Expert survey on priorities for the information society in the Caribbean

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UNITED NATIONS

ECLAC

Economic Commission for Latin America and the Caribbean (ECLAC)

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Contents

Abstract

An on-line survey of experts was conducted to solicit their views on policy priorities in the area of information and communication technologies (ICT) in the Caribbean. The experts considered the goal to "promote teacher training in the use of ICTs in the classroom" to be the highest priority, followed by goals to "reduce the cost of broadband services" and "promote the use of ICT in emergency and disaster prevention, preparedness and response." Goals in the areas of cybercrime, e-commerce, e-government, universal service funds, consumer protection, and on-line privacy rounded out the top 10.

Some of the lowest ranked goals were those related to coordinating the management of infrastructure changes. These included the switchover for digital terrestrial television (DTT) and digital FM radio, cloud computing for government ICT, the introduction of satellite-based internet services, and the installation of content distribution networks (CDNs). Initiatives aimed at using ICT to promote specific industries, or specific means of promoting the digital economy, tended toward the centre of the rankings. Thus, a general pattern emerged which elevated the importance of focusing on how ICT is integrated into the broader society, with economic issues a lower priority, and concerns about coordination on infrastructure issues lower still.

I. Background to the survey

The Fifth Ministerial Conference on the Information Society in Latin America and the Caribbean, held in Mexico City in August 2015 articulated a set of objectives embodied in the eLAC 2018 Digital Agenda for Latin America and the Caribbean. The eLAC process has been in place since 2005, as a regional mechanism to promote discussion, harmonize policy, and enable collaboration on the use of information and communications technology (ICT) to achieve development goals. However, while countries of the Caribbean Community (CARICOM) played a significant role in the early years of this regional collaboration, their participation in recent years has waned. Despite entreaties for their participation in the eLAC 2018 process, there were no CARICOM Member States represented at the Fifth Ministerial Conference.

This lack of participation appears to reflect a broader regional disengagement when it comes to the coordination and cooperation on ICT policy among Caribbean countries. An example of this is the delay experienced in the establishment of a Caribbean Single ICT Space. That particular effort has faced difficulty in achieving a quorum at the CARICOM Council for Trade and Economic Development (COTED) on ICT that is necessary for the plans of the process to be approved. It is clear that Caribbean countries have been challenged to prioritise coordination on ICT-related issues at the Ministerial level.

This lack of coordination has been detrimental to the ability of countries to manage ICT policy in the region. This was exemplified in the wake of the 2014-2015 merger between two of the three largest telecommunications companies in the Caribbean, Cable and Wireless and Columbus Communications. As that merger proceeded, Caribbean governments did not have the capacity to present a united front in negotiating the terms of regulatory approval for the merger. As a result, there was significant loss of competition in Caribbean telecommunications markets. In the long run, this is likely to lead to higher prices and lower quality services for Caribbean telecommunications customers; an example of how the lack of multi-lateral coordination on ICT matters is negatively impacting the cost and quality of goods and services in Caribbean countries as well as their economic and social development.

It is in this context that the Economic Commission for Latin America and the Caribbean (ECLAC), which is secretariat to the eLAC 2018 process, is investigating how the mechanisms for enabling the cross-national coordination among Caribbean countries can be improved. To that end, it has conducted a survey of experts to determine which issues represent the Caribbean's most pressing ICT-related priorities, so that these areas can be considered as a focus of future efforts on policy harmonization.

II. Complete survey results

The survey, conducted on-line in the third quarter of 2015, collected expert opinions on how strategic objectives should be prioritised to support the development of the Information Society in the Caribbean. Thirty-seven experts in areas related to information and communication technology (ICT) policy responded to the questionnaire, providing opinions from at least nine different Caribbean countries and the diaspora[1]. The experts were asked to evaluate the relative importance of 90 potential strategic goals, which were drawn mainly from the objectives listed in the eLAC 2018 Digital Agenda for Latin America and the Caribbean.

The respondents to the survey were a self-selected group, and included persons from government, the ICT industry, and civil society. The survey was modelled after a 2007 exercise that informed the development of the *eLAC 2010 Digital Agenda*, which also drew responses from a self-selected group. The authors of that exercise explained that the "self-selection criterion was the disposition of the participant to complete the relatively extensive questionnaire,"[2] and concluded that this was, in itself, enough to ensure that respondents were contributing to the survey from a suitably informed perspective.

