of sustainable growth. The panel also discussed policy options to facilitate this process.

7. It was pointed out that innovation activities in the private sector are strongly cyclical. These activities are generally postponed during recessions and are taken off again during the subsequent recovery. The current crisis has induced a slump in innovation-related spending, employment and outputs. This slump is also affecting the ICT sector, although some segments have held up relatively well.

8. Public investment in both ICT research and development and in ICT infrastructure can be important drivers of an innovation-based recovery. Such investment can create an immediate stimulus for economic activity and can lay the foundations for sustainable economic growth in fields, such as green technologies, health care, and digital content applications.

9. Experts highlighted experiences of Australia, Canada, France, Germany, the United Kingdom, the United States, as well as the European Union as a whole in significant fiscal stimulus spending on expanding and upgrading ICT infrastructure in under-served areas, schools and other public buildings, and on next-generation networks. Public-private partnerships, including at the municipal level, can play an important role in these ICT infrastructure investments.

10. At the same time, it is important that public investments in upgrading ICT infrastructure be done within regulatory frameworks that ensure non-discriminatory and cost-based access for competitors.

11. Apart from investments in ICT, the Conference also discussed examples from different countries of stimulus spending on “smart” transport and energy infrastructure, support for research and development (R&D), innovation and entrepreneurship in general, support for training and education, investments in green technology and energy efficiency.

12. The topic of the second panel in the first session was “Promoting ICT and innovation-based competitive society”. It discussed the role of ICTs as a significant enabler, catalyst and resource for a more “connected” society and, hence, a more competitive economy.

13. Some of the gains in competitiveness will be due to advances in ICTs which lead the way in improving energy efficiency, reducing carbon footprints, and reducing transport and material intensities. It was noted that there is substantial scope in particular for raising energy efficiency because the most energy-intensive sectors have so far been the least “smart ICT”-intensive. It was also pointed out that these gains are unlikely to materialize without a regulatory and policy framework which supports innovative entrepreneurship.

14. Another important area in which the promotion of ICTs can foster more connected economies and improved competitiveness is the facilitation of international trade. ICTs can play a key role in streamlining administrative border and customs procedures for importing and exporting. By the same token, ICTs can play a key role in developing e-business and enabling companies to better access global markets. The Conference also discussed the work of the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) in developing international standards and recommendations in this area, which are robust, scalable, open, interoperable, and freely available, while remaining affordable for SMEs in developing and transition economies.

15. The first session also addressed other related issues, including among others, the following:

- (a) The impact of the current economic crisis on ICT policy and the need to balance between solving acute short-term problems and addressing longer-term economic objectives;
- (b) The use of ICT and innovative ICT solutions in building modern, transparent knowledge-based economy and in sustaining economic growth;
- (c) The importance of increasing the e-literacy and ICT competence of the population, ensuring Internet access to everyone;

- (d) The role of the state in procuring and encouraging innovation through government projects;
- (e) The need for leaderships in creating a new socio-economic model for a sustainable competitive society and the role of ICT in transforming society from resource-based to knowledge-based society; and
- (f) The importance of continued investment in fundamental ICT infrastructure, such as broadband, as a prerequisite of information society.

B. Information and communication technology and open innovation – opportunities and challenges

16. The term “open innovation” denotes the purposive exchange of knowledge (including innovative ideas as well as possible innovative solutions to specific problems) by an innovating firm with the outside world seeking to accelerate internal innovation. The second session entitled “ICT and open innovation – opportunities and challenges” examined innovation activities at firms through open innovation. It also analyzed open innovation issues related to intellectual property.

17. During the first panel of this session on “ICT and open innovation at firms”, representatives of several leading international companies and an ICT-based innovation broker shared their concrete experiences in open innovation. The panel explained, how the innovation process at the firm level has changed over time, what drives the move to increasingly open innovation, and what role ICT plays in this process.

18. Historically, innovation at the firm level had been a closed process, done exclusively in-house. This old model has become obsolete because today companies need to be able to innovate at a faster pace in order to remain competitive. The leading companies are, therefore, following a new paradigm of “connected” innovation and development. In this new paradigm, innovation can come from inside the company, but also from suppliers, customers, partners in R&D, or from “crowd-sourcing” and other forms of open innovation (communities of creation, innovation networks). Partnering in research and development, customer centricity and feedback become increasingly important in this new model.

19. Connected innovation can deliver enhanced customer experience, productivity gains and, hence, sustained business growth and profitability. Productivity gains arise from the so-called “turbo-charging” in-house R&D, by sourcing in complementary innovations. This operation mode allows a company to harness not only the creativity, knowledge and skills its own R&D department, but also to tap into the creativity, knowledge and skills of customers, suppliers, research organizations and even other companies.

20. However, connected innovation requires deep organizational change: empowering employees, focusing on customer needs and feedback, establishing a culture of collaboration and a process of taking ideas to market fast and effectively, wherever they originate from, while sharing risks and rewards fairly with all partners.

