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**WTIS-15**  
13th WORLD TELECOMMUNICATION  
**ICT INDICATORS  
SYMPOSIUM**  
30 NOVEMBER - 2 DECEMBER 2015  
HIROSHIMA, JAPAN



**13<sup>th</sup> World Telecommunication/ICT indicators Symposium**  
**30 November - 2 December 2015**  
**Hiroshima, Japan**

**FINAL REPORT**



## INTRODUCTION

1. The 13th World Telecommunication/ICT Indicators Symposium (WTIS), organized by the International Telecommunication Union (ITU), took place in Hiroshima, Japan, from 30 November to 2 December 2015. It was hosted by the Japanese Ministry of Internal Affairs and Communications.
2. The Symposium attracted 566 participants from 87 Member States, 44 public and private organizations (including academia) and other regional and international organizations.
3. The work of WTIS was conducted under the chairmanship of Mr Kiyoshi Mori, Director-General for International Affairs, Global ICT Strategy Bureau, of the Japanese Ministry of Internal Affairs and Communications.
4. Further information, including the agenda, the presentation slides, web cast archives, media information, the list of participants, and WTIS photos are available at:  
<http://www.itu.int/en/ITU-D/Statistics/Pages/events/wtis2015/default.aspx>.

## AGENDA

5. The 13<sup>th</sup> World Telecommunication/ICT Indicators Symposium (WTIS) was opened by H.E. Ms Sanae Takaichi, Minister for Internal Affairs and Communications of Japan, Mr Houlin Zhao, Secretary-General of ITU and Mr Brahima Sanou, Director of the ITU Telecommunication Development Bureau.
6. The Minister of Japan, as the host, requested all the participants for active discussions on the issues such as: (1) bridging the digital divide; (2) addressing global challenges such as disaster management, poverty, environmental issues, health and education; and (3) building the capacity of women and youths, in view of the 2030 Agenda for Sustainable Development and the importance of ICT and IoT for the sustainable development.
7. The Opening Ceremony was followed by a Ministerial Roundtable on ICT as a driver of sustainable development. A Leaders' Dialogue focussed on future ICT trends, policies and measurement challenges. Other topics featured during the Symposium included ICT and the data revolution; ICT and innovation; the Internet of Things and mobile applications as a source of data; and current and future work on telecommunication/ICT indicators and on ICT household indicators, including reports by the Expert Group on Telecommunication/ICT Indicators (EGTI) and the Expert Group on ICT Household Indicators (EGH).
8. The results of the ITU ICT Development Index (IDI) 2015 were presented during a special award ceremony, as part of the launch of the Measuring the Information Society Report 2015. One session of WTIS was dedicated to the presentation and discussion of the results of the report.
9. The Minister of Japan stated that the discussions held at the Symposium on the aforementioned critical issues would be reflected in the G7 ICT Ministers' Meeting in Takamatsu, Kagawa, to be hosted by Japan in 2016, showing the importance of ICT in such fields as eradication of epidemics and disaster risk prevention for sustainable development, needs for the use of data in the era of IoT in all the member countries and her intention to make the Tokyo Olympics and Paralympics Games in 2020 a showcase for ICT innovation.
10. Based on the WTIS presentations and discussions, the following conclusions and recommendations were made. These were presented by the Chair and include comments that were received by participants until 31 December 2015.

## CONCLUSIONS AND RECOMMENDATIONS

### 1. Ministerial Roundtable: ICT as a driver of sustainable development

11. The Ministerial Roundtable recognized that the 2030 Agenda for Sustainable Development cannot be achieved without ICTs. It highlighted the need for a high-level commitment recognizing the critical role that information and communication technologies play in achieving all areas of the new development agenda. Ministers provided examples showing how ICTs can help reduce poverty, respond to climate change and facilitate disaster management, deliver health services, benefit the agricultural sector, create smart cities, drive economic growth, and create more inclusive societies.
12. Discussions pointed to the persistent digital divide, between, as well as within countries, and in particular between urban and rural areas. Ministers recognized the important role of ITU in helping to bridge this divide, including through its work on statistics, and by providing the right indicators framework. To raise awareness and to inform governments, in particular in developing countries with limited resources, on their investments in ICTs, need to be made available.
13. Panelists pointed to the need for high quality, timely, and disaggregated data to enable policy makers to take the right policy decision, and for sustainable development. They also highlighted the need for gender-disaggregated data, and ICT skills data. Discussions also suggested that national ICT development plans with clear goals and targets can help not only track, but also drive, ICT update.
14. In this context, Ministers called upon ITU and its Membership to take advantage of new data sources, including big data and IoT/M2M data, to ensure that relevant information on ICT indicators included in the SDGs are produced and made available. Several panelists highlighted the importance of working with traditional and new data providers, including the private sector, to stimulate the debate between different public and private data providers, and to leverage new data sources.
15. Discussions highlighted that robust and resilient networks as well as the use of big data and IoT were vital in the era of IoT, when new value and services were created by large amounts of data. Data of great variety were increasingly produced in a changing environment where physical objects of all sorts are connected. The Symposium also stressed that the sophisticated and widespread use of mobile cellular phones is helping to address and tackle socio-economic challenges, particularly as the sophistication and variety of mobile cellular phones is increasing.

