INTRODUCTION

Global Partners Digital and ARTICLE 19 welcome the efforts of the ITU and its Council Working Group on International Internet-related Public Policy Issues (CWG-Internet) to engage with various stakeholders by holding this Open Consultation. We appreciate the opportunity to provide this Working Group with our perspectives on developmental aspects of the Internet, and we look forward to the discussions that will follow. This joint contribution seeks to answer the three questions put forth by the CWG-Internet.

Global Partners Digital is a social purpose company dedicated to fostering a digital environment underpinned by human rights and democratic values. We work with a range of different stakeholders around the world – including governments, businesses and civil society organisations – in pursuit of two core aims: to empower a wider diversity of voices to engage in internet-related decision-making processes; and to make these processes more open, transparent and inclusive.

ARTICLE 19 is an international human rights organisation that works to protect and promote free expression, which includes the right to speak, freedom of the press and the right to access information. With regional programmes in Africa, Asia, Europe, Latin America and the Middle East and North Africa, we champion freedom of expression at the national, regional and international levels.

Summary

We recognise that increasing access to the Internet has the potential to support development (and vice versa). However, greater connectivity alone is not enough and three further considerations must be borne in mind: equitable internet infrastructural development; rights-respecting legal, regulatory and policy frameworks; and open, inclusive and transparent Internet-related policy-making processes.

In considering these dynamics, we provide a series of recommendations on how to help achieve the full potential benefit of greater Internet access to sustainable development: investment in infrastructure should be equitable; increasing access should not simply be a numbers game, but take into consideration the need to leave no one behind; there should be a focus on better spectrum management; digital education should be supported and increased; the Internet must be a rights-respecting environment so as to ensure the trust of users; and Internet-related policy-making processes must be open, inclusive and transparent.

We conclude with an examination of some of the challenges in the current social, political and economic environment facing states in facilitating greater access to the Internet whilst ensuring sustainable development, as well the potential opportunities offered by the clear, internationally agreed-upon frameworks relating to sustainable development and the Internet.

QUESTION ONE

> *What are the developmental aspects of the Internet (for example, economic, social, regulatory and technical aspects), especially for developing countries?*

(a)   The Links between Internet Access and Sustainable Development

The links between access to the Internet and development are well-established and mutually supportive. Increasing access to the Internet has the potential to support sustainable development in a number of fields, such as economic growth, education, health, employment, gender equality and peaceful and inclusive societies and institutions. Sustainable development in societies will also increase demand for the Internet and accelerate take up, and thus also increase levels of access.

In its Resolution 70/125, the UN General Assembly adopted the outcomes of the WSIS Review, which highlighted the links between greater access to and innovation within the Internet, and sustainable development. Indeed, the Resolution recognised that "access to information and communications technologies has also become a development indicator and aspiration in and of itself."[1] This is clear through the 2030 Agenda for Sustainable Development Goals and the Sustainable Development Goals (SDGs) themselves, most explicitly through Target 9.c of the SDGs to "Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020".

Increasing access to the Internet and other information and communication technologies (ICTs) is not only an aspect of sustainable development in and of itself; such access also facilitates the realisation of human rights and promotes many other aspects of sustainable development, both economic and social:

- **Economic Growth**: By promoting inclusion, efficiency and innovation, the Internet, alongside other technological developments, has supported economic development and growth.[2] Businesses can trade and work with a greater range of consumers and partners; transactions are faster, cheaper and more convenient; and the Internet offers new, innovative models of providing goods and services, and provides new business opportunities in creating and delivering digital goods and services. All of these factors create opportunities to accelerate economic growth.[3]

- **Education**: Digital technologies, including the Internet, provide new opportunities in promoting education. One example recently highlighted by the UN Special Rapporteur on the right to education is the new forms of education made available

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[1] United Nations General Assembly, Resolution 70/125, Outcome document of the high-level meeting of the General Assembly on the overall review of the outcome of the World Summit on the Information Society, UN Doc. A/RES/70/125, 1 February 2016, Para 5.
[2] See, for example, World Bank, *Digital Dividends*, 2016, in particular "Spotlight 1, How the internet promotes development", pp. 42-46.
[3] *Ibid.*, p. 50.

by access to the Internet - such as open educational resources - which "can harness the new possibility afforded by digital technology to address common educational challenges".[4]

