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ECLAC

Economic Commission for Latin America and the Caribbean
subregional headquarters for the Caribbean

Informational webinar on the proposed eLAC 2018 Digital Agenda
18 June 2015
Port of Spain, Trinidad and Tobago

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REPORT OF THE INFORMATIONAL WEBINAR ON THE PROPOSED eLAC 2018 DIGITAL AGENDA

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CONTENTS

A. SUMMARY OF RECOMMENDATIONS

1. ECLAC will suggest revisions to the working document for the consideration of the steering committee of eLAC and Caribbean Information and Communication Technology (ICT) ministries and stakeholders.

2. ECLAC will notify ICT ministries and stakeholders when eLAC opens the call for working groups and members.

3. Member States are encouraged to participate in the meeting in Mexico City on 5-7 August 2015 so as to be in a position to make desired changes to the proposed eLAC 2018 Digital Agenda.

4. Individual countries are welcome to make submissions. Regional submissions will also be accepted.

5. The possibility of raising this matter at meeting of the Council for Trade and Economic Development (COTED) (ICT) to be held 23 June 2015, will be explored with CARICOM.

B. ATTENDANCE AND ORGANIZATION OF WORK

1. Place and date of the webinar

6. The Informational webinar on the proposed eLAC 2018 Digital Agenda was held on 18 June 2015 at the Economic Commission for Latin America and the Caribbean (ECLAC) subregional headquarters for the Caribbean in Port of Spain, Trinidad and Tobago. Online participation was utilized.

2. Attendance

7. The webinar was attended by representatives from the Ministry of Communication, Works and ICT of Grenada, the Ministry of Foreign Affairs, Foreign Trade, Commerce and Information Technology of St. Vincent and the Grenadines, the Ministry of Science and Technology of Trinidad and Tobago, the Ministry of Transport, Communication and Tourism of Suriname, the Caribbean Broadcasting Union (CBU) of Barbados, the Central Information Technology Office (CITO) of Belize and the Caribbean Knowledge and Learning Network (CKLN) of Grenada. The webinar was hosted by the Caribbean Knowledge Management Centre (CKMC) of the ECLAC subregional headquarters for the Caribbean in Port of Spain. The Coordinator of the Ministerial Conference on Information Society from ECLAC headquarters in Santiago, Chile also participated. A complete list of participants is annexed to this report.

3. Agenda

8. The webinar discussed the following agenda:

1. Opening and introduction

2. Presentation on the Digital Agenda for Latin America and the Caribbean (eLAC2018)

3. Presentation on the eLAC 2018 Digital Agenda working paper: Access and infrastructure

4. Presentation on the eLAC 2018 Digital Agenda working paper: Digital economy

5. Presentation on the eLAC 2018 Digital Agenda working paper: eGovernment

6. Presentation on the eLAC 2018 Digital Agenda working paper: Social inclusion and sustainable development

7. Presentation on the eLAC 2018 Digital Agenda working paper: Governance

8. The way forward

9. Closing remarks

C. SUMMARY OF PROCEEDINGS

Item 1: Opening and introduction

9. Opening remarks were made by the Chief of the CKMC of ECLAC subregional headquarters for the Caribbean. He welcomed all participants to the informal webinar, the intent of which was to inform Caribbean Information and Communication Technology (ICT) professionals on the proposed eLAC 2018 Digital Agenda which will be considered at the Fifth Ministerial Conference on the Information Society in Latin America and the Caribbean scheduled to be convened in Mexico City 5-7 August 2015.

10. He shared with the participants that the purpose of this webinar was primarily to facilitate the Caribbean perspective on the draft programme of work outlined in the eLAC 2018 Digital Agenda. The ministerial conference in August 2015 would seek to garner census on the path of the ICT sector in considering its use in successfully implementing the post 2015 development agenda.

11. He informed that the distillates from that regional session would feed into the larger global conversation to consider the draft framework of the World Summit of the Information Society (WSIS), which was due for finalization at the end of 2015.

Item 2: Presentation on the Digital Agenda for Latin America and the Caribbean (eLAC2018)

12. The representative of the ECLAC headquarters in Santiago traced the development of the Digital Agenda for Latin America and the Caribbean (eLAC) while explaining that it was an interface which engaged the political conversation on the Information Society in Latin America and the Caribbean. The main objective was to influence policy making, share best practices and support regional cooperation. Being the Secretariat of eLAC, ECLAC monitored progress, published information and relevant documents and facilitated exchange among stakeholders. The decade long discourse culminated with the WSIS +10 high level event in 2014. The event reviewed the 2003 and 2005 WSIS Outcomes related to the WSIS Action Lines and agreed a vision on how to proceed beyond 2015. The fifth ministerial was to be the region's preparation to shape the Digital Agenda as part of the post-2015 development agenda. He carefully outlined the overall follow-up mechanism.

There were three main sections:

(a) **Technical Secretariat** – Responsible entity: (ECLAC). The technical Secretariat had the responsibility for monitoring and information facilitation;

(b) **Coordination Committee** – Responsible entities: the Indicators Commission, national focal points and the working groups;

(c) **Observers** - Responsible entities: civil society, private sector, technical community.

13. He highlighted the 14 current working groups: access and infrastructure, regulatory frameworks, technological waste, e-commerce, ICT health and social security, consumer protection, digital content, internet governance, IT industries, IT and gender, cybersecurity, e-Education, tele-work and open data.

14. The floor was then opened for discussion. The chair sought clarification on the structure of the working groups. The ECLAC representative informed that these were mechanisms that facilitated dialogue to promote and share information. One participant asked whether there was lateral room to reformulate those working groups after the ministerial conference. She also enquired on the way in which countries would be able to participate in the process. The ECLAC representative shared existent limitations which prevented the restructuring of all 14 groups. He noted, however, that each group had a designated coordinator through which interested countries could engage.

Item 3: Presentation on the eLAC 2018 Digital Agenda working paper: access and infrastructure

15. The Associate Information Management Officer presented the eLAC 2018 in five thematic areas and outlined his suggestions for amendments to address each objective treated within a Caribbean context. The eLAC Digital Agenda proposal and the working paper on the eLAC 2018 Digital Agenda in consideration of Caribbean priorities for technology-supported development are both annexed to this report for ease of reference.

16. Objectives 1 through 5 were addressed under Access and Infrastructure. Objective 1 dealt with universal access. He suggested the inclusion of "affordable" access to read "affordable universal access". His argument for this inclusion was the fact that cost was a debilitating constraint for the region. However, this access needed to be quantified to ensure that connectivity could be extended to citizens without mobile devices.

17. The ECLAC subregional headquarters for the Caribbean representative recommended the upgrade to broadband as this would vastly decrease the overall costs which was demonstrated by Saint Vincent and the Grenadines that realised up to 50 per cent cost saving within one year.

18. Objective 2. He noted that the Caribbean Telecommunications Union (CTU) undertook the project to coordinate the Harmonized Caribbean Spectrum Planning and Management project.

19. Objective 3. He recommended the addition of satellite systems to the regional and subregional telecommunications infrastructure. He showcased some examples of these new generation communication satellite networks such as Virgin GAlaclite and Air Bus – one web – 648 satellites and Space X – 4000 satellites which orbit the earth and realise shorter ping times.

20. Objective 4. He inserted the cost dimension into achieving substantial improvements in the next-generation broadband networks.

21. He recommended that Objective 5 consider digital terrestrial television (DTT) in the region through coordinated standards adoption for an eventual digital radio switchover. He noted that since DTT was gaining significant importance, the Caribbean needed to get on board. He recommended an additional objective under this theme. The additional objective was: "*Promote the use, and good governance of universal service funds (USFs) as a sustainable funding mechanism for public investment in ICT infrastructure, the maintenance of community access points, and outreach and training initiatives designed to expand participation in the digital economy*".

22. The participant from the Caribbean Knowledge and Learning Network (CKLN) sought clarification as to whether the relevant national authorities were identified to facilitate the implementation of Objective 5. ECLAC acknowledged that this discussion would be considered within the working groups.

Item 4: Presentation on the eLAC 2018 Digital Agenda working paper: digital economy

23. This theme was considered under Objectives 6 to 10. Under Objective 6, he thought that Caribbean entities should be considered as producers not merely as consumers.