### 2. Leaders' Dialogue: Future ICT trends, policies and measurement challenges

16. The Leaders' Dialogue emphasized the potential benefits of embracing new technologies and trends, including future high-speed mobile technologies and the Internet of Things. Discussions highlighted that rapidly changing technologies are transforming the information

society and creating new levels of connectivity, innovative business models and applications. The Symposium also acknowledged that major differences in ICT developments continue to exist among, but also within countries.

17. Panelists pointed to the fact that Governments can drive ICTs pro-actively by adapting national regulations and by building a regulatory environment that allows their ICT sectors to innovate and grow. The high-level panel discussed different way in which regulatory frameworks can be adapted to new technological trends, including convergence and OTT services, big data and IoT. Leaders highlighted that the move toward a new digital ecosystem comes with new challenges, for example in the area of cybersecurity, privacy, and also ICT measurement.
18. Discussions showed that new ICT tools are changing the way the information society can be measured, and the Leaders' Dialogue highlighted some of the new possibilities, as well as challenges, in using these tools. In particular, the debate emphasized that increased access to and use of ICTs, combined with the rapid spread of the IoT and big data, have great potential for producing real-time, granular information on the uptake and the impact of ICTs.
19. Participants pointed to a new measurement paradigm, which calls for new public-private partnerships in the production of ICT data, and a review of traditional measurement practices. The Leaders' Dialogue called upon producers of official statistics, including Ministries, regulatory authorities, and national statistical offices to work closely with the private sector to identify new data sources that can complement, or improve, existing official statistics.

### **3. Launch ceremony of the ICT Development Index (IDI)**

20. The interventions following the launch ceremony of the ICT Development Index (IDI) showed that participants appreciate the Measuring the Information Society Report, which was described as a key publication in the field of ICT for development.
21. Panelists highlighted that the IDI is an important and impartial benchmarking tool that helps countries evaluate progress, identify challenges, and set targets. By highlighting not only the top performers but also the most dynamic countries that have made great achievements in terms of ICTs, the IDI helps identify best practices, and provides critical evidence for policy makers and the private sector. The session emphasized that investments in ICTs can help reduce costs in other sectors, where ICTs increase productivity and provide access to new and innovative services.
22. Several of the countries that have made substantial improvements in ICTs shared their experience and the session discussed some concrete steps that governments can take to drive ICT development. These include setting up a regulatory framework that encourages competition and innovation, making use of universal service funds, and setting clear goals and targets.

23. The session emphasized that the lack of adequate data on ICT access, but especially on ICT use, remains a major barrier in helping many countries formulating adequate ICT policies.

#### **4. A World That Counts: the role of ICT in advancing a data revolution**

24. The session highlighted that the data revolution is already happening and that national statistical systems have to take advantage of it to improve the quality and availability of statistics. ICTs play a key role in the data revolution both as a tool for gathering statistics more effectively and as a key source of new data coming from the ICT industry (e.g. operators, service providers and social networks). Big data can transform national statistical systems by reducing costs and the time spent on collecting, processing and producing data, as well as by improving efficiency in the processes. In addition, these data can be used to produce more timely statistics, fill data gaps and complement official statistics. Discussions during the Symposium emphasized the importance of strengthening the link and cooperation between official and unofficial data providers in order to participate in the data revolution.
25. Participants noted that in many developing countries, NSOs are lacking the financial and human resources for data production, and encouraged governments to provide more support. The panellists highlighted that the lack of new skills required to exploit new data sources posed a particular challenge to NSOs in developing countries and that capacity building on how to use and analyze big data was needed.
26. For countries to participate in the data revolution, they need to foster partnerships at national, regional and international levels. The Symposium encouraged countries to establish national coordination mechanisms to engage the different stakeholders in the discussions on this topic, and to set up regional networks for micro data management that would benefit developing countries. The discussions also highlighted the need for international organizations to work on setting statistical standards that will ensure the comparability and quality of statistics derived from new data sources.
27. The Symposium highlighted the need for NSOs to change their approach towards the use of new data sources, to build methodological capacities to produce more timely data, and to take a proactive role in taking advantage of ICTs for the data revolution. The Symposium requested ITU to continue raising awareness on the importance of using new data sources and bringing all relevant stakeholders together (private sector, NSOs, regulators, Ministries). Furthermore, the Symposium agreed that the discussions on this topic should continue in the EGH and EGTI forum. Concrete case studies from developing countries should be developed to showcase how big data can be used to complement official statistics and to document best practices and learn from successes and failures of countries.

