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# Office of Utilities Regulation

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Responses to Notice of Proposed Rulemaking

## Infrastructure Sharing: OUR's Comments on Responses to Notice of Proposed Rulemaking

2018 February 09



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This document presents the Office of Utilities Regulation's (OUR's) comments on responses received on the Notice of Proposed Rulemaking for Infrastructure Sharing in the Telecommunications Sector.

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This document is approved by the Office of Utilities Regulation and the decisions therein become effective on 2018 February 12.

On behalf of the Office:



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Ansord E, Hewitt  
Director General

2018/02/09  
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Date

## **Abstract**

This document presents the Office of Utilities Regulation's (OUR's) comments on responses to the Notice of Proposed Rulemaking for Infrastructure Sharing for the Telecommunications Sector dated 2017 March 30 Document No.: 2017/TEL/002/NPR.001. The document specifically outlines the OUR's views on the issues/concerns raised by respondents.

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## Abbreviations

BTS	Base Transceiver Station
CACU	Consumer Advisory Committee on Utilities
CCA	Current Cost Accounting
FCA	Fair Competition Act
FDC	Fully Distributed Cost
FTC	Fair Trade Commission
HCA	Historical Cost Accounting
LRIC	Long Run Incremental Cost
MNOs	Mobile Network Operators
MVNOs	Mobile Virtual Network Operators
OTT	Over-The-Top
QoS	Quality of Service
RAN	Radio Access Network

## Chapter 1: Background

The Telecommunications Act (the “Act”) and the Office of Utilities Regulation Act (the “OUR Act”) under which the Office of Utilities Regulation (“OUR/Office”) regulates telecommunications, have among their respective objectives, the promotion of competition in the provision of specified services and the encouragement of competition in the provision of prescribed utility services. The Act also has among its objectives, the encouragement of economically efficient investment in, and use of, infrastructure to provide specified services in Jamaica. In carrying out its functions under both legislation, the OUR is required to have due regard to the preservation and protection of the environment and the health and safety of users and the general public.

In a liberalized telecommunications sector, it is essential to encourage new entry to promote competition. Infrastructure sharing increases the attractiveness of the market to new players by reducing overall deployment costs for operators. By avoiding duplication, infrastructure sharing allows operators to roll out networks faster and gears investments toward underserved areas, product innovation, and improved customer service. Sharing also allows for the fulfilment of the policy objectives of preservation and protection of the environment and ensuring the health and safety of users and the general public.

Section 29A of the Act empowers the OUR to make rules imposing on operators the obligation to share infrastructure. On 2017 March 30, the OUR published Infrastructure Sharing: Notice of Proposed Rule Making (“NPRM”) - Document No. 2017/TEL/002/NPR.001 – which laid out the proposed rules for infrastructure sharing. The proposed regulatory framework was influenced by:

- discussions with government agencies, consumer organizations and Licensees;
- analysis of complaints to the OUR;
- responses to specific information requests from the OUR to Licensees; and
- review of frameworks in other jurisdictions.

An objective of the proposed regulatory framework is the establishment of principles which will create a conducive environment for sharing and consequently enhance voluntary participation in this activity. Another objective, is to provide certainty to operators regarding the basis on which the OUR will mandate infrastructure sharing.

The OUR received responses to the NPRM from Licensees as well as groups representing consumer interests and telecommunications service providers and equipment manufacturers. In issuing its comments to the responses received on the NPRM, the OUR’s aim is to correct any factual errors highlighted by respondents; provide further arguments, if appropriate, in support of the position proposed by the OUR; and, as appropriate, indicate where it has accepted recommendations made by respondents (either in part or in full).



## **Chapter 2: Comments on Chapter 3 (Modalities of Infrastructure Sharing)**

### **2.1 Definition of passive and active Infrastructure**

#### **2.1.1 Responses of Stakeholders**

CACU and Digicel stated that the definitions outlined in the NPRM are acceptable.

