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**The overall review of WSIS
and its implications to the implementation of
and follow-up to the Summit outcomes**

Statement submitted by

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The latest (2015) OECD Information Economy Report brings relevant concepts which deserve some consideration. It refers to a "inclusive and global digital economy", which may be understood as the economic life of society in which economic activity in its totality is mediated by digital networked systems.

Societies are advancing towards this digital economy as more and more processes, transactions, communications are based on digital ICTs. We acknowledge this evolution may involve social disruptions (unemployment, inequalities in qualifications or resources to enable full participation) as well as new opportunities, and these are essential topics in the development of public policies in this transition. Each country ought to have a detailed blueprint for this development to make sure that, given the particular conditions of each country, region, municipality, there is an optimal path of network development. Sharing of best practices and technical expertise among countries is crucial for this process.

The OECD Report recognizes the importance of a telecommunications infrastructure which optimizes deployment of redundant fiber connecting urban areas as the essential basis on which broadband can be offered in every household or office through a combination of wired and wireless systems. In fact wireless services (whether through the cellular network or any other) cannot be effective as broadband services without an underlying, future-proof backhaul to the backbones.

In the last mile, new compression and modulation technologies enable legacy telephone copper wire to deliver broadband in the gigabit per second range, giving new life to the old phone structure. England is a concrete example of deployment of these technologies.

Throughout the world mobile expansion has been exceptional, but does not replace permanent broadband access at the household, school, or office. The ideal paradigm for network development is an optimal combination of high-speed permanent connectivity in every municipality or community (by making sure backbone connections reach those areas) with several forms of wired or wireless communication at the local level, including but not restricted to mobile services offered by large cellphone operators.

The evolution of mobile with the introduction and dissemination of 4G/LTE, and the advance in new radio technologies to explore the full potential of spectrum (secondary use, effective use of idle spectrum), especially software radios capable of automatically scan and select available channels, or use a geolocated spectrum database to do the same, are

*The speech started with a preamble about CGI.br and to remind participants that the text represents the author's personal opinion and not necessarily of the organizations he collaborates with. References in the text below are to the final *Outcome Document of UNGA's High Level Meeting on the Overall Review of the Implementation of WSIS Outcomes*, which can be downloaded from here:

<http://workspace.unpan.org/sites/Internet/Documents/UNPAN95735.pdf>

relevant outcomes in the 10 years since Tunis. New radio technologies open up many opportunities at the edge for innovative deployment of connectivity services by local governments, community groups and local entrepreneurs, and need to be backed by innovative regulatory policies on the subject. The transition to digital TV opens up opportunities for use of VHF and UHF channels for data transmission with the use of the new software radios. I am glad that the outcomes document mentions this in para 32 and that IGF 2015 accepted a workshop on this theme.

So, we need to make sure that conditions (legislation, incentives, regulation) are optimal for innovation at the edge of the network; we need clear spectrum access policies to enable this development at the edge or community level - facilitating secondary use, expanding on unlicensed spectrum blocks, light-licensing for local entrepreneurs, *no* spectrum hoarding, facilitate deployment of new radio technologies, encourage experimentation, and so on. We need to make sure permissionless innovation at the edge is strongly encouraged, instead of concentrating only on the big players of connectivity and value added services; let us remind ourselves that entrepreneurship and innovation are complementary but are not necessarily the same thing, and incentives ought to stimulate new initiatives keeping this in mind.

We should note, regarding paras 14, 22 and 23, the fact that there is more than an Internet-enabled cellular chip per person in some countries does not represent in any way the achievement of access universalization -- despite telcos' advertising to the contrary. Most are prepaid contracts which are very restrictive regarding traffic volume, and a full user experience in today's Internet would make it so expensive that very few of the cellular phone owners would be able to afford. Basically a user is not fully connected just because she or he possesses a cell phone with a prepaid Internet-enabled chip.

Restrictions or band plans imposed by the dominant mobile operators in partnership with large value-added services' companies can limit or block permissionless innovation. New ideas for applications will find it difficult to flourish in those spaces which create "walled gardens" for their users. This is the case of several forms of "zero-rating" plans which have been extensively analyzed and criticized by many specialists.

E-government is crucial for better, speedier, more secure and transparent coordination, execution, and monitoring of public policies; but the generalization or universalization of e-gov depends on the proper connectivity of every citizen at affordable prices and with quality compatible with each stage of evolution of the Internet, for each and every household, for each and every family, for each and every organization or business. The exercise of e-rights (rights exerted or affected online), like consumer rights, taxpayer rights, the right of access to culture, information and education online, every right which can be affected by being online, or exerted online, as industry and government services migrate or are made available on the network, must be assured.

The way certain network features are employed may not be an adequate parameter to measure the advance of the digital economy. Organizations may not use cloud services for reasons of security or possible difficulties in access (network down etc) but they may have their own private cloud in a network within their premises or under their total control, and this does not make them less included in the digital economy than other organizations that use off-site cloud services. This is particularly relevant in a scenario in which the cloud may

be subject to surveillance.

Innovation in the digital economy will continue to break paradigms in business forms, which requires a corresponding process of evolution or innovation in regulation and legislation, together with changes in these business forms. One current example, the challenge to traditional taxi services presented by Über, Lyft and other similar applications, in which the traditional service structure is confronted with a rupture similar to the introduction of online streaming or downloading in the case of media companies. Über does not own a single car, much as Ali-baba does not own a single merchandise. Multistakeholder participation in the formation of policies to respond to these changes without jeopardizing innovation is crucial.

Mechanisms which strongly stimulate innovation (as the very successful initiatives of accelerators of startups in advanced countries) are essential and urgent, and require decided and effective support from governments, academia and private sector, besides a systematic exchange of ideas and experiences among innovation groups in different countries. These mechanisms ought to open opportunities to low-income youth as well and be regionally well distributed in each country.

The network today is complex and fragile, vulnerable to invasions, attacks, fraudsters and surveillance by public and private agents. This requires significant advances in protecting users when doing online transactions or otherwise exposing their personal data. Vulnerability is such that recently a Italian company which is one of the top vendors of surveillance software was itself "surveilled" by hackers, a devastating penetration which took out most of its sensitive customers' data, and in the process revealed the worrisome broadness in the use of such software by governments, companies and other agents keen to practice unauthorized capture of users' data.

Cryptography with no backdoors is essential to counterbalance these vulnerabilities. But even the market of commercial certifiers makes this expensive for the small organization or individual user. To guarantee that all connections to Web services is encrypted is essential to mitigate violations. There are initiatives to provide certification at no cost to the user which deserve to be seriously considered and supported.

The Internet has become a tremendous, indispensable tool for development. This is recognized in paras 5 and 13 of the outcomes document. The Internet reached the broadness, sophistication, diversity and quality of services on a planetary level thanks to the fact that throughout its explosive growth it has been kept open for innovation, for experimentation, for creativity. We can say that the Internet is a fundamental tool for development also because of its very open development logic.