21. The first panel also discussed other related issues, including, among others, the following:

- (a) The widespread usage of networked technologies and open standards which remove barriers for cooperation and accessibility;
- (b) Collaborative innovation as an in-sourcing activity (in contrast to out-sourcing) creating new business opportunities for enterprises in transition; and
- (c) The efficient use of ICT and ICT-based innovation-brokers which connect solvers and seekers and make it easier for firms to find collaborators of innovation who owns appropriate technologies and solutions globally and across industries.

22. The topic of the second panel was “Promoting an enabling environment for open innovation”. It discussed, in particular, the role of intellectual property rights (IPR) systems and regional business networks. Several scenarios for how open innovation, particularly in the ICT sphere, might evolve in the future were discussed. The outcome will be driven, inter alia, by the state of the patent system, by societal values, and by market realities.

23. National intellectual property systems need to respond to the challenges posed by increasingly globalized production and innovation. In the area of ICT, they particularly need to respond to concerns about long backlogs in patent applications, barriers to competition that may arise from patent and licensing pools, uncertainties about patent validity and patent valuations, and a potential lack of perceived legitimacy of intellectual property rights on software and digital content.

24. At the same time, innovation is accelerating, and the speed with which companies are able to bring innovations to market is becoming ever more critical. As a result, patents are becoming less relevant compared to trademarks (brands), trade secrets and follow-up innovation in certain fields.

25. To create an effective enabling environment, it will be critical not only to have internally consistent intellectual property rights systems, but also to make them consistent with other elements of the enabling environment.

C. Information and communication technology as an engine of entrepreneurship and a source of new business opportunities

26. ICT, facilitated by globalization, creates new opportunities for various ICT-enabled products and services throughout the world. At the same time, innovative SMEs are always facing challenges for survival. The first panel in this session was on the topic “Promoting ICT-based business opportunities” and discussed, how ICTs can create new market opportunities for small innovative firms. The second panel addressed “ICT-based entrepreneurship and public-private support to small innovative businesses” and examined, how public policy can support these efforts.

27. Examples were given of how the Internet, e-business and e-commerce can enable small firms to reduce their costs, increase their productivity, diversify and accede to new export markets. One of the challenges consists of integrating ICTs fully into business models, allowing firms to move from the state of just having a website to being a successful e-commerce business (“crossing the chasm”). This requires deep organizational change. Public as well as private support institutions can play an important role in assisting SMEs in this process.

28. Some of the challenges which innovative SMEs face, particularly in economies in transition, are as follows: shortage of skills, administrative barriers, underdeveloped infrastructure, high business risk, underdeveloped local markets, high costs of IPR protection, lack of infrastructure for training, lack of access to finance, and a lack of harmonization of relevant laws at the national, regional and municipal levels.

29. Experts and participants gave examples of government policies to promote ICT-based business opportunities including integrating digital content into national export promotion activities, creating dedicated ICT-centred incubators, technology parks or economic zones. Experts also noted the importance of creating an enabling investment climate by improving legislative frameworks and reducing administrative barriers for export and import. Single windows for SME registration and regulation, loan subsidies, customs privileges, tax breaks for venture capital firms and for ICT companies and financial support through entrepreneurship development or national innovation funds are among other good practices shared in the session.

D. Challenges and opportunities in building an innovation-driven competitive society

30. The first panel “Challenges and opportunities in financing ICT-driven innovation” addressed issues of early stage financing of ICT-driven innovation. Business Angels are among the key sources of financing for innovative companies at their early stages of development. They add further value by providing sector specific expertise to the projects.

31. In the ICT sector, the trend in Business Angel activities has been shifted from relatively large investments in hardware and technology producers towards investments in content and application providers. With the arrival of new developments, such as cloud computing, software as a service, storage on the web, and open source software, technology companies have become less capital-intensive. Hence, the early-stage financing needs today are smaller for capital expenditure and greater for operating expenses.

32. The knowledge-based economy critically depends on well-functioning ICT. In this regard, cybercrime is considered as one of the major threats to the knowledge-based society. The second and final panel “Security Issues in Cyberspace” addressed various aspects of the economic, legal and social impact of cybercrime, and discussed possible counteractions by policymakers.

33. The panel discussed the growing threat from cybercrime and computer fraud, outlining ways to mitigate the associated risks, while maintaining an appropriate balance between security and user friendliness. Cybercrime and cybersecurity affect all aspects of the modern society, including the political, military and economic spheres and present security challenges of different nature (technical, developmental, economic, law enforcement, and national security). An effective response requires involving all relevant stakeholders.

34. Cyberspace has no boundaries. Therefore, the response to cybercrime has to be global. The United Nations World Summit on the Information Society has an action line seeking to promote more and better international cooperation and coordination.

35. Cybersecurity is not primarily a technical issue, but a matter of changing behaviours among ICT users. To fight cybercrime effectively and to increase cybersecurity, the culture of the information society needs to change. This will require raising awareness globally among all stakeholders, including policymakers, teachers, and other users.

36. The secretariat noted with appreciation the active participation of the experts and participants involved in the International Conference and expressed special gratitude to all the moderators who contributed to the success of the Conference. The outcome of the Conference will be reported to the UNECE Committee on Economic Cooperation and Integration at its fourth session in September 2009.

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