5G Americas stated that the OUR should complement the existing definition of electronic/non-electronic elements with considerations for technical feasibility and other factors which may not be under the control of the telecom provider.

Flow disagreed with the definitions given by the OUR for passive infrastructure and stated that power, cooling, heating and ventilation should be excluded as these services are consumed in a "time bound basis" and are otherwise not available. Digicel in its comments on responses noted that services listed by Flow are ancillary and that they should fall under the sharing obligation if those services are necessary to facilitate mandated access to the related infrastructure.

Flow noted that cables are not considered passive elements as they work with active elements which make them functional. The company stated that while it does not agree with mandated sharing, any such sharing should be limited to real estate related elements (e.g. towers, ducts or buildings) such that they satisfy the criteria in the Act. Digicel disagreed with Flow's assertion that cables should not be designated as passive infrastructure because they are connected to active equipment. Digicel pointed out that the very essence of passive infrastructure is that its functionality is based on its association with something else. For example, if poles are not used to support cables then they do not have any function.

#### **2.1.2 OUR's Response**

The Rules already recognises that it may be technically infeasible to share some infrastructure. The services mentioned by Flow are critical to the provisioning of telecommunications services and if not shared, could in some cases prevent sharing of a particular infrastructure. There is also precedent for power sharing in Jamaica. In a 2012 survey of operators, at least one operator engaged in infrastructure sharing, indicated that it shared power. If for any reason, the power company implements any condition that prevents power sharing, the OUR will take account of that factor in its deliberations.

The Act does not provide a definition for passive infrastructure and there is nothing in section 29A of the Act, which implies that passive infrastructure should be limited real estate related infrastructure. In the NPRM, passive infrastructure is defined as the non-electronic and civil engineering components of communications networks. Installed unlit (dark) fibre optic cables are considered passive infrastructure until they are put into service when an operator connect its in-service transmission equipment to the fibre optic cable to "light" or operationalize it. Dark fibre is

also considered a passive infrastructure by other operators and regulators globally. In a reference to dark fibre on its website, Open Reach UK stated the following: “This will be a passive service and no equipment will be provided to light the fibre provide [sic], hence the reference to ‘dark fibre’ in the product title.<sup>1</sup> The National Post and Telecom Agency of Sweden, noted that “Passive infrastructure is, for example, ducting, such as pipework for cables in addition to non-active cables such as dark fibre”.<sup>2</sup>

## **2.2 Forms of passive sharing most suitable for Jamaica**

### **2.2.1 Responses of Stakeholders**

5G Americas suggested that itemizing forms of passive sharing could prevent operators from making new sharing arrangements in the future which are technically feasible and provide reciprocal benefits. Flow endorsed 5G America’s suggestion.

CACU stated that the sharing of physical elements has been demonstrated in the local environment and cited trench/duct/pole sharing, site sharing and mast/tower sharing as the types of passive sharing suitable for Jamaica.

Flow stated that if justified based on the conditions provided in the Act, the sharing of cellular sites on a commercial basis would be the most suitable form of passive sharing for Jamaica.

Digicel stated it does not believe mandatory sharing of mobile passive infrastructure is necessary. The company stated that the presence of commercial co-location agreements between operators and the availability of tower access from third party companies make regulatory intervention unnecessary. Digicel also claimed that sharing in the mobile sector is limited because of the following:

- a. The costs and other arrangements required for construction of towers do not create barriers to entry;
- b. Differences in the radio network and coverage design of operators; and
- c. The pool of infrastructure that can be shared is limited due to the physical limitations of existing towers.