In completing this survey, respondents were asked to rate each of the 90 strategic goals on a Likert scale from "Not a Priority" (0) to "High Priority" (4). These responses were collected and averaged into a score, and these scores are ranked from highest to lowest in the table below. Given the limited sample size of the survey, care must be taken not to read too much significance into cases in which there is a relatively minor difference in ranking or score between comparable strategic goals. The results of this survey are better considered as being of similar utility to responses from a focus group, rather than to a scientific poll.

The complete ranking of priorities from the survey can be found in Table 1; these are further analysed by topic area in Chapter III. Additionally, the respondents to the survey were also given the opportunity to include additional comments, and a selection of these can also be found in Chapter III.

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[1]   See figure 1.

[2]   See ECLAC, 2007 - page 6.

Table 1
Complete list of surveyed priority rankings

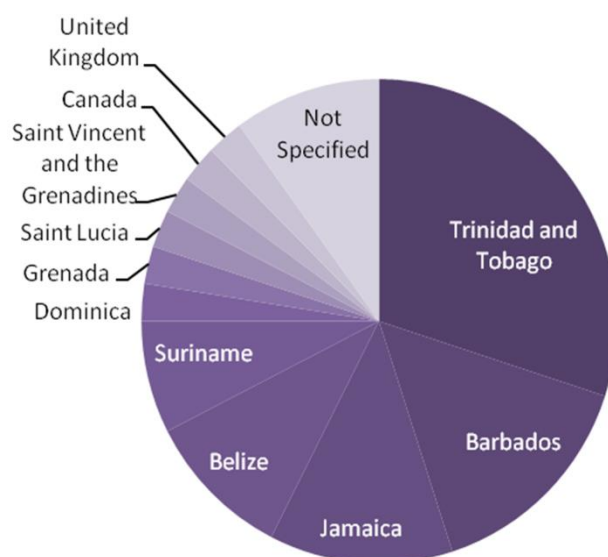| Rank	Strategic goal	Score *(out of 4)*
1	Promote teacher training in the use of ICTs in the classroom	3.74
2	Reduce the cost of broadband services	3.69
3	Promote the use of ICTs for emergency and disaster prevention, preparedness and response	3.67
4	Prevent and combat cybercrime through cybersecurity strategies, policies, and legislation	3.53
5	Strengthen e-commerce at the national and regional levels	3.51
6	Make e-government procedures and services available through multiple channels, at all levels of government	3.50
6	Promote the use and good governance of universal service funds (USFs)	3.50
6	Adapt consumer protection regulations to the digital environment	3.50
6	Guarantee the right to on-line privacy	3.50
10	Use ICTs to facilitate increased transparency in government	3.49
11	Include or strengthen the use of ICTs in education	3.47
11	Prevent and combat cybercrime through institutional capacity building	3.47
13	Promote the development and adoption of new pedagogical models for the use of ICT as a teaching tool	3.46
13	Expand the use of ICT in agriculture	3.46
13	Ensure the inclusion of vulnerable groups as full participants in technology-based initiatives	3.46
16	Guarantee the protection of personal data	3.41
17	Place special emphasis on quality of telecommunications services in rural, vulnerable, and isolated areas	3.41
17	Promote standards for the interoperability of e-government systems	3.41
19	Provide legal certainty to promote investment in the digital ecosystem	3.39
20	Achieve substantial improvements in broadband service capacity and quality	3.38
21	Develop ICT products for customers within the region	3.36
21	Promote access to public information through digital media	3.36
23	Increase coordination between the public and private sectors	3.35
23	Promote training and skills development initiatives for vulnerable groups	3.35
23	Encourage technology transfer between universities and business	3.35
26	Promote the security of and confidence in Internet use	3.34
26	Use digital platforms to facilitate two-way interaction between citizens and government	3.34
28	Increase the ability of SMEs to accept electronic payment options on-line	3.33
28	Ensure a high-level of competition between providers of telecommunications services	3.33
28	Develop national plans for e-waste management	3.33
31	Ensure ICT access for vulnerable groups	3.31
32	Ensure the regular production of data and statistics on ICTs in conformity with international standards	3.30
33	Develop emerging sectors in ICT, such as mobile apps development, big data analysis, and the production of digital content, goods and services	3.29