24. The suggestion he proposed for Objective 7, was the inclusion of innovating financing and revenue models especially for Small and Medium Enterprises (SMEs). The systems included were: crowd funding, use of intellectual property as a form of loan collateral and the participation in the "sharing economy".

25. The Chief of CKMC noted that an external event on crowd funding options was scheduled for 25 June 2015 in Port of Spain.

26. In considering an amendment to Objective 8, he recommended that the addition of e-commerce at the national and regional levels should be facilitated by systems for international settlement. This was necessary as current systems did not provide SMEs with workable e-commerce options.

27. He acknowledged the importance of big data in Objective 9 as essential, but was uncertain whether it was applicable in the region due to the lack of complete data sets. He offered a solution, where the Caribbean region could utilize the United Nations Global Pulse.

28. The representative of the Caribbean Knowledge and Learning Network (CKLN) noted that the CaribNET dedicated network encouraged research and the transfer of big data and the development of big data was considered as an opportunity for expansion of the research and education network. In this event, data transfer needed to be considered in the integration of institutions in the thrust for big data as more research was required in the region. It was felt that in order to effectively develop this area there should be provision for training data scientists.

29. In considering Objective 10, he recognised that regional businesses could not compete on the global market, in which case, a more realistic target market would be the subregional and regional environments for the provision of ICT services.

30. A point raised by the representative from the Ministry of Science and Technology, Trinidad and Tobago was the inclusion of capacity-building initiatives as a cross cutting factor for all thematic areas. The Associate Information Management Officer proposed that a creation of a working group on capacity building could be proposed by representatives at the 5th Ministerial.

Item 5: Presentation on the eLAC 2018 Digital Agenda working paper: e-Government

31. e-Government was considered under Objectives 11 to 14. Under Objective 11, it was noted that several Caribbean countries established e-Government Interoperability Standards (e-GIS) but

recommended regional coordination in this regard. The Associate Information Management Officer was convinced that national coordination was necessary and should engage the private sector. He believed that the standardization of products would facilitate regional sharing, resulting in tremendous cost savings.

32. He mentioned the 2007 eLAC publication "White Book of e-government interoperability for Latin America and the Caribbean", version 3.0; September 2007 which offered guidance. He proposed an update to this manual would assist development and encourage synergies.

33. He empathised the importance of capacity-building and sharing articulated in Objective 12 which would be realised through the eLAC 2018 mechanism.

34. Under Objective 13 he was convinced that regional standards were required to ensure the security and sovereignty of data when stored in offshore, cloud-based systems. He suggested the inclusion of "*Reduce the technical, institutional and legal barriers*" to read "*Reduce the technical, institutional and legal barriers to the adoption of cloud computing services by governments, with the objective of guaranteeing greater availability".* He also appended *"reducing costs, and improving the quality of services*" as these have policy implications for the region.

35. He noted that Objective 14 needed further clarification. There was need to clearly distinguish between open government and data systems that support government, as these were different concepts.

36. Participants enquired whether there were any examples of implementing open government data initiatives. The ECLAC subregional headquarters representative noted that although there were no examples of the implementation, the United Kingdom's standards of interoperability were quite revolutionary and offered some ideas. While the Caribbean region's countries had different priorities, the structure remained relevant. A proposal was made to incorporate the concept of the United Kingdom's strategy into a toolbox for application in the region.

37. The representative of the Caribbean Knowledge and Learning Network (CKLN) mentioned the Middleware for collaborative Applications and Global virtual Communities (MAGIC) Project as it facilitated the opportunity for global research and strengthening of education networks. The Brazilian example for interoperability standards were also offered as an option for consideration.

Item 6: Presentation on the eLAC 2018 Digital Agenda working paper: social inclusion and sustainable development

38. Under this theme Objectives 15 to 20 were considered. He believed some Caribbean countries (Barbados, Belize, Jamaica, Saint Lucia and Saint Vincent and the Grenadines) had already developed national Health Information Systems. He noted the benefits of this service for rural communities and recommended that eLAC was an appropriate forum to include this as a best practice of implementation.

39. Objective 17 was not clearly articulated and he believed it should be two separate objectives. The first to address climate change adaptation and the other to consider e-waste.

40. The climate change adaptation objectives could read "*Promote policies to increase the use of ICT systems to support emergency and natural disaster prevention and response, climate change adaptation, and environmental observation, analysis and planning by incentivising digital applications development and expanding ICT skills training in the relevant national offices*".

41. The e-waste Objective was proposed to be "*Develop national plans for minimizing the environmental footprint of ICTs through the institution of green standards for data centres and consumer electronics and the management of waste from electronic and electrical equipment*".

42. Objective 18 mentioned the development of regulatory frameworks as a necessity in the region. He then engaged the webinar participants in differentiating types of telework as either computer based or a specific task performed. An example of such would be, the running a small hotel where regulations were essential to secure workers' rights.

43. He noted that under Objective 19 the gender disparity was not an issue in the region except for Haiti. He felt however, that women should be encouraged, as a matter of necessity to enter the ICT field. As such, he appended the following "*and facilitating expanded female employment in the ICT related fields*".

44. He felt that Objective 20 needed to address social, educational, cultural and economic integration. Therefore, he proposed the inclusion of "*together with appropriate training and skills development initiatives*", consequently addressing the concerns of those persons without ICT skills as this group felt their jobs were threatened by automation.

45. The representative from the Caribbean Broadcasting Union (CBU) noted the need to harmonize the legislation governing recycling, dumping of e-waste (tablets, computers, phones) to protect the fragile ecosystems, as there were no guidelines to deal with such issues. The Executive Manager, External Relations, Ministry of Science and Technology agreed with the inclusion of mitigation for Objective 17 She also offered the inclusion of equity in Objective 20 as the disadvantaged did not receive equitable access. She informed the webinar that Trinidad and Tobago was exploring a project which addressed equity.

46. One of the representatives of the subregional headquarters explained that these suggestions and amendments would feed into an updated version of this document. He noted that the Secretariat could not make any inclusions to the document, however only countries had the authority to make interventions.

47. Another point to note was the necessity to create an interest in the ICT field. One suggestion was the integration at the CXC level thereby equipping more persons with ICT skills.

Item 7: Presentation on the eLAC 2018 Digital Agenda working paper: Governance

48. On the issue of governance, he shared that a CARIFORUM – EU deadline expired on December 2015 and greater awareness was essential at this time. He noted an updated HIPCAR was required, and The Bahamas had a good framework model

49. In Objective 22 guidelines were laid out to prevent and fight against cybercrime. However, the region did not sign international treaties but should be swiftly addressed. He gave the example of the Cardinal baseball team being accused of hacking into its opponents' database stealing their game plays and other sensitive data.

50. Objective 23, gave credence to the Caribbean Internet Governance Forum (CIGF) and the Latin America and Caribbean Internet Governance Forum integration.

51. He highlighted that in Objective 24, there was need for coordination between CARICOM counties with Latin America. The main barrier to better relations was the language difference. He recommended the identification of appropriate staff members to undergo Spanish training.

52. The representative from the Ministry of Science and Technology shared that the CIGF should be actively engaged.

Item 8: The way forward

53. The Chief of CKMC, noted that the working paper started the conversation, however, time constraints prevented complete ventilation of the issue with ministers but that it was important for ministers to represent their countries at the Fifth Ministerial meeting. He expressed the hoped that the Caribbean would come together to present a proposal with justifications to engage the working groups, especially voicing the inclusion of capacity-building and education working group.

54. The Coordinator, Ministerial Conference on Information Society, Unit of Innovation and New Technologies, Division of Production, Productivity and Management mentioned that the first step would be to forward the paper to the committee of eLAC. The committee would take the document into advisement as a Caribbean perspective. ECLAC, subregional headquarters could send the working paper to the steering committee to take the recommendations into account during the discussion in Mexico.

55. The Chief of CKMC, ECLAC subregional headquarters, was optimistic that the recommendations could be considered at the COTED meeting. He recognised the time constraint but hoped that there could be Caribbean consensus. It was hoped that this issue could be considered under any other business. Although full participation was not possible it was hoped that the consensus could be presented at the Ministerial meeting as a Caribbean position.