- **Health**: The Internet offers significant opportunities to improve access to, and the quality of, healthcare. Individuals can access more information regarding health and healthcare; healthcare providers can share information and data relating to health or patients more easily; and communication between individuals and healthcare providers becomes simpler. Practical examples of new or improved means of delivering healthcare include digital Health Management Information Systems, telemedicine, electronic medical records, clinical decision support and patient portals.[5]

- **Employment**: An analysis of existing literature and surveys conducted by the World Bank in 2016 concluded that there was "a positive causal effect of firms' technology adoption on employment and earnings, especially in firms with skilled workers who can make the best use of digital technologies".[6] The World Bank also concluded that, by lowering information barriers and costs, access to the Internet "gives rise to new paraopportunities for entrepreneurship and self-employment" both in the ICT sector and other ICT-enabled sectors.[7]

- **Gender Equality**: Given the benefits to many areas of development where women have historically experienced disadvantage and discrimination, including education, healthcare and employment, the opportunities provided by access to the Internet have a particular potential with regards to women. Access to the internet offers the possibility of addressing the disadvantages historically experienced by women and thus furthering gender equality. Hence target 5.b of the SDGs, which aims to "enhance the use of enabling technology, in particular information and communications technology, to promote the empowerment of women".

- **Peaceful and Inclusive Societies and Institutions**: By increasing the flow of information between individuals and between the government and the citizen, and by offering new ways of communicating and interacting, the Internet provides opportunities for societies to become more inclusive and institutions more effective, accountable and thus stronger. Together, these opportunities may also help facilitate peace within societies and states. The opportunities stretch across a variety of contexts: from greater provision of information and more efficient delivery of services by the government, to more participatory policy-making processes, to greater transparency and accountability mechanisms. These tie in with a number of the goals within SDG 16 such as to ensure "responsive, inclusive, participatory and representative decision-making at all levels" and "public access to information".

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[4] UN General Assembly, *Report of the Special Rapporteur on the right to education*, UN Doc. A/HRC/32/37, 6 April 2016, Para 30.
[5] See above, note 2, p. 191.
[6] *Ibid*., p. 107.
[7] *Ibid*., pp. 108-109.

As well as the many benefits of greater Internet access to sustainable development, the process is not just one way. It is equally true that greater sustainable development will support greater access to the Internet. Improvements to the health, education and economic development of a society will increase demand for the Internet and accelerate take up and thus levels of access. Sustainable development and greater Internet access thus have the potential to be mutually supporting goals.

(b)   Considerations when Increasing Internet Access

Although, as evidenced above, increasing access to the Internet has the potential to support sustainable development, simply providing greater access in and of itself is not sufficient as it cannot alone ensure the full potential benefit of the Internet. Inequitable infrastructural developments; inadequate legal, regulatory and policy-making structures and closed Internet-related policy-making processes may reinforce or even exacerbate the social, economic and political inequality, marginalisation or exclusion of groups and communities online. To fully leverage the benefits and avoid the harms, there are three essential pre-conditions:

(i)   Internet infrastructural development must be equitable;
(ii)   Legal, regulatory and policy frameworks related to the Internet must be rights-respecting; and
(iii)   Internet-related policy-making processes must be open, inclusive and transparent.

(i) Equitable Internet Infrastructural Development

The developmental potential of the internet is more likely to be enhanced if complemented by Internet infrastructure development plans and policies which take into consideration the need for equity and to leave no one behind. This means ensuring that considerations of affordability and access by different socioeconomic groups, the different levels of information literacy within societies, cultural differences within societies, and the specific needs of different groups based on disability, language, age and other characteristics, are all taken into account.

As of 2017, 53% of the world's population has yet to come online; the overwhelming majority of these people live outside the U.S. and Europe. Nearly 75% of people in Africa do not use the Internet - and it's not irrelevant that Africa also has the lowest international connectivity of all regions, based on bandwidth subscription.[8] That the existence of this digital divide is linked to the existence of physical ICT access is not a novel concept.[9]

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[8] ITU, *ICT Facts and Figures 2016*, 2016, "M2M, IoT and Bandwidth", p. 7.
[9] The digital divide has long been considered within Internet Studies literature. Its conceptual rootedness in physical infrastructure can be traced to the Castellian sociological theory of the Internet: it creates a network-based social structure that is defined, in part, by inequalities in access. *See* Manuel Castells, *The Rise of the Network Society* (2000). Since then, scholars across disciplines have continued to consider the digital divide in this way. *See, for example*, Mamoun Fandy, *Information Technology, Trust, and Social Change in the Arab World*, Middle East J. 378 (2000); Ernest J. Wilson, *The Information Revolution and*

However, this unequal distribution of Internet infrastructure and resources must be considered beyond a global scale that dichotomises developed and developing states to the localised contexts within states themselves.