Rank	Strategic goal	Score (out of 4)
34	Prevent and combat cybercrime through public information programs on Internet safety and security	3.28
35	Promote the use of ICTs for environmental observation, analysis and planning	3.27
35	Strengthen telecommunications services through the deployment of fibre optics, Wireless networks and Deep –sea cables	3.27
37	Protect new users of ICT from predatory online behaviour	3.25
37	Promote local and regional coordination between computer security incident response teams	3.25
37	Develop ICT products for global export	3.25
40	Support efficient and low cost settlement of international financial transactions	3.22
41	Strengthen the institutional frameworks needed to coordinate, monitor, measure and promote digital policies	3.22
42	Develop capacity in the traditional ICT sector, in areas such as enterprise software development, network engineering, web design, and systems administration	3.20
42	Provide access to sources of public funding for startup companies	3.20
44	Use ICTs to increase productivity, growth and innovation in production sectors of the economy	3.19
44	Achieve universal access to digital services and content production	3.19
44	Promote policies aimed at strengthening the regions ecosystem for digital entrepreneurship	3.19
47	Coordinate among the countries of Latin America and the Caribbean on issues of Internet governance	3.19
48	Integrate mulit-stakeholder perspectives into ICT policy making processes	3.17
48	Expand the use, security, and interoperability of electronic medical records	3.17
48	Boost the digital transformation of microenterprises and small and medium-sized enterprises (SMEs)	3.17
51	Expand training of human resources in ICT fields	3.16
51	Coordinate aspects of e-commerce related to taxes, logistics and transportation, electronic payment mechanisms and personal data protection	3.16
53	Expand the use of ICT in supporting tourism	3.14
54	Promote open government data initiatives	3.11
55	Create opportunities for experience sharing and collaboration between institutions in the region	3.11
56	Provide support and retraining opportunities to those who lose their jobs to ICT-driven automation	3.08
56	Encourage the establishment of new Internet exchange points (IXPs)	3.08
58	Support applied research and development for digital technologies	3.08
59	Increase the capacity of local and regional vendors to compete for e-government related ICT contracts	3.06
60	Increase public investment in ICT infrastructure	3.05
61	Promote the integration of ICT-based distance learning into national education systems	3.03
61	Expand mobile phone-based payment systems and financial services	3.03
61	Promote freedom of expression through digital media, as an instrument of transparency and citizen participation	3.03
64	Institute green standards for data centres and consumer electronics	3.00
65	Develop regional mechanisms to promote the use of ICT in supporting economic and social growth	2.97
66	Expand the participation of women in ICT-related careers	2.97
66	Promote programmes for telehealth and telemedicine	2.97
68	Increase the use of open source software in government ICT systems	2.92
69	Ensure full access and use for women and girls	2.92
70	Develop user-centred community wireless networks	2.89

Table 1 (concluded)

Rank	Strategic goal	Score *(out of 4)*
70	Coordinate at a regional level on the allocation and efficient use of the radio spectrum	2.89
70	Promote investment in next-generation broadband networks	2.89
73	Broaden participation in the "sharing economy"	2.89
74	Expand regional cooperation in the development and procurement of government ICT systems	2.86
75	Advance women's participation and leadership in public and private spaces where decisions are made on digital matters	2.86
78	Promote the use of ICT in the management of educational institutions and for educational evaluation	2.83
79	Promote the generation, adaptation, and exchange of open educational resources	2.83
79	Use technology to implement innovative financing and revenue models, such as crowd funding	2.83
81	Promote the development of regulatory frameworks for telework	2.78
82	Support the development of the animation industry in the Caribbean	2.77
83	Promote an integrated gender equality perspective in public policies on digital development	2.75
84	Support the development of the call centre and business process outsourcing industries in the Caribbean	2.71
85	Promote the installation of content distribution networks (CDNs)	2.62
86	Facilitate the introduction of low-latency satellite broadband services	2.58
87	Expand the utilization of cloud-based technology in government ICT systems	2.53
88	Mainstream the gender perspective in policy implementation	2.50
89	Cooperate in the regional adoption of digital terrestrial television (DTT)	2.47
90	Cooperate in the regional transition from analog to digital FM radio	2.46

Source: Author's compilation.

