

Digitally divided in satellite telecommunications What can lesser developed countries expect?

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More than four years have elapsed since phase 1 of the World Summit on the Information Society (WSIS) and more than two years since the WSIS phase 2 were held in Geneva and Tunis respectively. What has changed since the Summit has closed its curtains? Have the information poor become richer? And based on the experiences with the Summit, what can the information poor countries expect for the future in particular with regard to satellite telecommunications?

“Digitally divided” - What do satellites have to do with it?

In the year 2000 the former UN Secretary General Kofi Annan stated in front of the Millennium Assembly that “At present, a yawning digital divide still exists in the world. (...) This digital divide can – and will – be bridged (...)”¹. In 2003, it was the Secretary General of the International Telecommunication Union (ITU) who remarked that „(t)elephones will not feed the poor, and computers will not replace textbooks. But Information and Communications Technologies (ICTs) can be used effectively as part of the toolbox for addressing global problems.”² He repeated in 2004 that “ICTs alone may not feed the hungry, eradicate poverty or reduce child mortality, but they are an increasingly important catalyst that spurs economic growth and social equity.”³

These statements reflect three very important aspects: 1) a digital divide does still exist, 2) ICTs are an increasingly important factor for economic growth, and 3) the UN and the ITU as a specialized agency in the UN system have already been concerned with the problem for a longer period.

Broadly speaking, the term “digital divide” refers to the gap between those who have access to the latest information technologies and those who do not.⁴ On the international scale, such a divide can be particularly perceived between industrialized and developing countries.

With their specific advantages, satellites are perfectly well suited for bridging the digital divide.

The link of outer space to this problem is evident. Whereas, obviously, different technological means may help in bridging the digital divide, satellites offer some specific advantages. They are, for instance, capable of covering a broad geographical area, at the same time avoiding expensive terrestrial infrastructures and offering a practically unlimited number of transmission recipients. Also, they are perfectly apt for the creation of global networks. With all these advantages, satellite systems are the only means to connect those states that are not linked to optical fibre

¹ K. A. Annan, ‘We, the Peoples’ – The Role of the United Nations in the 21st Century, 2000, Chapter 3 p. 32, available online at <http://www.un.org/millennium/sg/report/ch2.pdf> (date of access: 1 July 2008).

² Y. Utsumi, ITU Secretary-General, on the occasion of the opening of the World Summit on the Information Society (WSIS), Geneva, 2003, see http://www.itu.int/wsis/geneva/newsroom/press_releases/wsisclosing.html (date of access: 1 July 2008).

³ Y. Utsumi, ITU Secretary-General, on the occasion of the 139th jubilee of the ITU, 17.05.2004, http://www.itu.int/newsarchive/wtd/2004/sg_message.html (date of access: 1 July 2008).

⁴ B. M. Compaine, *The Digital Divide: Facing a Crisis or Creating a Myth?*, Cambridge (Mass.) et al., 2001, p. xi.

networks to the international communications network (“lifeline connectivity”).

Even today, almost two thirds of all states can only obtain international connections via the INTELSAT satellite system. Satellite communications thus complement submarine cables as a means to connect far away regions. Alongside optical fibre, satellites constitute the backbone of the information society and are perfectly well suited for bridging the digital divide. This is also true for bridging the digital divide within prosperous areas like the enlarged Europe, where the satellite operators Eutelsat and SES ASTRA are instrumental in bringing broadband internet access to 25 million remote homes not connected via cable.⁵

The Digital Divide – Some Facts and Figures

Already prior to “digitalization”, the problem of an international “divide” with respect to telecommunications access was perceived by the “McBride-Commission” in 1980 and by the “Maitland-Commission” in 1984. The latter made the often cited observation that two-thirds of the world population had no access to telephone services, and that Tokyo had more telephones than the whole African continent.

Despite mobile technologies, a digital divide still exists between industrialized and developing countries.

Obviously, in the era of mobile telecommunications this does not hold entirely true for our times. Especially over the last decade, the telecommunication/ICT sector has undergone major changes, with particularly high growth in the mobile sector.⁶ Yet, even though the situation may have improved, there remains a significant disparity between industrialised and developing countries with regard to telecommunications technologies. In Mid-2005, only eight national economies (with a population of less than 160 million inhabitants or approx. 2.5% of the world’s population) had a combined “teledensity” (landlines and mobile) of less than one, in other words: more telephone numbers than inhabitants. The global teledensity figures around 50.

