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Respondent from Statistics to keynote address

Information as an Economic Resource: A Statistical Perspective

Introduction

It is noted from the keynote address that information is intrinsically linked to human beings, groups and society and is the basis for their capacity to perceive, interpret, understand and transform the world. Moreover, information has become much easier to create, gather, process, store, disseminate and use in day-to-day activities. In other words, information has become a strategic resource for all manner of social activities and, most of all, for the economy. Additionally, information has the virtually unique capacity to be used, reused, processed, shared and exchanged without losing value; indeed it generates added value through this process.

On the other hand, statistics, which apparently is an integral part of information, may be defined as a science of collecting, processing, analysing, and disseminating information that is shown in numbers. In other words, statistics attempts to attach numbers to information.

According to a report by the International Telecommunication Union (ITU), a lack of timely and comparable data on access to information and communication technologies (ICTs) is a major barrier to understanding the depth and causes of the digital divide or a gap in ICT access within and between richer and poorer countries. The report further highlights a close link that exists between the digital divide and statistical divide and that the statistical divide is as great as - or even greater than – the digital divide.

In fact, the Millennium Declaration acknowledges that ICTs are an important tool to achieve its overall goals in that ICTs can help alleviate poverty, improve the delivery of education and health care, make government services more accessible, and much

more. Moreover, Target 18 of Goal 8 calls upon the Declaration's adherents to: "*In cooperation with the private sector make available the benefits of new technologies, specifically information and communications*".¹ Among the indicators for monitoring progress of this target include: *total number of telephone subscribers per 100 inhabitants, personal computers per 100 inhabitants and Internet users per 100 inhabitants*.

Globally, access to telephone networks (fixed and mobile) tripled in the ten-year period 1993-2002 from 11.6 subscribers per 100 inhabitants to 36.4. The most rapid growth occurred in the use of mobile phones due to the evolution towards second-generation wireless systems, liberalisation of mobile telecommunication markets and introduction of prepaid cards. By the end of 2002, for example, there were more mobile cellular subscribers than fixed telephone lines in the world. Growth was particularly strong in Africa, the first region where mobile overtook fixed and where almost all countries had more mobile phones than fixed telephones.² Unlike information for telephone subscribers, obtaining data on personal computers is often difficult in that few countries compile statistics on the number of computers in their country. Data collected from countries are often supplemented by sales and import figures, adjusted to take into account the average life of a computer. It is noted that these data are not widely available for developing countries and particularly in Africa. Moreover, sales and import figures can also be misleading because of re-shipment, re-assembly and evasion.

As for most developed and larger developing countries, Internet user data are based on surveys conducted by national statistical offices or market research organisations. For countries where Internet user surveys are not available, data are generally

¹ World Telecommunication Development Report 2003

² Ibid

estimated derived from average multipliers for the number of users per subscriber. Cross-country comparison of the number of Internet users should be taken with caution since information for this indicator can be misleading and can be affected by the differences in the frequency of use and the services used. Also different surveys conducted in the same country often show conflicting results due to differing sample sizes and interview techniques. Moreover, convergence has also contributed to methodological ambiguity in counting Internet users, as in some countries Internet can be accessed using a mobile phone, personal digital assistants (PDA) or video game console.

Because of the highlighted measurement problems in the ICT sector, it is no wonder that there is broad consensus among African countries and development partners about the need for better statistics, as a tool for evidence-based policy and planning and to better support policy implementation, monitor progress and evaluate outcomes and impacts of development initiatives that include the ICT sector. However, African national statistical systems (NSS) are generally weak and unable to, in their present form, to meet the unprecedented increase in demand for statistical data to inform national development processes. This is why organisations such as the PARIS21 are supporting the idea of a national strategy for the development of statistics that should provide a framework for strengthening statistical capacity across the entire national statistical system mainstreamed into national development policy processes. National strategies constitute a comprehensive and unified framework for the continual assessment of evolving user needs and priorities for statistics and for building the capacity needed to meet these needs and priorities for statistics and for building the

capacity needed to meet these demands in a more coordinated, synergistic and efficient manner.³

Statistics as a beneficiary of Information and Communication Technologies

It has been observed that statistics is a great beneficiary of the ICTs through out the stages of data collection, data processing, data analysis, report writing and dissemination of statistical results.