Digicel pointed out that the situation in the fixed market was different from that of the mobile market as portions of the former are characterized by bottleneck control. The company cited the provision of wholesale trunk connectivity service as an example and indicated that the upstream bottlenecks for that market were dark-fibre connectivity and pole and duct access. Digicel went on to state that these bottlenecks are characterized by high barriers to entry with no supply-side or demand-side substitutes. In its comments on responses, Flow noted that Digicel had

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<sup>1</sup> <https://www.openreach.co.uk/orpg/home/products/darkfibreaccess/darkfibreaccess.do>

<sup>2</sup> <https://www.pts.se/upload/Rapporter/Tele/2008/dark-fiber-2008-9-june-08.pdf>

misrepresented the situation in the fixed market. The company indicated that Digicel already has access to fixed infrastructure owned by Flow on a commercial basis and that it always has “ongoing negotiations with Digicel regarding fixed infrastructure”.<sup>3</sup> Flow pointed out that the arguments provided by Digicel for exemption of mobile infrastructure from mandatory sharing are also applicable to fixed infrastructure. According to Flow: “

- i. there is no need to mandate passive fixed infrastructure sharing, as commercially agreed contracts are already in place;*
- ii. it is not necessary to mandate active sharing of fixed infrastructure, since it diminishes the flexibility for competitive differentiation and innovation; and*
- iii. the real constraint to the deployment of Digicel’s fixed broadband/cable TV networks is the lack of access to investment capital. And not an infrastructure sharing impediment.”*

## 2.2.2 OUR’s Response

The OUR has decided that the Rules will not identify specific types of infrastructure to be shared. Instead, the Rules apply to all tangibles used in connection with a public network and all intangibles facilitating the utilization of a public network except for spectrum. The OUR reserves the right to prohibit the sharing of a particular infrastructure or a particular type of infrastructure sharing where it is of the view that there is a risk of lessening of competition substantially as a consequence of such sharing.

As highlighted in the NPRM, to date, commercial negotiations have failed to deliver the desired outcomes and thus the OUR is of the view that regulatory intervention is required at this time. In fact, the responses of the operators bear out that point. The differing views on sharing makes it highly unlikely that the level of infrastructure sharing will increase if left to commercial negotiation.

CACU’s response seems to limit the types of infrastructure suitable for sharing to types which have already been shared in Jamaica. Given the knowledge of operators’ reluctance to share infrastructure to date, this approach could limit the competitive effect of the infrastructure sharing rules. In any event, such a restriction carries the risk of operating as a possible fetter on innovation in this area.

The OUR does not consider the fact that there is currently limited demand as sufficient grounds to not require the sharing of mobile infrastructure. The demand may seem to be limited because prospective infrastructure seekers are aware of operators’ reticence to share infrastructure. As it pertains to physical limitations of existing infrastructure, the proposed Rules take account of circumstances where capacity issues make sharing of a particular infrastructure technically infeasible.

Flow and Digicel both use the current situation as well as the competitive bottleneck argument to justify their respective claims that particular types of infrastructure be exempt from mandatory sharing. The OUR does not consider the fact that Flow and Digicel currently share fixed and

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<sup>3</sup> Flow provided examples of the arrangements under confidential cover.

mobile infrastructure as sufficient grounds for exempting particular types of infrastructure from mandatory sharing. Since liberalization, the OUR has been advised that both operators have refused to share infrastructure (fixed and mobile) with other operators. The OUR is also aware that the sharing of fixed infrastructure has been a bone of contention between both operators. Regardless of any current sharing between the two, the Rules need to take account of future developments and must consider situations where the infrastructure seeker is not Digicel or Flow and its bargaining power is less than that of the infrastructure provider. Such rules will also facilitate operators choosing the most effective modality for service provision within a given area, for instance, by utilizing a mix of mobile and fixed infrastructure to provide broadband access services. It also stands to reason that the existence of clear principles and rules for infrastructure sharing will serve to make the sector more contestable in respect of different market segments.