## **5. Big data and the ICT industry: building effective public-private partnerships**

28. The session highlighted the important role of the ICT sector as one of the major sources of big data, including telecommunication operators, Internet and social media service providers, and satellite companies. While some data are available on the web, others are proprietary and owned by ICT companies, which calls for the development of new public-private partnerships and new modalities for data access and sharing.
29. A number of statistical offices as well as civil society organizations have successfully engaged with private data providers for accessing, sharing and analysing big data for official statistics and delegates appreciated the sharing of experiences. One of the key issues when it comes to data access from private sources is the debate around privacy, confidentiality and data protection. There are different models of how public and private stakeholders could engage to address this issue. Modalities for data access vary depending on whether data are accessed onsite or offsite, the level of data aggregation and anonymization, national data protection, privacy and statistical legislation, commercial interests and risks, among others.
30. The international community has an important role to play in facilitating the discussion between data producers and data users. The UN Global Working Group (GWG) on Big Data for Official Statistics has developed a set of draft principles for data access and model data sharing agreements. Participants welcomed the draft principles presented during the meeting, which have been presented for consultation and which could be very valuable for the discussions between data users and data producers.
31. ITU should take an active role as the main UN agency for ICT/telecommunication by facilitating the dialogue between operators, regulators, statistical offices and Ministries. It should also provide a forum for sharing experience in this regard. Work in the EGH/EGTI on the topic of new data sources and big data should continue.

## **6. ICT and innovation: policies, measurement and impact**

32. The session illustrated the close link between ICTs and innovation. ICT and connectivity are key drivers of innovation and enterprise development and some of the most innovative businesses are coming from the ICT sector. Important ICT-driven innovation is also taking place in the non-ICT sector, helping to drive entrepreneurship, improvements in the health, education, transport or other sectors, and a better quality of life in general.
33. The Symposium stressed the importance of more adequately measuring innovation, including ICT innovation, in order to inform policy makers and the private sector about national innovation trends and challenges. Significant progress has been made in developing ICT indicators measuring ICT access and use issues; attention now needs to turn to gathering evidence concerning ICT-driven innovation and outcomes. The question whether and how ICTs contribute to innovation is ever-more pressing in a context of low productivity or anaemic economic growth.



34. To this effect, a more subtle understanding of innovation is required. Concepts and metrics need to go beyond innovation in large R&D-driven firms with a focus on generating new products. The meeting highlighted that current one-dimensional metrics and conceptualisations of innovation such as R&D statistics and many existing innovation surveys do not do justice to this complex field. Examples of ICT-driven innovation which go unmeasured include the use of ICTs to help spur large-scale radical innovations, such as self-driving cars or efficient energy systems, innovation in smaller firms and sometimes non-profit organisations, ICT-driven innovations improving process and services, and innovation at the user and household level. The benefits of ICT-driven innovations, in particular at the consumer level, also need to be properly captured by traditional productivity statistics.
35. New policy opportunities and challenges result from new forms of distributed, open, ICT-driven innovation processes. These entail having proper infrastructure in place, the frameworks for knowledge and information sharing, including of intellectual property, efficient cross-border markets, and the upgrading the required skills levels to harness ICT-driven innovation.
36. More data are needed to properly track innovation and the international community and countries are encouraged to develop methodologies for data collection on innovation, including ICT innovation. Work in this regard is being carried out at the national and international levels.
37. Participants encouraged ITU, in collaboration with other relevant partners such as WIPO, to assist its membership by showcasing the impact of ICT on innovation, which is also included as one of the global ICT goals in the ITU Strategic Plan and the Connect 2020 Agenda.

## **7. Emerging trends: Internet of Things (IoT) and mobile applications as a growing source of development data**

38. The Symposium noted that IoT and mobile applications offer new opportunities for development by providing new data sources that can contribute to the understanding, analysis and tackling of existing development issues, including those addressed by the new 2030 Agenda for Sustainable Development. In the future, the value derived from IoT and mobile applications will be closely linked to the exploitation of big data. The Symposium encouraged national statistical offices, regulators and ministries to work together for the benefit of big data from IoT, and ITU to play a facilitating role in the process.
39. The session presented some successful cases of smaller-scale IoT and automated real-time data systems based on mobile phones to improve the action of local governments in the areas of health, education and water management. These examples show that IoT and mobile applications can also be utilized in developing countries to tackle present development challenges at a smaller scale, with lower deployment costs and adapted to the local needs (e.g. low power consumption, limited Internet connectivity, local ICT skills). These IoT deployments could be escalated to larger systems in the future, although interoperability and fragmentation remain a challenge. The Symposium encouraged local,

regional and country administrations to take advantage of data from IoT and mobile applications to improve the delivery of public services.