Figure 1
Location of survey respondents

Source: Author's compilation.

III. Analysis

The respondents considered the goal to "promote teacher training in the use of ICTs in the classroom" to be of highest priority, followed by goals to "reduce the cost of broadband services" and "promote the use of ICT in emergency and disaster prevention, preparedness and response." Goals in the areas of cybercrime, e-commerce, e-government, universal service funds, consumer protection, and on-line privacy rounded out the top ten.

Some of the lowest ranked goals related to coordinating the management of infrastructure changes. These included the switchover for digital terrestrial television (DTT) and digital FM radio, cloud computing for government ICT, the introduction of satellite-based internet services, and the installation of content distribution networks (CDNs). Initiatives aimed at using ICT to promote specific industries, or specific means of promoting the digital economy, tended toward the middle of the rankings. Thus, a general pattern emerged that elevated the importance of focusing on how ICT is integrated into the broader society, with economic issues occupying a lower priority, and concerns about coordination on infrastructure issues lower still.

Though the priorities in this survey cover a broad set of policy issues, many can be clustered into relatively narrower topic areas. In some cases, priorities were specifically constructed to tease out the differences among policy approaches aimed at achieving similar outcomes. For example, the survey contained several different priorities that referenced different ways of promoting investment in the region's digital ecosystem. Analysis of this type of narrow topic area can shed some light on the collective judgement of survey respondents as to the best means of achieving policy objectives.

A. Topic area: Social inclusion

There was relatively strong support among survey respondents for the five strategic goals most directly related to social inclusion, as most of these were ranked among the first top half of all priorities. These priorities are ranked in Table 2. Taken together, this is an indication that there is broad support for ensuring that the benefits of ICT are available to all members of society.

Table 2
Survey ranking of priorities related to social inclusion

Rank	Strategic goal	Score *(out of 4)*
13	Ensure the inclusion of vulnerable groups as full participants in technology-based initiatives	3.46
17	Place special emphasis on quality of telecommunications services in rural, vulnerable, and isolated areas	3.41
31	Ensure ICT access for vulnerable groups	3.31
44	Achieve universal access to digital services and content production	3.19
56	Provide support and retraining opportunities to those who lose their jobs to ICT-driven automation	3.08

Source: Author's compilation.

Additional comment from a survey respondent:

- "I would like more specific policy in terms of people with disabilities, not just 'vulnerable groups'. People with disabilities are disadvantaged already and may subsequently be vulnerable in other ways."

B. Topic area: ICT in education

The survey included several priorities related to the use of ICT in education, which are listed in Table 3. Notably, the single highest ranked priority of the survey related to education.

Table 3
Survey ranking of priorities related to the use of ICT in education

Rank	Strategic goal	Score *(out of 4)*
1	Promote teacher training in the use of ICTs in the classroom	3.74
11	Include or strengthen the use of ICTs in education	3.47
13	Promote the development and adoption of new pedagogical models for the use of ICT as a teaching tool	3.46
61	Promote the integration of ICT-based distance learning into national education systems	3.03
78	Promote the use of ICT in the management of educational institutions and for educational evaluation	2.83
79	Promote the generation, adaptation, and exchange of open educational resources	2.83

Source: Author's compilation.

There is an interesting contrast between the prominence given to the development and adoption of new pedagogical models and the use of open educational resources, which could be of significant value in implementing new pedagogical models and associated curricula. Respondents may have a lack of familiarity with the topic of open educational resources, which may have contributed to its relatively low ranking.

Distance learning is commonly touted as a benefit of ICT in education, though in this ranking it fell to the bottom third of priorities. This may, in part, reflect a concern – voiced in other forums – that a move toward reliance on distance learning in schools would be detrimental to the preservation of the unique cultural heritage found in Caribbean countries.

Additional comment from a survey respondent:

- "As a technologically savvy kindergarten and primary teacher I KNOW that this cohort of youngsters need to use the tablets that they have for more than playing 'learning' games

and the multitude of video games available to them. They need to understand HOW to make them. However, unless teachers in general become more tech-savvy (learn to code) themselves, how can we expect them to transfer this knowledge to the students in an understandable and integrated way.... ICT should NOT be an isolated curriculum subject but infused in all school activities. There are infinite possibilities for integration in all subject areas."