At the data collection stage, the statistical communities are witnessing the increased use of Personal Digital Assistants (PDA) instead of paper questionnaires an innovation that has seen the reduction in the time for manual data entry since the PDAs are only plugged to computers for data transfers. In addition, countries are witnessing increased use of the Geographical Information System (GIS) tools such as the Global Position System (GPS) in the collection of statistical data essential for mapping community infrastructures such as schools, health facilities, etc, etc.

At the data entry stage, there is increased use of the scanning technology through the use of Optical Mark Reading (OMR) that have enabled some African Countries cut down on the time it takes to publish survey and census of population results.

For example, the use of the scanning technique enabled Zambia to provide preliminary results of the 2000 Census of Population and Housing within six months and of the final results within a period of two years, a reduction from a period of five years for both the 1980 and 1990 round of censuses.

At the data processing and analysis stages, high speed computers and use of specialised softwares have improved the efficiencies of national statistical agencies by reducing time needed for data cleaning and data analysis. Some of the changes and

³ United Nations, 2005; Report of the Partnership in Statistics for Development in the Twenty-first Century on statistical capacity-building, 36th Session of the Statistical Commission, 1-4 March 2005, New York.

opportunities that ICTs have made possible include the possibility of manipulating very large data sets and has offered statisticians the opportunity to study micro data related to very small areas. In addition, the use of the VSAT (Very Small Aperture Terminal) technology and the use of the Wide Area Networks (WAN) by Revenue Authorities and Customs departments in Africa are enabling the timely processing, analysis, dissemination and provision of trade statistics data by a number of statistical offices.

Desktop publishing innovations have improved the way statistical agencies present their statistical outputs in the report writing processes enabling neat presentations of text, tables and graphs that are user-friendly to the reader and particularly the layman.

An often overlooked, older ICT, radio, is now often used as a vehicle to improve public awareness using statistical results such as information on HIV/AIDS. In Tanzania, 82 per cent of listeners surveyed said they had adopted a method of prevention as a result of listening to a radio soap opera, while in South Africa a majority of respondents indicated that they gained the most useful information about the disease from a radio dramatization.⁴

Innovations in the ICTs have improved ways of presenting statistical data to professional bodies and the general public through the use of power-point technology, digital maps and the availability and provision of data and reports through emails and the Internet.

Despite such innovations in the use of ICTs in statistical processes, there are a number of challenges that are often encountered.

One of the identified challenges is concerned with the limited availability of ICT infrastructure that statistical agencies can access. In some African countries,

⁴ World Telecommunication Development Report 2003

telecommunication networks and services need to be extended and expanded. But even in those countries that may be fortunate in having such infrastructure, most of the time costs of accessing them may prove to be an inhibiting factor to statistical activities. Related to this challenge is that of financing the development of the infrastructure and ICT initiatives. In this area, extensive efforts may be required not only to extend and develop the existing ICT infrastructure but also to maintain and update it, as the technology development in this sector is fast. Because of the capital-intensive nature of this basic infrastructure development, many statistical agencies have to rely on the limited finances from their respective government amidst several demands to other equally pressing issues.

Even when some countries are fortunate enough to finance these infrastructure, issues of human resource development becomes a sustaining factor in the Information Economy, as new types of workforce are required for innovation and growth. Perhaps an even greater problem is that the brain drain and generally low levels of education and literacy amongst the population has created a scarcity of skills and expertise. This situation is particularly critical for the rural areas. Apart from the low salaries mostly existing in most statistical agencies in Africa, this problem is particularly chronic for governments and Non-Governmental Organisations (NGOs) who are continually losing their most brilliant and experienced staff to the private sector.

According to Mike Jensen⁵, this situation is not unique to Africa or other developing countries, but is also being faced by the developed world where infrastructure demands have outpaced the supply of experienced staff. He further observes that this is simply exacerbating the situation in Africa, because experienced technicians, even

⁵ Mike Jensen, 2002, Information and Communication Technologies (ICTs) in Africa- A Status Report. Paper Presented to the Third Task Force Meeting, United Nations, 30 September- 1 October 2002.

from the local private sector, are able to find much higher paying jobs in Europe and North America.