WSIS addressed the problem of the unbalanced distribution of telecommunications infrastructure between regions, countries, and urban and rural areas.

According to the UNDP (United Nations Development Programme) Human Development Report of 2003⁷, developing countries possessed 113 land lines per 1000 inhabitants, compared to 562 in high-income states. Even with regard to mobile phones the report showed that there were still disparities: 134 users per 1000 inhabitants in developing countries compared to 710 users in high-income countries. Regarding internet use, the 2003 Report counted 53 internet users per 1000 inhabitants in developing countries as opposed to 477 per 1000 inhabitants in high-income countries.

WSIS 2003/2005

This was the setting against which the (international) public became aware that something needed to be done. The Millennium Goals had already brought some attention to information and communications, target 18 of the 8th Millennium Development Goal aiming at “mak(ing) available the benefits of new technologies, especially information and communications, in cooperation with the private sector.”

Against this background, the World Summit on the Information Society, in short: WSIS, was initiated by the ITU and endorsed by UN General Assembly Resolution 56/183 of 21 December 2001. WSIS was held in two phases:

- **Phase 1, Geneva, 10 to 12 December 2003.** Its main objective was to develop and foster a clear statement of political will and to take concrete steps so as to create the foundations for an information society for all, reflecting all the different interests at stake. And there were indeed a lot of different interests at stake: the summit was attended by more than 11,000 participants from 175 countries, comprising Heads of state/government, Vice-Presidents, Ministers and Vice-Ministers as well as high-level representatives from international organizations, private sector, and civil

⁵ See ESPI Report 7, Case for Space - Space applications meeting societal needs, October 2007, p. 15. http://www.espi.or.at/images/stories/dokumente/studies/report_case_for_space.pdf (date of access: 1 July 2008).

⁶ <http://www.itu.int/ITU-D/ict/statistics/ict/index.html> (date of access: 1 July 2008).

⁷ UNDP, Human Development Report 2003 - Millennium Development Goals: A compact among nations to end human poverty, New York et al. 2003, available online at http://hdr.undp.org/en/media/hdr03_complete.pdf (date of access: 1 July 2008).

society.⁸ Whereas the resulting **Geneva Declaration of Principles** in turn set out the general objectives,⁹ the **Geneva Plan of Action** served to translate these guiding principles into concrete **action lines**:

C1	The role of public governance authorities and all stakeholders in the promotion of ICTs for development
C2	Information and communication infrastructure
C3	Access to information and knowledge
C4	Capacity building
C5	Building confidence and security in the use of ICTs
C6	Enabling environment
C7	ICT Applications: E-government, E-business, E-learning, E-health, E-employment, E-environment, E-agriculture, E-science
C8	Cultural diversity and identity, linguistic diversity and local content
C9	Media
C10	Ethical dimensions of the Information Society
C11	International and regional cooperation

It is understood that these Action Lines will hardly be effective in isolation. Still, the most important one relating to satellite telecommunications as part of the information and communication infrastructure is Action Line C2.

- **Phase 2, Tunis, 16 to 18 November 2005.** More than 19,000 participants from 174 countries attended Phase 2 of the Summit and related events, again with representatives of governments, high-level representatives from international organizations, private sector, and civil

society. The final documents - the **Tunis Commitment** and the **Tunis Agenda for the Information Society** – were designed to put Geneva's Plan of Action into motion and sought to provide solutions and agreement in the fields of Internet governance, financing mechanisms, and follow-up and implementation of the Geneva and Tunis documents.¹⁰ In the course of the preparation of Phase 2, it was furthermore agreed on a Digital Solidarity Fund, contributions to which are voluntary, however.¹¹

In the preparatory process of WSIS, it was acknowledged that the above described digital divide is to a considerable part due to the unbalanced distribution of telecommunications infrastructure between regions, countries, and urban and rural areas.¹² It was only natural, therefore, that WSIS, while covering the whole spectrum of information and communications, also dealt with infrastructure – which obviously includes satellites and the related technology. In the course of the Geneva Summit, the International Telecommunications Satellite Organization (ITSO) launched a Global Broadband Satellite Infrastructure Initiative, elements of which found their way into the Declaration of Principles and the Plan of Action.¹³

The Aftermath: A Follow-Up

The last WSIS Summit took place more than two and a half years ago. WSIS had started out with ambitious objectives; but which of them have actually been implemented, how is the follow-up coming along, and what needs to be done still, especially regarding the availability of satellite telecommunications?

After WSIS, public attention has decreased and follow-up is fairly dispersed.