C. Topic area: Gender perspectives

The survey participants were asked to rank several priorities related to gender in the field of ICT. Notably, as indicated in Table 4, all strategic goals related to gender ranked in the bottom third of the survey. Respondents do not appear to be convinced of the relevance of gender issues to ICT policy.

Table 4
Survey ranking of priorities related to gender perspectives

Rank	Strategic goal	Score *(out of 4)*
66	Expand the participation of women in ICT-related careers	2.97
69	Ensure full access and use for women and girls	2.92
75	Advance women's participation and leadership in public and private spaces where decisions are made on digital matters	2.86
83	Promote an integrated gender equality perspective in public policies on digital development	2.75
88	Mainstream the gender perspective in policy implementation	2.50

Source: Author's compilation.

As no data was collected on the gender of respondents as part of the survey, it is impossible to know if there was a disparity between the sexes on perception of gender in ICT. This failure to collect gender data could in itself be considered a failure to "mainstream the gender perspective" in public policy development. Gender mainstreaming seeks to understand the role that gender dynamics play in all aspects of policy development, and is dependent on the collection of gender-related data in supporting that goal.

The language on mainstreaming the gender perspective was included in this survey because it is taken directly from Objective 1 of the *eLAC 2018 Digital Agenda*, which is to *"Scale up and achieve universal access to digital services and content production, ensuring the inclusion of vulnerable groups and mainstreaming the gender perspective in policy implementation."* This prominent placement of this phrasing in the *Agenda* is at odds with the low priority accorded to it by participants in the Caribbean ICT community, as represented by the respondents to this survey.

The goal to "mainstream the gender perspective in policy implementation" was actually quite unpopular, ranking third from the bottom of the survey results. While it is a concept commonly understood by gender specialists, it is not clear that a large portion of the ICT-focused audience has an understanding of what the phrase means. Within the Caribbean, the lack of understanding of gender issues is an ongoing challenge, and advocates for gender mainstreaming may need to take these considerations into account when tailoring their communications strategy to address policy issues on ICT.

Additional comments from survey respondents:

- "I see no particular reason to introduce the 'gender equality' parameters into this survey. In my experience, it is likely that girls will grasp new concepts at an earlier chronological age than boys if teaching responds to the appropriate needs of this new age."

- "Gender inequality is a remnant problem of the Industrial period. The focus point of the inequality was equal pay for women and men doing the same job. In the technological era this is not an issue."

D. Topic area: ICT support for economic activity

Four of the 90 survey questions were related to the use of ICT in support of specific industries – agriculture, tourism, animation, and call centres/business process outsourcing (BPO). As seen in Table 5, the responses indicated that promoting the use of ICT to support the long-established industries of agriculture and tourism is considered a higher priority than supporting the development of "new economy" industries of animation and call centres/business process outsourcing.

Table 5
Survey ranking of priorities related to ICT support for economic activity

Rank	Strategic goal	Score (out of 4)
13	Expand the use of ICT in agriculture	3.46
53	Expand the use of ICT in supporting tourism	3.14
82	Support the development of the animation industry in the Caribbean	2.77
84	Support the development of the call centre and business process outsourcing industries in the Caribbean	2.71

Source: Author's compilation.

In particular, the high rank of agriculture indicates that it may be considered as poised to strongly benefit from opportunities brought about by expanded use of ICT, and that the success of the agricultural sector is of core importance to the economies of Caribbean countries.

Animation and the call centre/BPO industry both depend significantly on ICT, and each has seen a notable growth in the Caribbean as a source of employment. However, both ranked in the bottom decile on this survey. It may be that jobs in these industries are considered as potentially transient, or that they are seen to attract resources away from other areas of development for Caribbean economies.

Additional comment from a survey respondent:

- "Call centre jobs are one area where technology/software will replace the individual (in the near future). As processes become more standardized and well-structured, providing solutions to individual and business questions will not require human interaction."

E. Topic area: Development of the ICT industry

The survey sought to measure two axes of focus for potential development of ICT as an industry. The first is the question of whether to focus on regional or global markets. The second is whether to encourage the pursuit of opportunities in emerging technologies, or to focus limited resources on more traditional areas that can be considered "the basics" of the modern digital economy.