The other equally important challenge relates to existing legal and regulatory frameworks that must be conducive to sustainable multi-stakeholders partnerships especially that they are required as a result of the recognition that no one sector on its own can overcome the challenges of harnessing Information for socio-economic development. Of particular importance is the case of outdated national statistical legislations or Acts that are currently being used by a number of statistical agencies. Most of these legislations were enacted before the development of ICTs that were earlier discussed in this paper. For instance, most statistical agencies have found dissemination of their statistical products through the Internet most efficient and effectively while the Statistical Acts that established these agencies were enacted before the development of this technology. There is, therefore, need to revise and harmonise the various legislations that are concerned with statistical activities on one hand, and ICT technologies on the other.

The other challenge is that content creation should be encouraged through strengthening digital and virtual libraries and promoting the development of statistical databases, by assisting countries in identifying user needs and data sources as well as in re-organising existing statistical information systems, with a view to responding to data needs emerging from the new development frameworks and initiatives such as the New Partnership for African Development (NEPAD), the Poverty Reduction Strategy Papers (PRSPs) and the Millennium Development Goals (MDGs). In this respect, initiatives such as the General Data and Dissemination Strategy supported by the DFID, the World Bank and the International Monetary Fund (IMF) should be commended and encouraged.

It must be emphasised that since statistics requirements is increasing considerably, statistical systems need to ensure that they are continually monitoring needs and adapting their operations to reflect increasing demands. This calls for statistical capacity building initiatives on the development of statistical master plans and strategies receiving attention by organisations such as the PARIS21. The national strategy for statistical development provides a framework for mobilising, harnessing and leveraging resources (both national and international) and a basis for effective and results-oriented strategic management of the national statistical system.⁶

Statistics as Contributor to Measurement and Monitoring of ICTs.

The keynote address has posed a fundamental question as to whether information can act as lever for alleviating poverty in Africa and speeding up its development and further went on to solicit for the strategies that should be implemented to that effect.

Development and utilisation of the ICTs require constant measurement and monitoring, if the utilisation of the ICTs is to be managed especially for the African economies. The South African Finance Minister Trevor Manuel is often quoted saying: *“If you can not measure it, you can not manage it”*.

The new markets in the Information Economy provide an unparalleled opportunity to African countries in creating employment, expanding businesses and trade and ultimately building wealth for the socio-economic development and well being of their peoples. It also enables these countries to generate new ideas and harness the Information Economy, thus translating into accelerated economic development and a better chance to reduce poverty through well-targeted pro-poor measures. In this connection, it should be emphasised in particular, that monitoring systems for the new

⁶ United Nations, 2005; Report of the Partnership in Statistics for Development in the Twenty-first Century on statistical capacity building, 36th Session of the Statistical Commission, 1-4 March 2005, New York.

development agenda, including the Millennium Development Goals (MDGs), the Poverty Reduction Strategy Papers (PRSPs) and the New Partnership for African Development (NEPAD), have not only created new demands but also provided frameworks for further development of African statistical systems.

At this point, it becomes essential to highlight and take stock of the current initiatives that are taking place in an effort to measure progress on the ICTs.

The first phase of the World Summit on the Information Society, was held in Geneva in December 2003. This was a forum where a number of key international stakeholders involved in the statistical measurement of ICTs joined forces to create the global Partnership on Measuring Information and Communication Technologies for Development. The Partnership was formally launched during the eleventh session of the United Nations Conference on Trade and Development (UNCTAD XI), held in Sao Paulo, Brazil, in June 2004.⁷

The Partnership aims to accommodate and develop further the various initiatives regarding the availability and measurement of ICT indicators at the national, regional and international levels. It provides an open framework for coordinating on going and future activities and for developing a coherent and structured approach to advancing the development of ICT indicators globally, in particular in developing countries. The objectives of the Partnership are a) to achieve a common set of core ICT indicators, to be harmonised and agreed upon internationally, which will constitute the basis for a data base on ICT statistics; b) to enhance the capacities of national statistical offices in developing countries and build competence to develop statistical compilation

⁷ United Nations, 2005; Report of the Partnership on Measuring Information and Communication Technologies for Development, 36th Session of the Statistical Commission, 1-4 March 2005, New York.