Just as with other resources, the distribution of Internet access is subject to the differences in advantage that already exist within a society. Technology distribution, particularly the growth of ICT infrastructure, is susceptible to differences in accumulated advantage.[10] Unless developments in infrastructure are equitably distributed, gaps in advantage will become more entrenched or widen further, limiting or reversing social and economic developments. Socially or politically vulnerable communities are the most susceptible to exclusion from robust Internet connectivity under any efforts to develop physical Internet infrastructure. The indicator of achieving greater access should therefore not simply amount to an overall increase in the number of people who use the Internet; rather, it must also consider whether certain groups remain excluded from such increase.

The OAS Special Rapporteur on Freedom of Expression, for example, has set out how this can be achieved, through:

> measures that ensure that price structures are inclusive in order to facilitate access; that connectivity extends throughout the States territory, in order to effectively promote access for rural users and marginal communities; that communities have access to information technology … and other options for public access; and that efforts for training and education are reinforced, especially for poor, rural and older segments of the population. Universal access also places a priority on ensuring equitable access when it comes to gender, as well as inclusive access for disabled individuals and/or individuals belonging to marginalized communities.[11]

By taking on these measures and others (for example, carrying out impact assessments on the effects of plans or policies on different groups of people), those who develop the physical infrastructure of the Internet - whether states or private sector actors - will be able to do so in a way that is equitable and avoids leaving groups behind, thus making it more likely that the full economic and social developmental benefits of greater Internet access are realised.

Developing Countries (2004); Deborah L. Wheeler, *Does the Internet Empower? A look at the Internet and International Development*, Handbook of Internet Studies (2011).

[10] See, above, note 2, p. 147, where the Matthew effect in the context of technology is described: "Those most likely to benefit from the use of new technologies … are those who already enjoy many privileges related to wealth, existing levels of education, and prior exposure to technology in other contexts. Policies that neglect to consider this phenomenon may result in projects that exacerbate existing divides within an education system, and indeed within larger society."

[11] Office of the Special Rapporteur for freedom of expression, Inter-American Commission on Human Rights, *Freedom of Expression and the Internet*, 2013, p. 6.

Development aspects of the internet are more likely to be enhanced when they are supported by legislative, regulatory and policy frameworks that facilitate the Internet as a space that both respects and enables the human rights of all its users, and thus builds and promotes users' trust in the Internet.

The legal, regulatory and policy frameworks related to the Internet that states develop and implement - from its infrastructure to its content - should help build users' trust in the Internet as a public sphere and their confidence in the structures and other actors that enable access to it. This is critical in sustaining the benefits to economic development that greater Internet access can provide. By trusting that the digital market is a space that is not restricted by the interests of any single actor, those who are connecting to the Internet can drive forward innovation online through engaging in robust competition and contributing to the diversity of new ideas. Exchanges of knowledge and data can flow unencumbered, the potential for collaboration increases, and the Internet becomes a platform on which entrepreneurs can build new businesses.

At the same time, an Internet that users fully trust becomes a platform that users can depend on for accessing information and for free expression, which are critical rights to social development initiatives. Individuals can express their own development challenges and directly engage with governments to improve public services. Civil society and the private sector can also take advantage of this access to information in order to undertake targeted research and development to recommend public service improvements. Regardless of geographic location, people can attain a clear understanding of the public services that are available to them, including those that may be available more efficiently online.

While benefits of building trust in the use of the Internet are clear, efforts to do so may be undermined by practices which subvert the human rights protections that individuals should enjoy online,[12] including (but not limited to):

- **Censorship:** There are two types of Internet censorship policies: blocking online content and filtering data flows in order to control where this data can and cannot travel across the network. The impacts of censorship on human rights are clear: imposing blocks on content undermines the author's right to free expression, and both blocking and filtering control what users' can experience online, so that they can no longer enjoy their right to fully and independently access information. Such restrictions also significantly weaken users' trust and confidence in the Internet. According to a 2016 study conducted by Deloitte, recurring disruptions to access create unpredictability in the Internet as a business environment. Over time, this uncertainty in what content may or may not be accessible to users leads to

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[12] See United Nations Human Rights Council, Resolution 32/13, The promotion, protection and enjoyment of human rights on the Internet, UN Doc. A/HRC/RES/32/13, 18 July 2016, where the Human Rights Council affirmed that "that the same rights that people have offline must also be protected online".

individuals leaving the digital market altogether.[13] Censorship threatens the robustness of economic development on the Internet.