In prioritizing these two foci, as illustrated in Table 6, respondents appear to have collectively selected "all of the above," as the scores in four priority areas are all relatively close together, and all rank in the top half of preferences. Based on this, it can either be concluded that there is lack of strong consensus on a coherent strategy along either of these axes, or that some consensus does exist that favours a diversified approach. This is an area that may benefit from further research.

Table 6
Survey ranking of priorities related to development of the ICT industry

Rank	Strategic goal	Score *(out of 4)*
21	Develop ICT products for customers within the region	3.36
33	Develop emerging sectors in ICT, such as mobile apps development, big data analysis, and the production of digital content, goods and services	3.29
37	Develop ICT products for global export	3.25
42	Develop capacity in the traditional ICT sector, in areas such as enterprise software development, network engineering, web design, and systems administration	3.20

Source: Author's compilation.

F. Topic area: Promoting investment in the digital ecosystem

A strong "digital ecosystem," in which private sector entities, governments, educational institutions, and civil society are able to mutually reinforce each other in the collective implementation of new technologies and ways of doing business, is an important requisite for the establishment of a flourishing information society. Significant investment is required to meet this goal. In Table 7, several different means of promoting this investment have been ranked.

Table 7
Survey ranking of priorities related to promoting investment in the digital ecosystem

Rank	Strategic goal	Score *(out of 4)*
19	Provide legal certainty to promote investment in the digital ecosystem	3.39
42	Provide access to sources of public funding for startup companies	3.20
59	Increase the capacity of local and regional vendors to compete for e-government related ICT contracts	3.06
75	Establish networks of angel investors and venture capitalists in the region	2.86
79	Use technology to implement innovative financing and revenue models, such as crowd funding	2.83

Source: Author's compilation.

It is notable that the need to provide a hospitable legal environment was considered to be the highest priority for encouraging investment in the digital ecosystem, ranking above strategic goals for increasing investment from either the public or the private sector. In the Caribbean context, "legal certainty" should be understood as requiring not only the establishment of an effective legislative framework, but also the assurance that national judiciary systems have adequate capacity to manage litigation in a timely, fair, effective, and transparent manner.

The survey responses also indicate that strategic goals for increased public sector support for ICT companies – both as an investor and as a customer – were considered as a higher priority than the encouragement of private sector-based models, such as venture capital and crowd funding.

Additional comments from survey respondents:

- "There needs to be greater clarity and separation between enabling technologies and enabling venture capital. If there is an ecosystem and infrastructure that encourages

investment, education and development at the level of SMEs in the sector, there are development patterns that will naturally evolve."

- "Procurement rules for almost every Caribbean government are institutionally discriminatory. These discriminations are actively encouraged by institutional arrangements with funding agencies under the guise of 'fighting corruption'."

G. Selected additional comments from survey participants

In addition to the comments noted above, survey respondents contributed the following comments, covering a broad range of topic areas.

- "We need a strong regional campaign to remove the fear of e-business in general. A cultural shift is required."

- "There is a high degree of reliance upon large foreign vendors to provide solutions. More needs to be done to support research and innovation in ICT areas towards economic development."

- "Careful with the cloud... there needs to be understanding of security and privacy concerns and implementation of appropriate data classification schemes before venturing into cloud and open data."

- "Open source adoption should be of heightened concern and priority since this will level procurement, build capacity and promote innovation altogether."

- "Trying to guarantee personal data protection is not possible without proper enforcement of policy at a regional level and there has to be a guarantee that international partners will adhere to the certain level of protection as well."

- "The Caribbean is at particular risk of e-waste because of the fragile and vulnerable ecologies of these small developing states. The absence of policies and regulation has led to the development of an informal e-waste sector, and there is already significant e-dumping. This situation will only get worse as countries move to digital terrestrial television and are faced with a mass of unusable analogue television receivers."

- "There is an urgent need for a regional platform to accept and maintain ICT statistics that measure the progress of the Information Society. We must develop the institutional framework and accept the requirements for a start."

- "Our focus ought to be the fundamentals first. Ergo, we must ensure adequate legislative frameworks as the first layer of domestic/regional digital economies. Perhaps related to this is the need to train the judiciary to grapple with much of the digital disputes which invariably will arise once the digital economy becomes more embedded and normalised as an aspect of regional life."