The Act does not necessarily require proof of a competitive bottleneck before sharing is mandated. According to section 29A(1)(a) of the Act the OUR can impose a sharing obligation where it “considers it to be justified having regard to **any** of the following considerations –

- i. matters relating to public health or to the environment or town planning or other development considerations;
- ii. economic inefficiencies; or
- iii. physical or technical impracticability;” (Emphasis added)

Given the presence of the word “any” in the chapeaux as well as the insertion of “or” between the last two sub-paragraphs of section 29A(1)(a), the considerations listed in paragraphs (i) through (iii) are alternative and not cumulative. This means that the OUR can mandate sharing on the basis of any of those considerations. Chapter 7 of the NPRM, “Framework of Infrastructure Sharing in Jamaica”, outlined the basis on which the OUR will impose obligations under those considerations.

## **2.3 Other Forms of Passive Sharing Not addressed in NPRM**

### **2.3.1 Responses of Stakeholders**

Flow indicated that a commercial hosting service could be provided to house the core network equipment for some operators.

CACU stated that operators could jointly rollout networks in rural areas that may not be financially feasible for a single operator and decide whether or not to share active elements such as the base station and antennas.

### 2.3.2 OUR's Response

The OUR notes the additional forms of sharing mentioned by the respondents and advises that the Rules do not per se proscribe a particular form of sharing.

## 2.4 Sharing of the Core Network

### 2.4.1 Responses of Stakeholders

5G Americas reiterated that the identification of forms of passive sharing should be left to the telecommunications providers.

Flow stated that there are minimal savings to be obtained in the sharing of the core network as the major investments are in the access layer not the core. The company noted that the core is the "brain" of the network and is used for differentiation against competitors. It is of the view that any requirement to share the core network would materially lessen an operator's competitive advantage to innovate and compete and operate as a disincentive to network investment.

CACU expressed the view that arrangements to sharing of the core network require a strong regulatory framework which does not yet exist and an efficient supporting judicial system. The organization pointed out that the core network has confidential information and opens the door for potential anti-competitive behaviour if shared. CACU also stated that our current marketing environment is not conducive to such an arrangement.

Digicel stated that it is not appropriate to mandate sharing of core networks and is of the view that "voluntary sharing of all forms should be permitted and encouraged unless it can be demonstrated that it has anti-competitive effects". The company stated that additional regulations are not required to address anti-competitive agreements given that such agreements are prohibited under the Fair Competition Act (FCA).

### 2.4.2 OUR's Response

The OUR is of the view that while earlier generations of technologies may make it difficult to share the core network, later generations may reduce the risks/disadvantages of core network sharing. Coleago notes that although to date there are no core network sharing deals, due to competition concerns, developments in software-defined networking and network functions virtualization may change this situation. The organization recommended that sharing arrangements recognise this potential future change.<sup>4</sup> In keeping with the future-proofing principle, the Rules will not proscribe the sharing of core network infrastructure. This approach will allow the Rules to maintain a balance between adaptability to technological progress on the one hand, and predictability and legal certainty on the other.

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<sup>4</sup> <https://www.slideshare.net/StefanZehle/coleago-network-sharing-overview-v011-100215-cb>

The OUR does not agree with CACU's statement that sharing of core network infrastructure should be proscribed because a strong regulatory framework does not yet exist. Section 13 of the Rules addresses the treatment of information received in relation to the sharing of infrastructure or information generated by the telecommunications system of a Licensee as a result of infrastructure sharing. Additionally, the Act gives the OUR the authority to establish competitive safeguards which could serve to mitigate the likelihood of information sharing and to punish offending licensees.

The existence of ex post rules which proscribe anti-competitive agreements does not preclude the establishment of ex ante rules which address such agreements. It is a well-accepted fact that an ex post regime is unable to fully address all foreseeable market failures (particularly those at the wholesale level) in the telecommunications sector. For this reason the ex ante and the ex post regimes need to co-exist.