Item 9: Closing remarks

56. At the close of the webinar, the Chief of ECLAC Caribbean Knowledge Management Centre thanked all participants for their valuable contributions. He urged them to send any further comments and suggestions to him or the ECLAC headquarters for consideration. He thanked his colleague for all the research and assistance.

Annex I

List of participants

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Annex II

eLAC Digital Agenda Proposal

16 December 2014
ORIGINAL: SPANISH

Preparatory meeting for the fifth Ministerial Conference on the Information Society in Latin America and the Caribbean

San José, 5-7 November 2014

eLAC 2018 DIGITAL AGENDA PROPOSAL

CONTENTS

A. BACKGROUND

1. A regional dialogue was launched in 2000 on the information and knowledge society in Latin America and the Caribbean, in which the countries affirmed their willingness to design and implement programmes for access to and use of information and communications technologies (ICTs), which led to the Florianópolis Declaration. Subsequently, in 2003, this process continued with regional preparation for the World Summit on the Information Society (WSIS) and the Bávaro Declaration.

2. In 2005, the Regional Preparatory Ministerial Conference of Latin America and the Caribbean for the second phase of the World Summit on the Information Society was held in Rio de Janeiro, Brazil. On that occasion, the first version of the Plan of Action for the Information Society in Latin America and the Caribbean (eLAC 2007) was approved as a regional vision and a political commitment to reduce the digital divide and promote access to and use of ICTs as development tools.

3. This process continued with the eLAC 2010 and eLAC 2015 plans, approved at San Salvador in 2008 and at Lima in 2010, respectively, on the occasion of the second and third ministerial conferences. In 2013, the fourth Ministerial Conference on the Information Society in Latin America and the Caribbean convened in Montevideo, where eLAC 2015 was reaffirmed and a work plan was agreed upon with specific actions for the 2013-2015 period.

4. In 2015, the fifth Ministerial Conference on the Information Society in Latin America and the Caribbean will be held in Mexico, in order to take stock of the agreements in place and resume the policy dialogue with a view to the post-2015 world, incorporating the emerging challenges of the digital revolution and their impact on public policy.

5. This regional agenda will, in turn, serve as an input for the global process of reviewing results and preparing a new agreement in the framework of the WSIS, scheduled by the United Nations General Assembly for late 2015.

B. PRESENTATION

6. Inasmuch as ICTs, especially the Internet, are coming to permeate all social and economic spheres, they are taking on a whole new level of importance in terms of innovation, growth and development. After more than a decade of ICT policy, Latin America and the Caribbean is making progress in terms of setting up legal frameworks, expanding coverage of telecommunications services (mobile telephony and Internet, mainly), implementing programmes in the social sectors (especially education and health) and developing e-government. However, the region's countries continue to proceed at different paces, with gaps in and between them, as well as with the more developed economies (ECLAC, 2013a and 2013b).

7. Renewing agreements in the framework of eLAC means strengthening the regional integration process in digital matters, addressing technology growth, social changes and the transition to a knowledge society. The task is to update the regional commitments, identifying new challenges and priorities, with special attention to trends emerging as a result of the ubiquity of the Internet, technological convergence, high-speed networks, the digital economy, e-government, and big data analytics, without ignoring ongoing needs in terms of ICT access and use.

8. The proposed mission of the eLAC 2018 Digital Agenda is to develop a digital ecosystem in Latin America and the Caribbean that builds on a regional integration and cooperation process to strengthen the policies underpinning a society based on knowledge, inclusion and equity, innovation and environmental sustainability.

9. Reflecting the priorities presented below, the plan is to consolidate a set of regionally-focused actions built on critical factors that condition digital development, such as institutional and regulatory strengthening, broadband deployment, capacity-building and skills development, content and application development and monitoring and evaluation of the proposed objectives. This agenda sets out 24 interdependent and complementary objectives that will produce mutually reinforcing results, mapped into five areas of action: (i) access and infrastructure; (ii) digital economy; (iii) e-government; (iv) social inclusion and sustainable development; and (v) governance. The annex contains a set of indicators that can be used as reference for tracking and monitoring the quantitative aspects of the agenda.

C. AREAS OF ACTION

1. Access and infrastructure

10. Given its effects on all aspects of the economy and society, broadband infrastructure should be regarded not only as a connectivity tool but also as an indispensable means for achieving social inclusion and economic competitiveness (Jordán, Galperin and Peres, 2014). The region has made important strides in terms of broadband access, quality and affordability. For example, between 2008 and 2013, fixed broadband penetration doubled (from 4.7% to 8.9% of the population) and mobile broadband penetration increased thirty times over (from 0.7% to 24% of the population) (ITU, 2014a). Between 2010 and 2014, download speeds increased by more than 355% (to 8.2 Mbps for downloads and 2.9 Mbps for uploads), while fixed broadband service rates fell by 70% (from the equivalent of 18% to 4.7% of the region's monthly per capita GDP) (ORBA, 2014). However, gaps both within the region and with developed countries pose a challenge requiring proactive public policies to address the factors that shape broadband deployment at the national and regional levels alike.

11. The recent proliferation of broadband services is the result of changes taking the form of new access technology, with next-generation networks (supply) that have increased transmission speeds many times over and propelled demand for services among users whose ranks have seen an exponential increase, the development of increasingly advanced applications and a reduction in the cost of access devices (Jordán, Galperin and Peres, 2014). Technological convergence and mobility are important aspects of these changes, with the potential to reduce the digital divide and make the Internet widely accessible in time and space, as well as expand automated data exchange processes and the supply of bundled services.

12. The dramatic increase in mobile data traffic is driving up demand for broadband services. Considering that the supply of spectrum resources is limited, policies are needed to allocate spectrum more efficiently. Coordination and innovation in spectrum use can bring about positive effects to better accommodate data traffic and generate economies of scale at the regional level. Spectrum is a key aspect of any universal broadband policy and merits attention at both the national and international levels (ITU/UNESCO, 2013).

13. In recent years, numerous connectivity initiatives have been carried out at the national level, primarily to improve institutional access, e.g. in government offices, schools, health facilities, libraries and community centres. These efforts should continue to be pursued and promoted to ensure widespread access to broadband services, but regional infrastructure projects are also needed to address aspects such as the cost of international connections to the Internet, the imperfect state of regional connectivity and the remote storage of content (Rojas, 2012).

14. An analysis of international connectivity in the region confirms that physical networks between countries are scarce and data is often routed through exchange points in the Northern hemisphere. In some countries, even connections between local access providers are routed internationally, which suggests an inefficient use of resources. Accordingly, consideration must be given to the advantages provided by Internet exchange points (IXPs), such as the reduced costs, better service quality, traffic aggregation and lower prices associated with international Internet Protocol (IP) traffic. In addition, IXPs create incentives that attract content storage business by reducing costs to local and international providers and improving the quality of service delivered to the end user (Jordán, Galperin and Peres, 2014).

15. The region is in the process of adopting digital terrestrial television (DTT), which promises benefits in terms of the quality and supply of services, efficiency in spectrum use, mobility and interactivity, among other aspects. However, it also entails a number of challenges, especially in regulatory and technical areas. The region's countries must coordinate and harmonize implementation of the technical standards of DTT and develop the capacity needed to transfer, adapt and take advantage of the use of DTT-based technologies, which will require regional cooperation and policy and technical dialogue.

In this area of action, the objectives of the eLAC 2018 Digital Agenda are as follows:

Objective 1: Scale up and provide universal access to digital services, taking advantage of the opportunities created by technological convergence and mobile technologies.

Objective 2: Promote regional coordination in the allocation and use of the radio spectrum in order to facilitate the development of telecommunications services and economies of scale.

Objective 3: Strengthen the regional and subregional telecommunications infrastructure by deploying fibre optics, wireless networks and deep sea cables, encourage the establishment of new Internet exchange points (IXPs) and promote the installation of content distribution networks (CDNs).

Objective 4: Promote investment in next-generation broadband networks, achieving substantial improvements in service speed and quality, with a special emphasis on vulnerable and isolated rural areas.

Objective 5: Review and support processes to adopt digital terrestrial television (DTT) in the region.