- **Surveillance:** With regards to surveillance, the 2013 report of the UN Special Rapporteur on freedom of expression identified that surveillance technologies have the potential to violate the right to privacy, thereby undermining people's confidence and security on the Internet and impeding the free flow of information and ideas online.[14] Without this confidence and security, "surveillance systems, both targeted and mass, may undermine the right to form an opinion, as the fear of unwilling disclosure of online activity ... deters individuals from accessing information."[15] This is the chilling effect: the fear of surveillance compels users to refrain from using their human rights to speak and to know, the very activities that ensure robust social development. By curbing these rights, the fear of surveillance ultimately drives users away from connecting to the Internet altogether.

- **Network disruptions:** Finally, even as accessibility to the Internet increases and more people come online, the frequency of network disruptions across the world is also increasing.[16] States use varied claims to validate such a blunt and disruptive measure on such a mass scale, from maintaining public order to national security. However, shutting down Internet services results in high costs. Shutdowns block access to information and communication, which are particularly critical in responding to the very crises governments may have reacted to with such an action in the first place. It also incurs significant harm to economic development: the Brookings Institute estimates that Internet shutdowns cost countries approximately $2.4 billion in 2015 alone.[17] Most fundamentally, there is growing consensus that Internet shutdowns and other network disruptions violate international law. In a 2016 resolution, the UN Human Rights Council "[condemned] unequivocally measures to intentionally prevent or disrupt access to or dissemination of information online in violation of international human rights law, and calls upon all States to refrain from and cease such measures."[18]

Thus, even where states and policy-making forums successfully develop the physical infrastructure that enables every individual to connect to the Internet, attempts to block content and filter data flows will nevertheless render such access incomplete. The resulting lack of confidence in this access is compounded by the self-censorship that develops in response to state surveillance practices and proposals to weaken users' efforts towards

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[13] Deloitte, *The Economic Impact of Disruptions of Internet Connectivity: a report for Facebook*, 2016, p. 18.

[14] UN Human Rights Council, *Report of the Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, David Kaye*, UN Doc. A/HRC/29/32, 22 May 2015, Para 16.

[15] *Ibid.*

[16] Center for Technology Innovation, Brookings Institute, Internet Shutdowns Cost Countries $2.4 Billion Last Year, 2016, p. 5.

[17] *Ibid*., p. 9.

[18] United Nations Human Rights Council, Resolution 32/L.20, Promotion and protection of all human rights, civil, political, economic, social and cultural rights, including the right to development, UN Doc. A/HRC/32/L.20, 27 June 2016, Para 10.

greater anonymity or better security, such as governments' calls to build backdoors to encryption technologies. Users lose fundamental trust in this space and its governance, dissuading individuals from using the Internet, even where they are able to.

(iii) Open, Inclusive and Transparent Internet-Related Policy-Making Processes

Open, inclusive and transparent approaches to Internet-related public policy-making - at all levels, whether national, regional or global - are essential to ensuring that increasing Internet connectivity helps enable sustainable development across the world.

The outcomes of the WSIS Review included a clear recognition that the management of the Internet, which includes public policy issues, required "transparent, democratic and multi-stakeholder processes, with the full involvement of Governments, the private sector, civil society, international organizations, technical and academic communities and all other relevant stakeholders in accordance with their respective roles and responsibilities."[19]

Similarly, in its final report, the Global Commission on Internet Governance (GCIG), a panel of 29 experts from across the private sector, government, academia and civil society, concluded that "effective and long-term stable policy making [on matters of Internet governance] results when all affected have a voice and method for influencing the process and providing input."[20] While relevant forums have taken some steps in recent years to do so, the dialogue within Internet-related policy-making processes continue to leave little space for meaningful stakeholder inclusion.