## **2.5 Forms of active sharing most suitable for Jamaica**

### **2.5.1 Responses of Stakeholders**

CACU stated that RAN, backhaul transmission, MVNO and national network roaming are applicable for consideration under active infrastructure sharing and that these options will promote speedy rollout of new entrants. The organization expressed the view that the national RAN will provide ready access to customers within the coverage areas and is ideal for underserved and un-served areas of the country.

5G Americas noted that increasing mobile traffic and broadband adoption requires that operator networks be adaptable to new solutions in both the core and the RAN. As a result of this, the organization argued that active elements should not be heavily regulated by sharing mandates that can reduce investments by Jamaican operators.

Digicel and Flow were also of the view that sharing of active infrastructure should not be mandated. According to Digicel, sharing "removes incentives for competitive differentiation based on use of various platform/network technologies and functionality". It further stated that active portions of the network are "typically not bottlenecks" and therefore do not constitute "sufficiently large barriers to entry" that would require intervention.

Flow reiterated that operators should be allowed to enter into mutual commercial agreements as driven by market forces. The company highlighted its mobile tower sharing agreement with Digicel as an example of the market working. Flow stated that where concerns exist in relation to coverage, licensees should be held accountable for meeting their roll-out commitments as a condition of their licences. In its comments on responses, Verge disagreed with Flow's statement that reciprocal sharing between Flow and Digicel is a sign of the market working. Verge indicated that this type of sharing provides evidence that commercial negotiations are unlikely to yield fair results, except where the parties' bargaining power is equally matched, which would not be the case for new entrants.

## 2.5.2 OUR's Response

The OUR agrees that the modes of active sharing indicated by CACU can facilitate competition within the sector and could play in improving coverage in un-served and underserved areas.

Mandated active sharing should not impact the adaptability of networks as section 11 of the Rules takes account of the fact that an infrastructure provider may need to reconfigure its network as a result of technological or business reasons. In other jurisdictions, active sharing has not removed incentives for differentiation. In the UK for instance, operators engaged in RAN sharing have indicated that they were able to maintain both coverage and service differentiation and compete aggressively in the market.<sup>5</sup> As was previously stated, a finding of "bottlenecks" or "sufficiently large barriers to entry" is not compulsory before sharing can be mandated under all the considerations outlined in the Act.

Flow's mobile tower sharing agreement with Digicel is formulated on a basis of reciprocity. While the OUR does not have an issue with reciprocal sharing per se, such arrangements can act as a barrier to entry for new entrants who have not acquire a sufficient number of sites to barter. Also, mature operators may have already completed their network roll-out and therefore do not need to barter for additional sites. Moreover, as markets mature, a new operator may have difficulty meeting its coverage commitments if it is unable to get the requisite permits to construct network infrastructure. Consumers care strongly about the geographic extent of the mobile network to which they subscribe. Mobile operators therefore need to establish significant coverage of the population of a country if they are to provide a competitive service. In mature markets, having access to already installed infrastructure will hasten deployment of newer technologies and reduce the time to get services to market.

## 2.6 MVNOs and the Jamaican market

### 2.6.1 Responses of Stakeholders

5G Americas stated that MVNOs should develop in a free market environment as where technically feasible, such arrangements will lead to reciprocal benefits for the parties.

Digicel stated that the absence of MVNOs should not be viewed in a negative manner but as a reflection of the competitive nature of the Jamaican mobile market. The company stated that the limited margin that an MVNO could make as well as structural changes in the sector "limits the commercial attractiveness of Jamaica to prospective MVNO operators". Although sceptical that an economic space exists for a third operator, Digicel viewed the award of the third licence as proof that an investor saw sufficient scope for an infrastructure-based operator. Digicel stated that a policy objective of "introducing MVNOs for the sake of introducing MVNOs does not advance consumer welfare nor the interests of the wider economy".