2. Digital economy

16. Consolidating the digital economy is a challenge for the countries of Latin America and the Caribbean. ICTs have a positive impact on long-term productivity and economic growth in the region, though in smaller degrees than in more developed countries. In 2008, the digital economy contributed at least 3.2% to GDP on average in four countries in the region (Argentina, Brazil, Chile and Mexico), with estimated contributions of 6.8% in Japan, 6.4% in the United States and 5% on average in the 27 countries of the European Union (ECLAC, 2013a). To rise to this challenge, action must be taken in areas that encourage economic agents, particularly firms, to embrace the digital economy. Consideration must also be given to technology trends that can facilitate this process (mobility, cloud computing, social networks and big data analytics) and other factors such as the development of digital skills and the creation of content and applications.

17. Firms in the region are making moderate strides in incorporating ICTs, particularly when it comes to adopting the most advanced technologies. Although the rate of Internet access among small and medium-sized enterprises (SMEs) has risen to nearly 90%, it has not had the effect of reducing the productivity gap among firms. Accordingly, policies are needed that address not only gaps in access by company size but also worker skills, management systems, sectoral characteristics and production processes. ICTs can contribute to competitiveness, but this effect is conditioned by the complementarities that should exist between investment in ICTs and the productive structure (ECLAC, 2013b).

18. E-commerce is part of the digital economy. Electronic transactions are doubling every two years in the region (*América Economía*, 2012). Among the factors driving this expansion are an increase in the banked population, online payment facilities, consumer protection regulations, simplified tax regimes and improved logistics and transportation systems. To tap the full potential of e-commerce, the characteristics of cross-border transactions must be examined and corresponding policy actions must be coordinated at the regional level.

19. Big data analytics opens the door to a number of opportunities for the economy and other critical areas for development, such as health, employment, security and natural resource management, but it also poses challenges in terms of privacy, security, access and human capital (UN Global Pulse, 2012; WEF, 2012). Therefore, it is necessary to incentivize this type of analysis and discuss its potential and the capacities needed to take advantage of it.

20. The importance of the ICT industry lies in its contribution to structural change in developing countries, through the transfer and dissemination of new technologies, the creation of skilled work and the exportation of value-added services. Experience shows that the ICT industry has spillover effects on other sectors of the economy, induces productivity gains and helps diversify exports, making it an engine of economic growth for lower-income countries. At the same time, this industry is characterized by low capital requirements per worker, high value-added and opportunities for technological learning (ECLAC, 2013b).

In this area of action, the objectives of the eLAC 2018 Digital Agenda are as follows:

Objective 6: Develop and promote both the traditional ICT industry and emerging sectors, for the production of digital content, goods and services; and promote digital economy ecosystems and public-private coordination, with an emphasis on generating greater value-added, increasing skilled work and training human resources.

Objective 7: Increase the productivity, growth and innovation in the productive sectors through the use of ICTs and propel the digital transformation of microenterprises and small and medium-sized enterprises (SMEs), taking into account technological and productive trajectories, and capacity-building.

Objective 8: Strengthen e-commerce at the national and regional levels, adapting consumer protection regulations to the digital environment and coordinating aspects related to taxes, logistics and transportation, electronic payment mechanisms and personal data protection.

Objective 9: Incentivize the adoption and development of new technology trends in the public and private sectors, promoting in particular big data analytics, capacity-building and access options.

Objective 10: Promote public policies to strengthen the region's digital entrepreneurship ecosystem and its international integration, advancing ICT innovation in the public and private sectors and spurring technology transfer, university-business linkages and applied research in digital technologies.

3. e-Government

21. E-government has become a core component of any government initiative intending to bring about real progress in modernizing the public administration. After more than a decade of regional commitments in this area, meaningful improvements have been made but striking disparities persist: only 4 countries in Latin America and the Caribbean placed among the top 50 in the United Nations e-government index, and 14 did not make the top 100 (United Nations, 2014). Cooperating and sharing in this area is essential, and to this end the Network of e-Government Leaders of Latin America and the Caribbean (Red GEALC) has been established.

22. Today's demands, in terms of resource management, confidence, security, conflict resolution and political representation, exceed the capacity and scope of traditional institutions. ICTs can play a crucial role in this scenario, improving the channels of participation, increasing transparency and strengthening cooperation between the different levels of government. Good government means not only meeting the needs of the people but also anticipating them, for which a set of tools, systems and methods should be developed that enable the secure and unrestricted flow of information between various government agencies and the provision of public services on user-friendly platforms.

23. One of the recent technology trends in e-government is cloud computing, which offers solutions to help to reduce the cost of access to information technology (IT) services, to incorporate new models for their acquisition and to develop new applications. Several governments have adopted cloud computing strategies or have developed their own clouds. To further develop these services, it is important to share experiences with regulatory frameworks and service-level agreements, as well as establish coordination at the international level to set technical and security standards.

24. Although e-government has been understood as a platform for relations between the government and the people, greater emphasis has been placed recently on the joint creation of public value and innovation. The open government policy has driven this trend in accordance with the principles of collaboration, participation and transparency, on two basic pillars: the disclosure of public data and the use of citizen participation platforms. The challenges in designing this type of policy have to do

with cultural barriers, access to information, data processing costs, protection of personal data, technical capacities and promotion of the use of data by citizens and firms.

In this area of action, the objectives of the eLAC 2018 Digital Agenda are as follows:

Objective 11: Make interoperable online procedures and services widely available through multiple channels and promote, at all levels of government, innovation and the proactive delivery of public services.

Objective 12: Create opportunities for government institutions in the region to share experiences and collaborate, in order to build capacity and share developments in applications and software.

Objective 13: Incentivize the adoption of cloud computing services by governments, with the objective of guaranteeing greater availability and quality of services.

Objective 14: Promote open government data initiatives and the use of digital platforms to facilitate collaboration, citizen participation and public transparency.

4. Social inclusion and sustainable development

25. Incentivizing the incorporation of ICTs in the social sectors is essential for creating an inclusive society. The most vulnerable social groups should be given priority when it comes to using and taking advantage of these technologies. Otherwise, the gaps will widen. Although these aspects are built into the design and execution of ICT policies, they should be strengthened through regional cooperation and learning processes.

26. Regional ICT policy goals in education are geared towards aspects such as changing teaching practices, improving school management, developing student competencies and providing professional development for teachers, all key components in the effective use of ICTs in education. Nevertheless, priority must be given to the formal and sustained establishment of policies in these areas (ECLAC, 2013b).

27. The challenges in terms of access to and quality of health services in the region are evident. ICTs have the potential to overcome these challenges by enhancing efficiency in the provision of services, the availability of resources and the quality of medical care. The main ICT applications in health include electronic medical records, remote medical appointments, telemedicine and telehealth. The policy objectives should address problems related to the institutional framework, infrastructure, interoperability and information management and skills development for health professionals.

28. The promotion of ICTs for environmental protection and the sustainable use of natural resources is another aspect that merits attention. Some applications in this area include environmental observation, analysis and planning, as well as environmental management and protection and mitigation of the effects of technology use (ITU, 2008; ECLAC, 2014). The policy priorities should focus on reducing emissions of noxious gases, handling waste from electronic and electrical equipment and improving capacity (ECLAC, 2013c).

29. Telework or distance work can yield a number of benefits for firms and workers, especially in terms of lower costs, labour flexibility and greater productivity. At the same time, it can offer employment

solutions to people living in remote areas or with disabilities, while also reducing the environmental impact of vehicular traffic. Cooperation in this area is important primarily in terms of promoting the development of regulatory frameworks, sharing experiences and monitoring their evolution and impact (ITU, 2013).

30. Gender equality and the empowerment of women through ICTs is a priority for the region, as affirmed at the twelfth session of the Regional Conference on Women in Latin America and the Caribbean, held in the Dominican Republic in 2013. With this in mind, a call should be made for digital agendas to mainstream the gender perspective into policy development, considering actions to reduce barriers to access, raise awareness about the potential of ICTs and promote professional training and development.

31. Nearly 12% of the region's population lives with some type of disability (ECLAC, 2012b). ICTs are essential tools that allow these people to integrate into society. Policies in this regard should provide for research and development of solutions to meet the needs of people with disabilities, the incorporation of accessibility requirements in public procurements and legislative updates to include ICTs in the definition of accessibility (ITU, 2014).