First, it is important to explore why openness and inclusivity in Internet-related policy-making spaces are necessary for sustainable development - and in fact, the following reflections also exemplify just how interconnected these issues of access are:

- **Economic:** The pluralism of stakeholders envisioned in the WSIS Review outcome and CGIG report would mitigate the threat of any single interest capturing policy-making processes in order to exert control over the digital market. Otherwise, gatekeepers would stand in the way of the market doorway, and mistrust among potential new entrants would grow. Just as is explained in the previous section, a lack of trust and confidence in the Internet stifles digital innovation, leaving the digital market at risk of becoming stagnant. Hence, the OECD has underpinned its principles for Internet policy-making with the recommendation to encourage "multi-stakeholder cooperation" in policy development processes.[21]

- **Social:** As discussed above, building universal accessibility is necessary for facilitating social development. In order to ensure that no one is left behind, minority and vulnerable communities need to engage in Internet-related policy-making

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[19] See above, note, 1, Para 57.
[20] Global Commission on Internet Governance, _One Internet_, 2016, p. 10.
[21] OECD, _OECD Principles for Internet Policy Making_, 2014, "Recommendation of the OECD Council on Principles for Internet Policy Making", pp. 22-23.

processes through which the approaches to Internet promotion are developed, by voicing what is needed to make the Internet accessible to all parts of society.

However, these reforms to Internet-related policy-making do not reach deep enough. Transparency must accompany openness and inclusivity because, when achieved together, these policy-making principles engender greater trust in the Internet itself. A 2014 survey carried out by the Centre for International Governance Innovation and Ipsos in 24 countries found that 57% of Internet users want a form of governance "that includes citizens, and not just experts, international institutions or combinations of countries."[22] At the same time, 52% did not believe that their own government does a very good job of making sure the Internet in their country is safe and secure; a significant number of respondents believed that their own government (34%) and governments other than their own (43%) restrict Internet access.[23]

These statistics indicate a deep sense of mistrust among Internet users of states and their interests. Citizens want to be directly represented in these spaces in order to check governments and other participating stakeholders. Of course, establishing open and inclusive processes will facilitate the kind of multistakeholderism clearly desired by these users. But by also promoting greater transparency in how states and other actors participate in these discussions and how resolutions unfold, this mistrust in the accessibility of the Internet itself may be eased.

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[22] Centre for International Governance Innovation & Ipsos, *Global Survey on Internet Security and Trust*, 2014, pp. 3-4.
[23] *Ibid.* p. 4.

QUESTION TWO

> *How can governments and other stakeholders promote the developmental aspects of the Internet?*

As identified above, greater access to the Internet is not only an indicator of development in and of itself, but also has the potential to deliver a number of development-related benefits. However, these benefits will not be fully realised unless the considerations highlighted above are reflected in real efforts made and actions taken by governments and other stakeholders. In this section, we make a series of recommendations that, if efficiently implemented, will promote the developmental aspects of the Internet in a manner that will help fully realise its potential benefits while avoiding risks.

- **Investment in infrastructure should be equitable.** States should invest and support investment by others in national Internet infrastructure, ensuring that this network extends to marginalised communities and areas that are remote or sparsely populated. States should also invest and support investment by others in the establishment of public facilities that provide accessible and affordable ICT services, as well as community-based broadband initiatives, such as municipally-owned networks. The regulatory environment for Internet and wireless network service providers should prohibit against monopolistic or oligopolistic practices and other market abuses.

- **Access should not simply be a numbers game.** When measuring Internet connectivity, particularly in terms of the number of broadband subscriptions per capita, states, businesses and others who collect and measure connectivity data should disaggregate such data based on gender, age, geographic area, and minority communities including ethnicity, religion, and persons with disabilities. This data should be analysed in regular reporting cycles to determine how Internet accessibility is spreading across all communities and regions.

- **Focus on better spectrum management.** States should evaluate existing spectrum management policies to determine where frequency allocation can be optimised, either by identifying frequencies within traditional wavebands that are unoccupied - such as television - or through dynamic spectrum-sharing assignments. More efficient spectrum management can create greater opportunities for the adoption and spread of new Internet-based technologies.

- **Development depends on digital education.** States should support digital education programmes, including through the general education system. The content of such programmes should include, but should not be limited to, digital literacy and security. As with increases to Internet access, such educational programmes should be available on an equitable basis, ensuring that no group or community is excluded, disadvantaged or otherwise left behind.