Flow expressed the view that given the size of the Jamaican market, the niches that would be interested in an MVNO, would not be able to sustain the associated costs. The company stated

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<sup>5</sup> LEFÈVRE, C. (2008) Mobile Sharing. [http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR08/discussion\\_papers/Camila\\_session4.pdf](http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR08/discussion_papers/Camila_session4.pdf)

that mandating active sharing in order to subsidize MVNO entry, would be punitive and inefficient to operators who have made substantial investments at significant financing charges. Flow indicated that it did not think that the Act “contemplated or would support such heavy handed regulations”.

CACU noted that the proper regulations are not in place to sustain MVNOs even though a few had existed in Jamaica. CACU stated that proper regulatory framework will need to be established in order to retain MVNOs as it will be difficult for potential entrants without regulatory certainty. The organization expressed the view that MVNOs may be economically infeasible given the disposable income of consumers. CACU also believes that mandating active sharing is not a prerequisite for the emergence of MVNOs.

Digicel in its comments on responses noted that both CACU and Flow agreed with its assessment that the major constraint to MVNO in Jamaica is the level of competition in the mobile sector.

## 2.6.2 Response by the OUR

The Act allows for the entry of MVNOs into the Jamaican market and the OUR has been directed by the responsible Minister to invite applications for MVNO licenses. The OUR notes the views of the respondents regarding MVNOs and will take them into account as it continues to develop the regulatory framework necessary to facilitate the development of a competitive telecommunications landscape.

## 2.7 Instances of infrastructure sharing in Jamaica

### 2.7.1 Responses of Stakeholders

Digicel, Flow and CACU all mentioned that site sharing existed between Digicel and Flow with CACU adding that the sharing was largely on a reciprocal basis. Digicel also mentioned that operators shared infrastructure with a variety of third parties e.g. the sharing of Jamaica Public Service Company Limited’s poles. The company also explained that where operators have equivalent volumes of traffic to exchange they seek to interconnect for the purpose of sharing transmission cost.

### 2.7.2 OUR’s Response

The OUR notes the forms of infrastructure sharing taking place in Jamaica.



## Chapter 3: Comments on Chapter 4 (Benefits and Challenges of Infrastructure Sharing)

### 3.1 Impact of Infrastructure Sharing on Broadband Deployment

#### 3.1.1 Responses of Stakeholders

5G Americas noted that there are challenges other than infrastructure sharing which were impacting broadband deployment in Jamaica and recommended public-private interactions as a means of creating a positive environment for connectivity deployments. The organization expressed the view that sharing mandates may lead to perverse incentives for investment in connectivity infrastructure and spectrum underutilization.

Digicel indicated that the major constraints facing mobile broadband deployment do not relate to infrastructure sharing. According to Digicel, the major constraints relate to: availability of capital for investment in radio and core networks; availability and cost of spectrum; and availability of fibre backhaul. The company concluded that given those factors, the existing mobile infrastructure as well as third party provision of sites on reasonable terms, it is unlikely that mandating access to mobile passive infrastructure will have any material impact on the speed of deployment of broadband networks.

In relation to the fixed network, Digicel stated that connectivity is controlled by Cable & Wireless on what is "*effectively a monopoly basis*". Digicel posited that the leveraging of this control acts as a foreclosure mechanism and prevents competing fixed retail broadband services from being deployed island-wide. The company is of the view of that "mandating cost effective fixed infrastructure access" will have a "material and positive impact on the speed of deployment of fibre based fixed broadband". Verge in its comments on responses, agreed with Digicel's position that mandating access to fixed infrastructure would have a material and positive impact on the deployment of fibre-based broadband networks. Verge indicated however, that its position is that a similar treatment should be accorded to mobile networks elements.

Flow disagreed that mandating of infrastructure sharing is an effective way to encourage faster deployment of broadband networks. The company stated that commercial infrastructure sharing may offer benefits that could include faster network deployment but it will be necessary to distinguish between mandated (regulated) and commercial (voluntary) sharing when making these assessments. Flow further stated that there exists large body of research with a few exceptions which show that mandates are "counterproductive and in fact discourage the very ends they seek to promote". Digicel disagreed with Flow's position regarding the ability of mandated sharing to facilitate broadband deployment. The company noted that where there is an upstream bottleneck, mandated sharing can accelerate broadband deployment.