In this area of action, the objectives of the eLAC 2018 Digital Agenda are as follows:

Objective 15: Strengthen the institutional framework for ICT policies in education and promote the development of programmes that include teacher training, new pedagogical models, the generation, adaptation and exchange of open educational resources, the management of educational institutions and educational evaluation.

Objective 16: Strengthen ICT policies in health and promote telehealth and telemedicine programmes and the exchange of good practices and interoperability in electronic medical records.

Objective 17: Promote policies for emergency and natural disaster prevention and response, incentivizing the development of digital applications for environmental observation, analysis and planning, and develop national plans for the management of waste from electronic and electrical equipment.

Objective 18: Promote the development of regulatory frameworks for telework and incentivize the exchange of experiences and actions for monitoring and evaluation.

Objective 19: Promote an integrated gender equality perspective in public policies on digital development, ensuring full ICT access and use for women and advancing their participation and leadership in public and private spaces where decisions are made on digital matters.

Objective 20: Ensure ICT access for vulnerable groups, in order to improve their social, educational, cultural and economic integration.

5. Governance

32. Governance of the Internet is an essential item of business on the information society agenda. The second phase of the Ministerial Conference on the Information Society pointed up the need for international management of the Internet to be multilateral, transparent and democratic, with the full

involvement of governments, the private sector, civil society and international organizations, and to guarantee an equitable distribution of critical resources, facilitating access to information and ensuring a stable and secure functioning of the Internet (United Nations, 2005).

33. The principles of governance of the Internet seek to safeguard the universal rights of individuals with respect to their online activities, with an emphasis on freedom of expression and association, development, privacy, accessibility and access to information. Privacy means not being subject to surveillance as a result of arbitrary or illegal decisions, as well as preventing the collection, handling and use of personal data. The right to protection under the law from these intrusions should be guaranteed, with a review of the procedures, practices and rules that protect the right to privacy and guarantee the full and effective enforcement of all obligations contracted by the States under international law (NETmundial, 2014).

34. Building trust in digital media is closely related to fighting security breaches of information networks and systems. In 2013, the personal identifying information of more than 552 million people was exposed due to data breaches, putting credit card and financial and medical information at risk. This type of crime involves attacks on individuals or organizations, social network scams and damage caused by banking trojans and bots (OAS/Symantec, 2014). National cybersecurity efforts should be strengthened by the competent authorities, such as computer security incident response teams (CSIRT) and police units.

35. Coordinating and promoting regional participation in the global governance of the Internet and incentivizing opportunities for multisectoral participation in these issues are priorities for Latin America and the Caribbean. The region has already launched this process and has established forums like the Preparatory Meeting for the Internet Governance Forum (LACIGF), a regional meeting for multisectoral policy dialogue at which governments, the private sector, the technical community, academia and civil society organizations can present and discuss their perspectives. These opportunities help to improve transparency and participation, as well as to ensure that the Internet serves as an innovative ecosystem, based on an open architecture that is collaborative and collectively managed.

36. The implementation of policies that are comprehensive, consistent and continuous over time has proven to be an important condition for forward progress with the dissemination, adoption and use of ICTs. The majority of the countries in the region have prepared national digital agendas and ICT policies at the sectoral level. The challenge is to strengthen the institutional framework for these digital agendas and ensure their coordination with economic, social and environmental initiatives, taking into account technology trends and social changes (ECLAC, 2013d).

37. In order to design and implement digital policies, reliable and comparable statistical data is needed to monitor and evaluate results. Although the region has made progress in collecting ICT indicators, large gaps in statistics remain, especially at the sectoral level. Over the years, efforts to promote the harmonized production of statistics on ICTs have focused on three areas: conceptual and methodological standardization, expanded coverage of measurements of ICT access and use in key sectors such as education, health and government, and updates to indicators to effectively assess the dynamics of technology adoption and the impact on social and economic sectors.

In this area of action, the objectives of the eLAC 2018 Digital Agenda are as follows:

Objective 21: Promote the security of and confidence in Internet use, guaranteeing the right to privacy and the protection of personal data.

Objective 22: Promote efforts to prevent and fight cybercrime through the development of strategies to protect critical infrastructure and cybersecurity plans, and local and regional coordination between computer security incident response teams.

Objective 23: Incentivize the coordinated participation of Latin America and the Caribbean in the governance of the Internet, reinforcing regional mechanisms and seeking synergies between them, and promote the development of opportunities for dialogue or national mechanisms in which all interested parties participate, and coordinate these at the regional and global levels.

Objective 24: Advance the institutional frameworks needed to coordinate, monitor and promote policies on digital matters.

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ANNEX

Tracking and monitoring indicators

The objectives described above can be classified as quantifiable (results-oriented) or qualitative (action-oriented). In this framework, a suggested set of indicators are presented below that can serve as reference for tracking and monitoring the quantitative aspects of the agenda. These indicators are supported by reliable sources of data and methodological and conceptual references that help to ensure their comparability and consistency. Qualitative aspects of the agenda will be evaluated in cooperation with specialized agencies in each area.

The indicators were selected based on the work of the Partnership on Measuring ICT for Development, the Observatory for the Information Society in Latin America and the Caribbean (OSILAC) and the Regional Broadband Observatory (ORBA). Also consulted were publications by the International Telecommunication Union (ITU), the United Nations Conference on Trade and Development (UNCTAD), the Organization of American States (OAS) and the Ibero-American Network of Science and Technology Indicators (RICYT).

Access and infrastructure	
Code	**Indicator**
A3	Fixed Internet subscribers per 100 inhabitants
A4	Fixed broadband Internet subscribers per 100 inhabitants
A5	Mobile broadband Internet subscribers per 100 inhabitants
HH6	Proportion of households with the Internet
HH7	Proportion of individuals using the Internet over the previous 12 months
BA1	Average monthly rates for fixed broadband Internet access in United States dollars, as a percentage of monthly per capita GDP
BA2	Average monthly rates for mobile broadband Internet access in United States dollars, as a percentage of monthly per capita GDP
BA3	Actual Internet connection speed
IXP1	Key performance indicators for Internet exchange points (IXPs)

Digital economy	
Code	**Indicator**
B5	Proportion of businesses with a Web presence
B6	Proportion of businesses with an Intranet
B7	Proportion of businesses receiving orders over the Internet
B8	Proportion of businesses placing orders over the Internet
B9	Proportion of businesses using the Internet, by type of access (narrowband, fixed broadband and mobile broadband)
ICT2	Value-added of ICT sector

ICT3	ICT goods imports as a percentage of total imports
ICT4	ICT goods exports as a percentage of total exports
RYCIT	Science and technology spending as a percentage of GDP

e-Government	
Code	**Indicator**
EDGI	United Nations e-Government Development Index
ODB	Open data barometer
ODI	Open data index

Social inclusion and sustainable development	
Code	**Indicator**
ED4	Number of students per computer
ED5	Proportion of schools with Internet access, by type of access (narrowband, fixed broadband and mobile broadband)
ED6	Proportion of students with Internet access at school
ED7	Proportion of students enrolled at the post-secondary level in ICT-related fields
ED8	Proportion of ICT-trained teachers in primary and secondary schools
SLD1	Proportion of health facilities (inpatient and outpatient) with Internet access, by type of access (narrowband, fixed broadband and mobile broadband)
SLD2	Proportion of health facilities (inpatient and outpatient) with electronic medical records
SLD3	Proportion of health facilities (inpatient and outpatient) with telemedicine services

Governance	
Code	**Indicator**
SEG1	Proportion of countries with a national information technology emergency response team

Annex III

Working paper on the eLAC 2018 Digital Agenda in consideration of Caribbean priorities for technology-supported development

Robert Crane Williams

Contents

Executive Summary

eLAC 2018 will coordinate the implementation of programmes to support the use of information and communications technologies (ICTs) in achieving social and economic development goals for Latin America in the Caribbean during the 2015-2018 timeframe. The conceptual framework for this programme of work is described by the eLAC 2018 Digital Agenda, which is anticipated to be ratified by the fifth Ministerial Conference on the Information Society in Latin America and the Caribbean, to be held in August 2015 in Mexico City.