⁸ <http://www.itu.int/wsis/basic/about.html> (date of access: 1 July 2008).

⁹ E.g. Principle 19. "We are resolute in our quest to ensure that everyone can benefit from the opportunities that ICTs can offer. We agree that to meet these challenges, all stakeholders should work together to: improve access to information and communication infrastructure and technologies as well as to information and knowledge; build capacity; increase confidence and security in the use of ICTs; create an enabling environment at all levels; develop and widen ICT applications; foster and respect cultural diversity; recognize the role of the media; address the ethical dimensions of the Information Society; and encourage international and regional cooperation. We agree that these are the key principles for building an inclusive Information Society."

¹⁰ <http://www.itu.int/wsis/basic/about.html> (date of access: 1 July 2008).

¹¹ See <http://www.itu.int/wsis/tunis/newsroom/background/solidarity-fund.html> (date of access: 1 July 2008).

¹² International Telecommunications Satellite Organization (ITSO), Global Broadband Satellite Infrastructure Initiative, WSIS/PC-2/CONTR/42-E, 7 December 2002.

¹³ <http://www.ptc.org/PTC2004/program/private/plenaries/wednesday/toumi.ppt> (date of access: 26.4.2008).

The WSIS website¹⁴ draws attention to resolution 2006/46 of 28 July 2006 entitled "Follow-up to the World Summit on the Information Society and review of the Commission on Science and Technology for Development". According to that resolution, ECOSOC (the Economic and Social Council of the UN) oversees the follow-up of the Summit outcomes in the context of its annual consideration of the integrated and coordinated implementation and follow-up of major United

Nations conferences. ECOSOC is assisted by the Commission on Science and Technology for Development (CSTD).¹⁵ The tenth session of the CSTD took place in Geneva from 21-25 May 2007.

One of the themes chosen for the ensuing inter-sessional period was "development-oriented policies for socio-economic inclusive information society, including access, *infrastructure* and an enabling environment" (emphasis added). At the inter-sessional meeting in Kuala Lumpur in November 2007, it was noted that "gaps and overlaps in the WSIS outcomes render the monitoring implementation a challenging task. For example, (...) most recommendations and commitments in the Action Lines in chapter C are not quantified or quantifiable. Additionally, the recommendations and commitments do not always specify the main actors or time frame for implementation."¹⁶ The eleventh session is to take place in Geneva from 24 to 30 May 2008.

In parallel to the follow-up by ECOSOC/CSTD, a cluster of WSIS-related events, such as Action Line Facilitation meetings are being conducted annually.¹⁷ Pursuant to paragraph 108 of the Tunis Agenda, multi-stakeholder implementation at the international level is supposed to be organized taking into account the themes and action lines in the Geneva Plan of Action, and moderated or facilitated by UN agencies when appropriate.¹⁸ Accordingly, UNDP organized the first facilitation meetings on 11th May 2006 "to discuss ways to enhance collaboration and information sharing among diverse stakeholders, to contribute to effective

multi-stakeholder implementation, to identify priority areas for enhanced focus and to explore ideas on how the action line teams might organize their work."

On 16 May 2007, ITU and UNDP held a joint facilitation meeting on action lines C2, C4, and C6 to encourage discussion on promising approaches and key issues to be addressed in order to facilitate implementation. The following Action Line Facilitation meetings were held in Geneva from 19-23 May 2008. In that course, ITU and UNDP held another joint facilitation meeting on action lines C2, C4, and C6.

Not directly related to WSIS, the ITU moreover has initiated "Connect the World", a multi-stakeholder platform through which ITU is working with partners in order to mobilize the human, financial and technical resources required to expand the development of ICT infrastructure, connectivity and access.¹⁹ By encouraging collaboration and coordination as well as showcasing ICT development efforts the connectivity goals of WSIS shall be achieved: to "connect the unconnected by 2015".

In the course of the "Connect the World" initiative, three key areas of activity have been identified as together constituting the primary building blocks for reaching this goal, satellite telecommunications coming under "Infrastructure" in Building Block 2:²⁰

Building Block 1	Enabling Environment
Building Block 2	Infrastructure and Readiness
Building Block 3	ICT Services and Applications

What becomes apparent is that there is no easy answer to the question of concrete implementation of WSIS and WSIS-related measures. It is obvious that after the two major WSIS events, public attention has decreased somewhat, or rather, attention is fairly dispersed. This is surely not only due to the variety of stakeholders with interest in the matter, but also to the broad variety of the subject, infrastructure forming only one part of it. Still, the process of bridging the digital divide continues.