programmes on the society, based on internationally agreed indicators; and c) to develop a global database on ICT indicators and make it available on the Internet.⁸

Following the Sao Paulo Partnership launch of June 2004, the global World Summit on the Information Society (WSIS) Thematic Meeting on Measuring the Information Society took place in Geneva under the umbrella of the Partnership in February 2005, to present the results of the global stock-taking exercise, consolidate the outcomes of the regional workshops and agree on the final list of core indicators. The meeting also discussed technical assistance needs of developing countries with respect to the compilation of ICT indicators, identification of ICT indicators relevant to achieving the Millennium Development Goals and presentation of on-going work concerning the development of an international database on ICT indicators. The outcome of this meeting is expected to be an input to the second phase of the Summit, expected to take place in Tunis in November 2005. From there a second phase of the Partnership is envisaged to the first half of 2008. The objective of the second phase is to disseminate and expand the work on measuring ICT, thus increasing ICT data availability at the international level.⁹

In terms of taking stock of the status of information and communication technology statistics in Africa, a global exercise was initiated in July 2004 in various regions through a metadata questionnaire on the current status of information society statistics, which was sent to national statistical offices in developing countries.

The objectives of the exercise were: a) to take inventory of existing and planned ICT indicators, questionnaires and methods of collecting statistics; b) to collect information that could lead towards standardised definitions and set of commonly accepted ICT core indicators; and, c) to identify best practices and needs of national

⁸ Ibid.

⁹ Ibid.

statistical offices in order to prepare technical assistance and an exchange of knowledge.¹⁰

For Africa, the results of this exercise indicated that less than half of the 52 African countries (22 countries) replied to the questionnaire sent by the UNECA. The results also indicated that the majority of the national statistical offices had no ICT definition. However, there was a demand for household ICT statistics in general, and a high demand for business ICT statistics in countries implementing an e-strategy or having formulated a national information and communication infrastructure (NICI) plan. It was noted that existing ICT statistics concern mainly the presence of radio, TV, fixed and mobile telephone in households and in some countries the presence and usage of personal computers and the Internet and ICT statistics in business and other areas were addressed.

The challenge, however, is that there is need for a harmonised methodology and collection of a core set of ICT statistics, although SCAN-ICT methodology was found to be suitable for use by national statistical office. The SCAN ICT methodology is an initiative of the United Nations Economic Commission for Africa (UNECA), the International Development Research Centre (IDRC) Acacia initiative, the European Union and the Norwegian Agency for Development Cooperation (NORAD). This initiative aims to build support for the phased development of a comprehensive African capability to collect and manage key information needed to support the growing investment in ICT as well as the transition of Africa to an information society.¹¹

¹⁰ Ibid.

¹¹ [Http://www.uneca.org/aisi/scanict.htm](http://www.uneca.org/aisi/scanict.htm).

Conclusion

Finally, it is perhaps, critical to highlight some of the observations made by the International Telecommunication Union (ITU) report.

The report says that although a number of ICT indicators already exist, they are often inappropriate for policy analysis and that few countries collect pragmatic indicators for measuring access, and even where they exist, international comparisons are often hampered by differences in definition and methodology. Furthermore, the report finds that while developed countries are racing ahead in information society measurement and tracking many factors including infrastructure, access and usage, most developing countries are still struggling to produce even basic indicators.

The report proposes several recommendations to overcome the statistical divide including countries improving their statistical landscape by conducting surveys, compiling statistics and making them readily available; government agencies involved in ICTs to work closely with national statistical agencies; and developed countries and multilateral agencies should assist developing nations to compile ICT indicators by technical assistance and material resources.

Finally the report further recommends that good statistical practice is important and that with transparency, clarity, timeliness and relevance being critical, surveys should be conducted on a regular basis, and at least annually.

Throughout the ITU report, there is an observation that while the MDGs have set out goals and targets relating to ICTs, they have omitted specifying global deadlines and targets in this regard, an attempt currently underway by the World Summit on the Information Society in its development of a framework document for information society measurements and analysis.

The fundamental challenge for CODI 4, therefore, is to what extent will the discussions and recommendations of this gathering and especially of the Statistical sub-committee of the CODI contribute and add value to challenging issues raised so that Africa measures and manages ICTs for the well being of its peoples.