40. ICT infrastructure underpins the connectivity and data processing capacity required for IoT. The Symposium called for additional policy and regulatory action to close the fixed ICT infrastructure gap in the developing world in order to avoid many developing countries, or some regions in these countries, being left behind in the IoT race. Another priority area identified in the session is the training of IoT practitioners, although mobile-based platforms are facilitating IoT operation among the less tech-savvy.
41. The Symposium recognized that monitoring the development of IoT requires reliable and comparable international statistics, and asked ITU to contribute to making these data available, including through its statistical expert groups.

#### **8. Special session: Expert Group on Telecommunication/ICT Indicators and Expert Group on Household Indicators**

42. The Symposium welcomed the growing participation of experts in ICT statistics in the work carried out by EGTI and EGH, including the participation of over-the-top service providers in topics that are relevant to both groups, such as big data and other ICT data sources.
43. The Symposium acknowledged the work carried out by EGTI in 2015 under the chairmanship of Iñigo Herguera, from Spain, and endorsed the outcomes of the 6th EGTI meeting held on 23-25 September 2015 in Geneva. The Symposium agreed to start collecting from 2016 data on “Active subscriptions to LTE/WiMAX mobile-broadband networks” and to use the new definitions agreed by EGTI on the sub-categories of mobile-broadband: (i) data-only mobile-broadband subscriptions, and (ii) data and voice mobile-broadband subscriptions. The Symposium encouraged countries to start working with operators on the collection of these data.
44. Taking into consideration the proposals for future work of EGTI, the Symposium agreed to review the ITU price baskets based on data on usage patterns from developing and developed countries, and from different regions. The Symposium encouraged countries to collect these data from the operators and share the aggregated figures in EGTI to avoid confidentiality issues, following the example of Saudi Arabia. The Symposium further agreed to the creation of two sub-groups within EGTI to produce reference documents for the collection of data on: (1) Digital financial services, rapporteur: Linda Kambale, from the Malawi Communications Regulatory Authority, and (2) International Internet bandwidth indicators, rapporteur: João Noronha, from ANACOM, Portugal. All experts interested in contributing to the drafting of these documents are encouraged to register in the sub-groups.
45. The symposium welcomed the statistical assessment of the IDI carried out by the European Commission’s Joint Research Center (JRC), which concluded that the IDI methodology is “sound, coherent and balanced” and that therefore the IDI is a “credible summary measure to be used as a tool for improved policy making”.

46. The Symposium acknowledged the work carried out by the EGH in 2015 under the chairmanship of Alexandre Barbosa from Brazil. The Symposium took note of the two new indicators agreed during the EGH meeting (proportion of households without Internet access, by type of reason; and proportion of individuals not using the Internet, by type of reasons) and agreed to start collecting the data for these indicators from 2016. The Symposium encouraged countries to include the indicators in their future ICT household data collections.
47. The Symposium recognized the need to increase the availability of ICT statistics, particularly the indicators that are included in the SDG indicators framework and encouraged regulators, ministries and NSOs to work together to increase the data availability. The Symposium requested ITU to work with NSOs in updating the national household survey questionnaire to ensure that ICT questions are included in national data collections, in particular those required to monitor the SDGs.

## **9. Measuring the Information Society Report 2015**

48. Participants welcomed the presentation of the Measuring the Information Society Report 2015 and the information it provided on the first quantitative assessment of the ITU Connect 2020 Agenda, countries' ICT development status (as measured by the ICT Development Index), ICT price trends and the recent developments, opportunities and challenges of the Internet of Things (IoT).
49. The Symposium took note of the analysis and projections presented concerning the indicators to monitor the Connect 2020 targets and, in particular, of those areas which will require further policy and regulatory attention in order to meet the targets. In addition, the Symposium acknowledged the need for reliable and harmonized statistics to monitor the progress of IoT.
50. The Symposium recognized that the MIS Report presents relevant methodologies and analyses to monitor ICT developments and identify the challenges, thus providing an example of how available ICT data can be used to inform policies and regulation.

## **10. Final remarks by the Chair**

51. The Chair urged the participants from OECD member countries to try their best to mirror the discussions at the Symposium during the OECD Ministerial Meeting on the Digital Economy to be held in June 2016 in Mexico.
52. The Chair also urged all the participants to review the ideas and comments discussed at the Symposium and make best use of them for the next WTIS-16, showing awareness that the final session of the WTIS-15 was not the end but the start of further discussions on these important subjects.