- **The Internet must be a rights-respecting environment.** States should ensure that all legislative, regulatory and policy frameworks applied in the development of Internet-related policies, whether at the national, regional or global level, are consistent with international human rights laws, including the Universal Declaration of Human Rights and all international human rights treaties to which states are party. The following recommendations are particularly relevant to ensuring that the Internet is an enabling environment for the human rights of its users:

    - States should refrain from engaging in **censorship** through any restriction of the free flow of information or control of content online. All blanket measures to filter data flows should be prohibited under the law, as any filtering should be controlled by the user under transparent conditions. Any requirement to block content must be provided by laws that are publicly accessible, clear, precise and non-discriminatory. These laws must be overseen by an independent, impartial and competent adjudicatory authority. The orders must strictly adhere to the principle of proportionality. Furthermore, states should refrain from making any special or secret agreements with private third party actors to restrict or limit access to online content, and should not interfere with the integrity of any transparency reporting carried out by the these actors.

    - **Surveillance**, including the interception, collection, and analysis of communications and other data, over the Internet by government authorities must be provided by laws that are publicly accessible, clear, precise and non-discriminatory. The orders must be overseen by an independent, impartial and competent adjudicatory authority. Additionally, independent accountability mechanisms must be in place to investigate suspected abuses to human rights and to provide effective remedy where cases of unlawful or arbitrary surveillance are determined. The orders must strictly adhere to the principles of necessity and proportionality. The purposes under which any surveillance action is authorised must be legitimate and openly specified in advance.

    - When addressing **security** concerns, third parties should not be required to weaken or compromise encryption standards, and in fact should encourage them in technical protocol and standards development. Government authorities should not be granted authorisation to access encrypted data when such access would compromise the security of others' data beyond the standards of necessity and proportionality.

    - **Network disruptions** can never be justified and states should not mandate, authorise or otherwise sanction such disruptions. Network disruptions include any prevention, limitation or restriction on the ability of individuals to communicate, access or disseminate information through the Internet, including social media, instant messaging and Voice over Internet Protocol services.

- **Policy processes must be open, inclusive, and transparent.** All Internet-related governance and policy-making forums, whether national, regional or global, should be underpinned by an open, inclusive and transparent approach. Such approaches should take into account established best practices including, for example, the relevant sections of the World Society on the Information Society Tunis Agenda for the Internet Society,[24] the Organisation for Economic Co-operation and Development's Principles for Internet Policy Making,[25] and the NETmundial Multistakeholder Statement on Internet Governance Principles.[26]

[24] World Society on the Information Society Tunis Agenda for the Internet Society, UN Doc. WSIS-05/TUNIS/DOC/6(Rev. 1)-E, 18 November 2005, available at: ,http://www.itu.int/net/wsis/docs2/tunis/off/6rev1.html

[25] Organisation for Economic Co-operation and Development – Principles for Internet Policy Making,2014, available at: https://www.oecd.org/sti/ieconomy/oecd-principles-for-internet-policy-making.pdf.

[26] NETmundial Multistakeholder Statement: Internet Governance Principles, 2014, available at: http://netmundial.br/wp-content/uploads/2014/04/NETmundial-Multistakeholder-Document.pdf.

QUESTION THREE

> *What are the challenges and opportunities?*

In answering the above two questions, we have set out the clear links between access to the Internet and sustainable development, and how governments and other stakeholders can ensure that efforts to increase access to the Internet will fully realise the developmental benefits. Such efforts will not, however, take place in a vacuum. The current social, political and economic environment presents a number of challenges that will need to be overcome or mitigated. These include, but are not limited to: rapidly evolving technologies and the resulting complexity of the technology and policy landscape; the growing securitisation of Internet policy issues; the lack of capacity of some stakeholders to effectively engage in debates related to the Internet and development; the fact that many policy-making spaces are insufficiently open, transparent and inclusive; and the financial disincentives to invest in the potentially less profitable areas of physical Internet infrastructure development, which present the risk of furthering the digital divide.

Such challenges are not, however, insurmountable and nor should they be considered as rendering implementation of the above recommendations unfeasible. Governments and other stakeholders should take into consideration the challenges highlighted and ensure that they are addressed or mitigated through thoughtful and considered policy development, when implementing our recommendations.

Indeed, there are also opportunities which, if fully seized, will encourage and facilitate progress. There is a clear, internationally agreed-upon framework for sustainable development (the 2030 Sustainable Development Agenda and the Sustainable Development Goals) that weaves access to the Internet and other information and communication technologies across different fields of application. Similarly, the WSIS Action Lines provide a clear, internationally agreed-upon framework for achieving a "people-centred, inclusive and development-oriented Information Society", with different stakeholders leading on different initiatives. These frameworks provide focus and targets for governments and other stakeholders in making progress on these issues as well as mechanisms for monitoring progress.