There is a need for broader input from Caribbean countries to the eLAC 2018 Digital Agenda. Accordingly, this working paper reviews the document's current draft, considering each of its objectives in the context of Caribbean development needs. Amendments are recommended to 12 of the objectives. Two additional objectives are also proposed, in the areas of regional coordination on universal service funds, and the establishment of a spatial data infrastructure to support the use of geographic information systems.

Representatives of Caribbean countries are invited to use the contents of this document as an input to the development of their own proposed amendments for inclusion in the final version of the eLAC 2018 Digital Agenda.

I. Introduction

The eLAC 2018 Digital Agenda proposal is the outcome document of the preparatory meeting for the fifth Ministerial Conference on the Information Society in Latin America and the Caribbean, which was held in San José, Costa Rica in November 2014. That document is to be considered for ratification by the fifth Ministerial Conference, to be held in Mexico City in August, 2015. The document provides a conceptual framework for the eLAC 2018 programme of work. It will also be used as an input to the global process for the development of a new framework for the World Summit on the Information Society – the WSIS+10 process – to be undertaken as part of a planned High-level meeting of the United Nations General Assembly in late 2015.

While the draft document from the San José meeting provides a solid foundation on which the eLAC 2018 Digital Agenda can be built, there is a need for greater input to the agenda from the perspective of countries of the English-speaking Caribbean. Accordingly, the ECLAC subregional headquarters for the Caribbean has prepared this working paper for the purpose of providing a set of recommendations that representatives of Caribbean countries to the fifth Ministerial Conference may wish to introduce for consideration as part of the final draft of the eLAC 2018 Digital Agenda.

The current Digital Agenda proposal lists 24 objectives across five categories: access and infrastructure, digital economy, e-Government, social inclusion and sustainable development, and governance. This working paper considers each of these objectives in turn, providing brief commentary that considers the issues behind the objective in light of their relevance to Caribbean priorities, and provides a recommendation on potential changes that may be considered. In some cases, additional objectives are suggested for inclusion in the document.

II. Access and infrastructure

Objective 1: *Scale up and provide universal access to digital services, taking advantage of the opportunities created by technological convergence and mobile technologies.*

Commentary: While improvements to network infrastructure are ongoing in the Caribbean, the cost of services is among the major barriers to universal access. The reduced cost of mobile technologies makes them an appealing avenue for broader expansion of access. However, there is a concern that those who access the Internet via "mobile only" will be short-changed, as mobile devices are better suited to the role of enabling consumption, rather than production of digital content. Moreover, many mobile device users will avoid purchasing data plans, or may opt for low-cost data plans that provide access to a small number of social media services, but not to the broader Internet. As a means of remediating this problem, there is a need to expand the number of community access points that provide wireless connectivity, such as libraries, internet cafés, and public Wi-Fi networks. Expanding these facilities should be considered a key part of the drive to provide affordable, universal access.

Recommendation: It is recommended that Objective 1 be amended to read *"Scale up and provide* ***affordable,*** *universal access to digital services, taking advantage of the opportunities created by technological convergence and mobile technologies."*

Objective 2*: Promote regional coordination in the allocation and use of the radio spectrum in order to facilitate the development of telecommunications services and economies of scale.*

Commentary: The Caribbean Telecommunications Union (CTU) has taken the lead on this issue with the Harmonized Caribbean Spectrum Planning and Management Project. However, the effort may benefit from greater coordination with non-CTU member countries in the region, which can be facilitated through eLAC. Multi-lateral coordination on spectrum is especially important in areas where radio interference is likely to bleed across national borders, as in the example of Haiti and the Dominican Republic, where cross-border interference has caused interruptions in radio, television, and mobile telephone service.

Recommendation: It is recommended that Objective 2 be accepted without amendment. Moreover, the CTU should be encouraged to represent Caribbean interests by participating in any eLAC working group to be established pursuant to this objective.

Objective 3: *Strengthen the regional and subregional telecommunications infrastructure by deploying fibre optics, wireless networks and deep sea cables, encourage the establishment of new Internet exchange points (IXPs) and promote the installation of content distribution networks (CDNs).*

Commentary: This objective reflects a common need to increase bandwidth throughout the region, and to build redundant systems that can protect the network from interruption. One omission in the objective is recognition of the role of satellite systems for delivering broadband. There are a number of commercial initiatives competing to launch a new generation of communications satellite networks that are anticipated to lower the cost of satellite-based broadband in coming years. These new satellite networks may prove to be attractive broadband solutions for small islands and particularly remote areas.

The objective also notes the importance of establishing IXPs, which has been a recent focus in the Caribbean region. Following the establishment IXPs in the region, the roll-out of CDNs represents the next logical step in the maturation of the region's infrastructure. This is important to the region because CDNs have the potential to significantly reduce the demand placed on the limited capacity of the region's undersea cable infrastructure, especially as bandwidth-intensive services such as streaming video become more popular.

Recommendation: It is recommended that Objective 3 be amended to read *"Strengthen the regional and subregional telecommunications infrastructure by deploying fibre optics, wireless networks,* ***satellite systems,***

and deep sea cables, encourage the establishment of new Internet exchange points (IXPs) and promote the installation of content distribution networks (CDNs).”

Objective 4: *Promote investment in next-generation broadband networks, achieving substantial improvements in service speed and quality, with a special emphasis on vulnerable and isolated rural areas.*

Commentary: The recent purchase of Columbus Communications by Cable & Wireless may have a detrimental effect on telecommunications competition – and hence on infrastructure investment and on the cost of service in Caribbean countries. Thus, there is a need to find other potential means of ensuring that investments in broadband infrastructure continue to be made. In the absence of competitive pressures to inspire private sector investment, a reconsideration of the role of the public sector in supporting telecommunications infrastructure may be warranted.

Recommendation: It is recommended that Objective 4 be amended to read *“Promote investment in next-generation broadband networks, achieving substantial improvements in service speed, quality, **and cost,** with a special emphasis on vulnerable and isolated rural areas.”*

Objective 5: *Review and support processes to adopt digital terrestrial television (DTT) in the region.*

Commentary: Caribbean countries now find themselves in a situation where they have not coordinated to adopt a single standard for DTT technology, but rather are each adopting one of three divergent international standards. This is likely to make the DTT switchover a somewhat more difficult and expensive process for both consumers and broadcasters than it may have otherwise been. It is possible that some countries will avoid a DTT switchover altogether, opting to shut down television broadcasting in favour of cable-based systems.

It should be noted that a global digital switchover from FM radio is also on the horizon. Caribbean countries would do well to coordinate on this process at an early date, so that a common standard can be adopted as to avoid a repeat of the DTT situation.

Recommendation: It is recommended that Objective 5 be amended to read *“Review and support processes to adopt digital terrestrial television (DTT) in the region **and facilitate preliminary consideration of coordinated standards adoption for an eventual digital radio switchover.”***

Suggested additional objective: *Promote the use, and good governance, of universal service funds (USFs) as a sustainable funding mechanism for public investment in ICT infrastructure, the maintenance of community access points, and outreach and training initiatives designed to expand participation in the digital economy.*

Commentary: USFs, funded through small surtaxes on telecommunications services, are widely used within the region to fund public investment in projects aimed at expanding ICT access. There is a need to share best practices in management of these funds, to ensure that the money is well-spent, allocation processes are fair, projects are effectively monitored, and that their value is recognized so that political support can be maintained.

III. Digital economy

Objective 6: *Develop and promote both the traditional ICT industry and emerging sectors, for the production of digital content, goods and services; and promote digital economy ecosystems and public-private coordination, with an emphasis on generating greater value-added, increasing skilled work and training human resources.*

Commentary: Regional growth in the Caribbean has been held back by the limited scale of the ICT industry and associated technology ecosystem. This objective importantly focuses on the role of Caribbean participants in the digital economy as producers of digital products, rather than merely as consumers.

Recommendation: It is recommended that Objective 6 be accepted without amendment.

Objective 7: *Increase the productivity, growth and innovation in the productive sectors through the use of ICTs and propel the digital transformation of microenterprises and small and medium-sized enterprises (SMEs), taking into account technological and productive trajectories, and capacity-building.*

Commentary: Increased use of ICTs has important potential to increase the productivity of Caribbean SMEs. One area where this is particularly true is in the tourism sector, where many locally-owned small hotels and tour operators are not effectively using the Internet to market their services to global audiences, finding themselves disadvantaged in comparison to larger, foreign-owned competitors.