¹⁴ <http://www.itu.int/wsis/follow-up/index.html> (date of access: 1 July 2008).

¹⁵ Cf. <http://www.wsis-si.org/ecosoc.html> (date of access: 1 July 2008).

¹⁶ http://www.unctad.org/sections/dite_dir/docs/dite_pccb_stdev0106_en.pdf (date of access: 01.04.2008).

¹⁷ <http://www.itu.int/wsis/follow-up/index.html> (date of access: 1 July 2008).

¹⁸ E.g. ITU (Action Line C2), UNDP, UNESCO, UNCTAD, WTO, ECOSOC, and UN Regional Commissions.

¹⁹ <http://www.itu.int/partners/index.html> (date of access: 1 July 2008).

²⁰ <http://www.itu.int/partners/bb.asp?lang=en> (date of access: 1 July 2008).

The Way Forward

Whereas WSIS and its follow-up measures show the wide public support to address the problem, these were/are multi-stakeholder approaches, strongly influenced by the so-called “civil society”, and with only a limited role played by states. Instead, it appears that, still – or ever more so – states seem reluctant to commit themselves legally binding to measures for bridging the digital divide.²¹ This must also be seen against the background of the liberalised telecommunications markets, where the role of states has shifted from one of active market player to that of market regulator and guarantor of infrastructure.

States seem reluctant to commit legally binding to addressing the problem, yet developing countries take their fate into their own hands and the industry discovers a new market.

There have been measures driven by states as well as by private actors addressing the digital divide. A rather prominent example is the one-hundred dollar laptop/one laptop per child initiative.²² Moreover, states do indeed provide development assistance to developing countries in the form of financial aid.²³ Other measures specifically addressing the availability of information and communications technology include e.g. “telecentres” (including satellite telecentres) in developing countries,²⁴ sponsored e.g. by international development institutions such as Canada’s International Development Research Centre (IDRC) and UNESCO.

Yet what seems a new and interesting trend is that developing countries are taking their fate in their own hands, e.g. with the recent launch of

the first African telecommunications satellite. On 21 December 2007, RASCOM-QAF1 - named after the Regional African Satellite Communication Organization funding the project - lifted off from the European space base in Kourou, French Guiana, on board an Ariane 5 launcher.

The satellite is set to serve the large African rural market neglected by traditional cell phone carriers, and is supposed to save hundred of millions of dollars a year currently being paid to foreign operators.²⁵

At the same time, internationally active private satellite communication (satcom) operators do seem to discover the market. Their offers might not reach the rural areas in developing countries - yet. However, just as in other markets the mere force of numbers (see e.g. “Nano”, the Tata 2000 dollar car) seems to convince market players to make cheaper offers to reach a wider audience, satcom operators might eventually also go new ways in this direction. The most recent SatCom Africa conference strongly underlines this impression.²⁶

This is the factual - or say the eco-political - aspect to the digital divide. It should be noted, however, that in 2006 less than 5 out of every 100 Africans used the Internet, compared with an average of 1 out of 2 inhabitants of the G8 countries.²⁷ Keeping this in mind, and the vital role that ICTs play for the overall development of a country, there can be no doubt that in the “global public interest” states must play a vital role where the market fails to meet the specific needs of the “information poor”.

²¹ For an account of legally binding norms, see J. Neumann, “Satellite Telecommunications as a Tool for Bridging the Digital Divide – Public International Law Implications”, presentation at the 49th Colloquium on the Law of Outer Space of the International Institute of Space Law (IISL) at the International Astronautical Congress, Valencia, Spain, 2–6 October 2006, published in: IISL Proc. 49th Coll., 2007, p. 411 et seq.

²² See www.laptop.org. For current information, see <http://www.netzwelt.de/news/76436-uruguay-ein-laptop-fuer-jedes.html> (date of access: 1 July 2008).

²³ OECD lists development assistance in 2007 by Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States as amounting to US\$ 103,655 million, <http://www.oecd.org/dataoecd/27/55/40381862.pdf> (date of access: 26.04.08).

²⁴ More on telecentres: <http://www.telecentre.org>.

²⁵ <http://www.engadget.com/2007/12/23/first-african-satellite-launched/> (date of access: 1 July 2008).

²⁶ For more information, see <http://www.terrapinn.com/2008/satcomza/> (date of access: 1 July 2008).

²⁷ <http://www.itu.int/ITU-D/ict/statistics/ict/index.html> (date of access: 1 July 2008).



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