CACU stated that it did not agree that infrastructure sharing could encourage faster deployment of broadband networks because the broadband network also needs bandwidth which may be limited or costly to acquire. Digicel in its comments on responses cited its disagreement with

CACU and noted that sharing such as inter-urban transmission would serve to address the bottlenecks to deployment which were later identified by CACU in its response to Chapter 6, “Infrastructure Sharing in Jamaica”.

### 3.1.2 OUR’s Response

The OUR is well aware that infrastructure sharing is not the only factor required for the faster deployment of broadband networks and it agrees that the other factors listed by respondents are also constraints impacting broadband network deployment. However, infrastructure sharing is recognized globally as a key commercial and regulatory strategy which can facilitate faster network deployment. This is true for both fixed and mobile networks. In Brazil for instance, Telefónica (Vivo) entered into an active sharing agreement with América Móvil (Claro) and in Columbia, Movistar and Tigo formed a RAN sharing agreement in 2013.<sup>6</sup> Additionally, many policy-makers and regulators have realized that mobile technology is the most cost-effective means of achieving universality in broadband and have become more proactive about infrastructure sharing and have amended their regulatory frameworks accordingly.<sup>7</sup> Jurisdictions such as EU Member States and India which had previously frowned upon spectrum sharing are now actively taking steps to permit such sharing.

Given consumers’ appetite for services which require higher levels of bandwidth, operators will be incentivized to invest in order to maximise network efficiency as well as gain/maintain market share in a competitive industry. In relation to the studies referenced by Flow, there are studies<sup>8</sup> that indicate a non-negative impact of access regulation on investment and for this reason, the mechanism remains a key policy tool as countries seek to expand broadband access to their citizens. Kirsch and Von Hirschhausen (2008) notes that access regulation is a flexible instrument that can be attuned to a wide range of cases as it protects downstream competition but also includes mechanisms to facilitate investments.<sup>9</sup> The effects of mandatory sharing on investment incentives will depend on how infrastructure sharing charges are regulated.<sup>10</sup> The OUR believes that the costing methodology proposed will strike the appropriate balance between facilitating efficient entry and ensuring that there are sufficient incentives to invest. Additionally, while the studies referenced by Flow may indicate that access/sharing mandates resulted in less investments than anticipated in the reference countries, they also indicate that the interventions had some success in improving the competitive landscape in these countries. Given the peculiarities of the Jamaican situation, such as the size of the sector, limited competition in

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<sup>6</sup> Leza, D. (2014) Mobile Infrastructure Sharing: Trends in Latin America. [https://www.itu.int/en/ITU-D/Regulatory-Market/Documents/CostaRica/Presentations/Session8\\_Daniel%20Leza%20-%20Mobile%20Infrastructure%20Sharing%20-%2012%20March%202014.pdf](https://www.itu.int/en/ITU-D/Regulatory-Market/Documents/CostaRica/Presentations/Session8_Daniel%20Leza%20-%20Mobile%20Infrastructure%20Sharing%20-%2012%20March%202014.pdf)

<sup>7</sup> Since 2010 countries such as Bahamas, Dominica, Grenada, Ghana and South Africa have introduced infrastructure sharing regulations. Cayman which had infrastructure sharing regulations in 2003 amended its ICT Act in 2016 to allow for further regulation of infrastructure sharing.

<sup>8</sup> Vareda, J. (2007). Unbundling and incumbent investment in quality upgrades and cost reduction.

<http://fesrvsd.fe.unl.pt/WPFEUNL/WP2007/wp526.pdf>; Gayle, P., & Weisman, D. (2007). Efficiency trade-off in designing competition policy for the telecommunication industry. *Review of Network Economics*, 6(3), 322–341.