Caribbean SMEs will also need guidance as they consider engaging new innovative financing and revenue models that are emerging as part of the information society. These include crowd funding, the use of intellectual property as a form of loan collateral, and participation in the so-called "sharing economy."

Recommendation: It is recommended that Objective 7 be amended to read *"Increase the productivity, growth and innovation in the productive sectors through the use of ICTs and propel the digital transformation of microenterprises and small and medium-sized enterprises (SMEs), taking into account technological and productive trajectories,* ***innovative financing and revenue models,*** *and capacity-building."*

Objective 8: *Strengthen e-commerce at the national and regional levels, adapting consumer protection regulations to the digital environment and coordinating aspects related to taxes, logistics and transportation, electronic payment mechanisms and personal data protection.*

Commentary: e-commerce development in the Caribbean is challenged by small markets and logistical difficulties. In some countries this includes a lack of a national addressing system of street names and house numbers to facilitate direct delivery. A further problem is that, due to in part to stringent anti-money laundering regulations, banking institutions in some countries have been unable to provide e-commerce SMEs with appropriate means of accepting electronic payment options. As a result, there is a reliance on overseas payment processors that can be a drain on national economies and lead to difficulty in repatriating funds. Expansion of mobile phone-based payment systems are one potential means of improving prospects in facilitating Business to Consumer (B2C) e-commerce. However more robust payment systems are also needed to support Business to Business (B2B) transactions, especially in terms of supporting the efficient and low cost settlement of international transactions.

Recommendation: It is recommended that Objective 8 be amended to read *"Strengthen e-commerce at the national and regional levels, adapting consumer protection regulations to the digital environment and coordinating aspects related to taxes, logistics and transportation, electronic payment mechanisms,* ***systems for international settlement*** *and personal data protection."*

Objective 9: *Incentivize the adoption and development of new technology trends in the public and private sectors, promoting in particular big data analytics, capacity-building and access options.*

Commentary: One might question why big data analytics, which is but one of many "new technology trends," has been singled out for specific emphasis in this objective. The reason it is highlighted in the Digital Agenda Proposal is, in part, as a response to the UN Global Pulse initiative, which is a global effort to study how big data analytics can be used to support development goals. Thus, the inclusion of a big data-specific objective will provide a specific avenue for participants in eLAC 2018 to take advantage of outputs from UN Global Pulse.

Recommendation: It is recommended that Objective 9 be accepted without amendment.

Objective 10: *Promote public policies to strengthen the region's digital entrepreneurship ecosystem and its international integration, advancing ICT innovation in the public and private sectors and spurring technology transfer, university-business linkages and applied research in digital technologies.*

Commentary: A viable digital entrepreneurship ecosystem can be an important engine for growth, though Caribbean efforts in this area are limited by small domestic markets and labour pools. Thus, there is a need for small island developing States (SIDS) to find areas of ICT in which they can specialize, while selling services to customers at a regional level.

Recommendation: It is recommended that Objective 10 be amended to read *"Promote public policies to strengthen the region's digital entrepreneurship ecosystem and its international integration,* ***encouraging the development of regional and subregional markets for ICT services,*** *advancing ICT innovation in the public and private sectors and spurring technology transfer, university-business linkages and applied research in digital technologies."*

IV. e-Government

Objective 11: *Make interoperable online procedures and services widely available through multiple channels and promote, at all levels of government, innovation and the proactive delivery of public services.*

Commentary: To the extent that systems could be made interoperable across borders, the improved level of standardization would help to increase the availability of compatible software packages, reduce costs, and promote the ability of local and regionally-based companies to offer technical support and associated services. Within individual governments, a number of countries in the region have established e-Government Interoperability Standards (e-GIS). However, there would be value in coordinating these standards at a regional level.

To that end, as part of eLAC 2007, a document was published called the *White Book of e-Government Interoperability for Latin America and the Caribbean*, which set out best practices for e-government interoperability. It may be time to update this document to reflect recent changes in systems architecture, such as the widespread use of cloud computing, the broader use of virtualization and containerization as a means of application hosting, and move toward a more mobile-centric device ecosystem. An update to the *White Book* would be useful in modernising existing e-GIS documents, and can help to promote their development in countries where they have not yet been established.

Recommendation: It is recommended that Objective 11 be accepted without amendment. It is further recommended that the working group on this issue consider compiling an update to the *White Book of e-Government Interoperability for Latin America and the Caribbean*.

Objective 12: Create *opportunities for government institutions in the region to share experiences and collaborate, in order to build capacity and share developments in applications and software.*

Commentary: Caribbean countries in particular could benefit from intergovernmental collaboration and sharing of technical expertise. However, it can be difficult to discover what resources are available, and there is a need to better publicise and maintain this type of information. eLAC itself is an institutional means of enabling this type of knowledge exchange.

Recommendation: It is recommended that Objective 12 be accepted without amendment.

Objective 13: *Incentivize the adoption of cloud computing services by governments, with the objective of guaranteeing greater availability and quality of services.*

Commentary: It is not clear that the adoption of cloud computing services is something that should be "incentivized." Rather, cloud computing comes with its own set of advantages and drawbacks, and governments should make the decision to use them based on these considerations. While the benefits to cloud computing are indeed substantial, they must be weighed against the technical, institutional, and legal difficulties inherent to the outsourcing of ICT services. For example, standards must be developed and adopted to ensure the security and sovereignty of data stored in offshore, cloud-based systems. However, as these types of difficulties are overcome, the adoption of cloud computing will incentivise itself – largely in the form of significant cost savings.

Recommendation: It is recommended that Objective 13 be amended to read *"**Reduce the technical, institutional, and legal barriers** to the adoption of cloud computing services by governments, with the objective of guaranteeing greater availability**, reducing costs**, and **improving** the quality of services."*

Objective 14: *Promote open government data initiatives and the use of digital platforms to facilitate collaboration, citizen participation and public transparency.*

Commentary: There is a distinction between open government data and data systems that support open government. Both are important. Open government data – or rather, open data from government – is seen as the sharing of extensive datasets held by government as a means of enabling the private sector or civil society to use this information for the creation of value. This can include census data, administrative data, geographic data, historical prices, and institutional records. There are a number of potential commercial applications for this information.

Data systems to support open government, on the other hand, focus on automating the sharing of information on the workings of government with the public, for the purpose of increasing transparency, informing voters, and encouraging citizen participation. Digital platforms that bring visibility to the procurement process are particularly important as a means of reducing corruption among public officials. Beyond playing a purely informative role, there is also a need for two-way communications systems that collect public feedback on government initiatives, pending legislation, and administrative matters.

Recommendation: It is recommended that Objective 14 be accepted without amendment.

V. Social inclusion and sustainable development

Objective 15: *Strengthen the institutional framework for ICT policies in education and promote the development of programmes that include teacher training, new pedagogical models, the generation, adaptation and exchange of open educational resources, the management of educational institutions and educational evaluation.*

Commentary: ICT has an important role to play in supporting education. Caribbean countries may especially benefit from the availability of high-quality open educational resources, which can be adapted to meet local needs. There is also a need to find an appropriate role for distance learning, especially in higher-level technical subjects for which there may be a local shortage of suitably-qualified teachers.

Recommendation: It is recommend that Objective 15 be amended to read *"Strengthen the institutional framework for ICT policies in education and promote the development of programmes that include teacher training, new pedagogical models, the generation, adaptation and exchange of open educational resources,* ***the integration of distance learning****, the management of educational institutions****,*** *and educational evaluation."*

Objective 16: *Strengthen ICT policies in health and promote telehealth and telemedicine programmes and the exchange of good practices and interoperability in electronic medical records.*

Commentary: Among Caribbean countries, Barbados, Belize, Jamaica, Saint Lucia, and Saint Vincent and the Grenadines, have each established – or are in the process of establishing – national electronic Health Information Systems. Other countries in the region would do well to learn from their experiences.

Recommendation: It is recommended that Objective 16 be accepted without amendment.