- "There are an awful lot of initiatives to be pursued here. Triage should be the order of the day."

IV. Conclusion

Analysis of these survey results reveals that ICT experts in the Caribbean tend to prioritise initiatives aimed at ensuring that ICT is effectively used to support the development goals of society – and to ensure that society is equipped to engage with these ICT tools. In some cases the pursuit of these goals exposes a need for the expansion of human capacity – both in terms of improving individual technical capabilities, and broadening access to the internet and the resources it can provide. The first and second ranked priorities on the survey speak to these needs in the areas of education and access, in the form of increased teacher training and efforts to reduce broadband costs.

A second category of need is in the area of institutional development. As an example, consider the number 3 ranked goal, which speaks to the use of ICT in disaster risk management. This has been a specific area of study for ECLAC, which has found that there is a need to build stronger networks of institutional cooperation to facilitate the use of ICT in disaster planning, preparation, and response. Smaller national offices for disaster risk management have been especially challenged for the lack of resources, and would benefit from regional partnerships to help them make effective use of ICT[3]. The eLAC 2018 agenda also speaks to the need for institutional cooperation, setting an objective to "create opportunities for experience-sharing and collaboration between institutions in the region, with a view to capacity-building and sharing practices, experiences and developments in cutting-edge information and communications technologies.[4]"

The need for stronger institutions also includes the modernization of legal and legislative frameworks to handle issues such as cybercrime and e-commerce – which were ranked as priorities number 4 and 5. There have been efforts in the past, such as the International Telecommunications Union's Harmonization of ICT Projects and Legislation across the Caribbean (HIPCAR) initiative, which developed a number of model laws that, if adopted, could potentially form the basis for these frameworks, but national adoption of these models has been limited. The upcoming HIPCAR II will push for broader implementation of the HIPCAR outcomes, but the concern remains that Caribbean governments have so often made but limited use of regional initiatives as a means of achieving progress in the use of ICT to promote social and economic development.

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[3] See Williams and Philips, 2014, page 38.
[4] See ECLAC, 2015, Objective 11.

This is problematic because there are so issues to addressed, and Caribbean governments lack the resources to treat with them all on their own. To repeat a comment from one of the participants in this survey, "there are an awful lot of initiatives to be pursued here. Triage should be the order of the day." Indeed, though Caribbean countries would be well-served to address each of the 90 priorities listed in this survey, they are curtailed from doing so by limitations in finance, human capacity, and political will. And yet, while significant value can be achieved if there is a concerted effort to address a selection of the highest priorities on the list, there are still a large number of other issues ranked lower on the list that it would be a mistake to leave unaddressed. Thus, while governments should make a special effort to ensure top priorities are addressed, it is also important to establish a framework through which other entities can be empowered to enable progress along the full spectrum of ICT development needs.

For example, ranked at number 51 is the need to "Expand training of human resources in ICT fields." Survey respondents rated this as a mid-tier priority, reflecting a general pattern that favoured priorities that focused on bringing the benefits of ICT to society above the needs of the ICT industry itself. However, despite its ranking in the middle of the pack, the establishment of a more highly-skilled workforce in ICT would be of great utility in achieving many of the other priorities on the list; it is clear that the issue of expanded training in fields such as software design and network management cannot be ignored altogether.

If governments agree that training human resources in ICT fields is important, but choose to forgo extensive investment in that area in favour of a focus on higher-priority initiatives such as fighting cybercrime or improving e-government services, there is a need for other entities to step forward to fill these gaps. In the particular case of training, educational institutions certainly have a role to play, as so do civil society and the private sector. Thus, governments should consider what incentives could be established to help these groups fill this type of needed role – or to assist with any of the many priorities that have been identified in this survey.

Finally, it bears repeating that there is an important role here for regional initiatives, because those efforts that are difficult to justify at a national level may become easier if the administrative burden is spread among a number of participating States. Simply taking part in regional processes can make governments aware of what measures have been effective in other countries, and this can go a long way toward addressing ICT issues that, on their own, would not be prioritized for attention. It is unfortunate, then, that regional initiatives such as the eLAC 2018 process or the effort to establish a CARICOM Single ICT Space have not met with a level of high participation from Caribbean governments. There are so very many pressing needs to be addressed – and a need for effective means by which to address them.

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