Objective 17: *Promote policies for emergency and natural disaster prevention and response, incentivizing the development of digital applications for environmental observation, analysis and planning, and develop national plans for the management of waste from electronic and electrical equipment.*

Commentary: An ECLAC study has recognized that one of the major limitations to the use of ICT in disaster prevention and response is a shortage of specialised ICT skills in the relevant offices. Broader training and skills exchange is needed. Moreover, there is much cross over between the area of disaster risk management and that of climate change adaptation – including perhaps broader funding opportunities for disaster management projects carried out as part of a climate change adaptation agenda.

Management of electronic wastes is an important and under-recognised issue – especially to fragile island ecosystems. Moreover, e-waste management represents a substantially different type of ecological concern than disaster prevention, or even climate change adaptation. Therefore, it merits inclusion in a separate Objective that considers means of reducing the negative environmental impact of expanded ICT usage.

Recommendation: It is recommended that Objective 17 be divided to reflect the separation of its concerns. One of the Objectives could read "*Promote policies to increase the use of ICT systems to support emergency and natural disaster prevention and response, climate change adaptation, and environmental observation, analysis and planning by incentivising digital applications development and expanding ICT skills training in the relevant national offices."*

The second Objective is proposed to be *"Develop national plans for minimizing the environmental footprint of ICTs through the institution of green standards for data centres and consumer electronics and the management of waste from electronic and electrical equipment."*

Objective 18: *Promote the development of regulatory frameworks for telework and incentivize the exchange of experiences and actions for monitoring and evaluation.*

Commentary: With the advent of widespread broadband, more powerful mobile devices, and new business models for Internet-based outsourcing, telework is now going through a period of rapid expansion. This represents a valuable opportunity to diversify the economic base of Caribbean countries. However, these new opportunities bring with them a need for the development of regulatory frameworks to ensure the fair treatment of workers. A specific concern is the need to prevent the manipulation of labour markets on the part of companies working as intermediaries between customers and contracted workers, which has emerged as a problem in some developed economies.

Recommendation: It is recommended that Objective 18 be accepted without amendment.

Objective 19: *Promote an integrated gender equality perspective in public policies on digital development, ensuring full ICT access and use for women and advancing their participation and leadership in public and private spaces where decisions are made on digital matters.*

Commentary: With some exceptions, there does not appear to be a significant gender disparity in access to ICTs in Caribbean countries. However, there is a disparity in the number of women taking up technical careers in the ICT field. This should be seen not only as a problem for women, but also as a problem for the ICT industry, which itself is weaker for the lack of contributions from a female perspective.

Recommendation: It is recommended that Objective 19 be amended to read *"Promote an integrated gender equality perspective in public policies on digital development, ensuring full ICT access and use for women, advancing their participation and leadership in public and private spaces where decisions are made on digital matters**, and facilitating expanded female employment in ICT-related fields.**"*

Objective 20: *Ensure ICT access for vulnerable groups, in order to improve their social, educational, cultural and economic integration.*

Commentary: Vulnerable groups – including the elderly, the disabled, ethnic minorities, those living in remote areas, and the economically disadvantaged – not only need better access to ICTs, they also need ICT skills training to go along with it. Care must be taken to mitigate the negative impacts of ICTs on communities, especially in terms of protecting new ICT users from predatory online behaviour.

Additionally, it must be recognized that those who lack ICT skills are themselves becoming a vulnerable group. For example, older workers who lack ICT skills are at a disadvantage when competing for jobs with younger workers who received ICT training in school. Others may lose their jobs to increasing automation, and may have difficulty finding new positions.

Recommendation: It is recommended that Objective 20 be amended to read *"Ensure ICT access for vulnerable groups, **together with appropriate training and skills development initiatives,** in order to improve their social, educational, cultural and economic integration."*

VI. Governance

Objective 21: *Promote the security of and confidence in Internet use, guaranteeing the right to privacy and the protection of personal data.*

Commentary: Caribbean countries are in need of support in this area, in part because signatories to the CARIFORUM-EU Economic Partnership Agreement are obligated, per the terms of Article 197 of that agreement, to pass legislation on personal data protection by December of 2015. Though the International Telecommunications Union's *Harmonization of ICT Projects and Legislation across the Caribbean* (HIPCAR) initiative has produced some model legislation concerning privacy and data protection, only a few countries have passed statutes on the issue.

There is also a need for public information campaigns and educational initiatives to ensure that Internet users – especially the young – are informed about privacy-related issues, so they can make good decisions regarding whether and how to share personal information online.

Recommendation: It is recommended that Objective 21 be accepted without amendment.

Objective 22: *Promote efforts to prevent and fight cybercrime through the development of strategies to protect critical infrastructure and cybersecurity plans, and local and regional coordination between computer security incident response teams.*

Commentary: Computer Security Incident Response Teams (CSIRTs) have been established in Curaçao and Guyana, and several other countries have plans for CSIRTs underway. As this network of national institutions becomes established, it can form the basis for collaboration on cyber security at a subregional level.

There is also a need, within the Caribbean, to pass legislation on cybersecurity. However, it has been suggested that model laws on cybersecurity, developed for the region through HIPCAR and other initiatives, have significant shortcomings as regards their harmonization with internationally recognized norms, as represented by the Budapest Convention on Cybercrime[1]. There may be a need to rethink regional strategy in this area.

Recommendation: It is recommended that Objective 22 be accepted without amendment.

Objective 23: *Incentivize the coordinated participation of Latin America and the Caribbean in the governance of the Internet, reinforcing regional mechanisms and seeking synergies between them, and promote the development of opportunities for dialogue or national mechanisms in which all interested parties participate, and coordinate these at the regional and global levels.*

Commentary: Coordinating Caribbean participation on Internet governance issues is the primary purpose of the Caribbean Internet Governance Forum (CIGF), an annual meeting coordinated by the Caribbean Telecommunications Union. This is distinct from the Preparatory Meeting for the Internet Governance Forum (LACIGF) that covers the both Latin America and the Caribbean.

Recommendation: It is recommended that Objective 23 be accepted without amendment. However, as LACIGF is mentioned in paragraph 35 of the explanatory text of the document, it is recommended that CIGF be recognized in that space as well.

Objective 24: *Advance the institutional frameworks needed to coordinate, monitor and promote policies on digital matters.*

Commentary: The Caribbean has a number of institutions that work together for the promotion of ICT. However, coordination between institutions in CARICOM countries and Latin American institutions is limited, in large part due to the language barrier. To that end, while the efforts of Latin American institutions to accommodate English speakers is appreciated, Caribbean institutions would do well to identify staff with

[1] http://www.coe.int/t/dghl/cooperation/economiccrime/Source/Cybercrime/TCY/2014/3021_model_law_study_v15.pdf

Spanish language abilities, and to use them as a resource to help drive closer engagement with institutions within the greater LAC region.

Recommendation: It is recommended that Objective 24 be accepted without amendment.

Suggested additional objective: *Promote the effective use of geographic information systems (GIS) through the establishment and coordination of national and regional spatial data infrastructures (SDIs) to ensure availability of high-quality geospatial data.*

Commentary: The effective use of GIS applications can provide valuable support to areas such as land use planning, disaster management, environmental monitoring, and agriculture. On both a national and regional level, there is a need to coordinate the collection and dissemination of high-quality geospatial data, including satellite imagery, official mappings of political boundaries, mappings of roads, pipes, cables, and other infrastructure, as well as maps of watersheds and soil conditions. To that end, geospatial experts in the Caribbean region have recommended the institution of a regional spatial data infrastructure coordinating body, which could provide institutional support for the governance of these resources[2].

[2] http://www.esri.com/esri-news/arcnews/winter1415articles/gis-executives-meet-to-address-the-caribbeans-geospatial-challenges

VII. Conclusion

This working paper has reviewed the 24 Objectives of the eLAC 2018 Digital Agenda Proposal, and proposed amendments to 12 of them, including the division of Objective 17 into two separate Objectives. Two additional objectives have been proposed – one in the area of Access and Infrastructure, for the promotion of universal service funds, and one in the area of Governance, to provide institutional support for the coordination of geospatial data initiatives.

Representatives to the fifth Ministerial Conference on the Information Society in Latin America and the Caribbean are invited to adapt any or all of the recommendations herein as a part of their own interventions in proposing amendments for inclusion in the final document of that meeting.