<sup>9</sup> Kirsch and Von Hirschhausen (2008) Regulation of NGN: Structural Separation, Access Regulation, or No Regulation at All, *Communications & Strategies*, no. 69

<sup>10</sup> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32013H0466>

segments of the sector, and the historical anti-sharing behaviour of the licensees, the OUR is of the view that mandatory sharing is necessary for the development of the sector.

## **3.2 Impact of infrastructure sharing on service-based competition**

### **3.2.1 Responses of Stakeholders**

5G Americas stated that infrastructure sharing is not the only condition for encouraging service based competition and that competition is a complex issue with many variables.

Flow stated that mandatory infrastructure sharing will not encourage competition. The company stated that it may encourage different retail options but at the expense of overall competition and investment. Flow again made reference to research which supported its position. In its comments on responses, Digicel noted that the retail options mentioned by Flow are indeed service based competition. The company also noted that competitive differentiation is more likely to happen the nearer the mandated access is to the infrastructure layer.

CACU stated that given the level of maturity in the Jamaican market “infrastructure sharing should make for a better business case for operators to extend their footprint in the market” and suggested that reciprocal sharing may be more suitable.

Digicel stated that the "mandating of fixed infrastructure sharing is a key enabler" to the advancement of competition in the downstream retail fixed broadband markets.

### **3.2.2 OUR's Response**

The OUR is cognizant that infrastructure sharing is not the only condition required for encouraging service-based competition in the sector. As the ITU noted however, infrastructure sharing can be the basis for the competitive supply of services.<sup>11</sup> The OUR disagrees with CACU's statement regarding the use of reciprocal sharing in the local market. As has been previously stated, these arrangements penalize new market entrants and entrench incumbent providers, which could limit the development of competition in the sector.

While the OUR agrees that the sharing of fixed infrastructure is likely to advance competition in downstream markets, it is also of the view that the sharing of mobile infrastructure can have a similar result. Additionally, with convergence, operators can choose to utilize a mix of different types of infrastructure (fixed and mobile) to deliver a particular retail service.

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<sup>11</sup> <http://www.itu.int/net/itunews/issues/2011/07/43.aspx>

### **3.3 Competition concerns arising from infrastructure sharing**

#### **3.3.1 Responses of Stakeholders**

Digicel stated that licensed operators now face significant competition from OTT providers in the provision of voice and messaging services. According to Digicel, where licensees enter into commercial sharing agreements they do so in an attempt “to reduce costs, increase efficiencies and improve quality in response to such competition”. Digicel expressed the view that “normal market operation” will act to guard against any anti-competitive effects of voluntary sharing and that where any concerns arise, the FTC has regulatory oversight to deal with such matters.

CACU mentioned that an infrastructure seeker could include, as part of their sharing request, the results of an independent market survey which demonstrates the need for improvement of existing services and the likely demand for the seeker’s service.

Flow restated its views that mandatory sharing does not have a positive impact on competition and investment.

#### **3.3.2 OUR’s Response**

Voluntary sharing agreements are not safe-guarded from being anti-competitive, especially where there are differences in the parties’ level of bargaining power. For instance, an infrastructure provider can apply dissimilar terms and conditions to two infrastructure seekers who are leasing the same infrastructure. Notwithstanding the existence of a competition law regime in Jamaica, the telecommunications sector is still at a stage where ex ante regulation is necessary to resolve access issues in the sector. Ex ante regulation, by outlining the conditions of access will provide infrastructure seekers with legal certainty. The Rules require that the terms and conditions on which infrastructure sharing is offered, comply with the principles fair competition. The Rules also state that sharing agreements shall not contain provisions that prohibit or frustrate the supply of a telecommunications service or facility that a Licensee is lawfully allowed to provide.

The OUR disagrees with CACU’s proposal that infrastructure seekers should be required to show that there is potential demand for their services when making a request for infrastructure. If for any reason, the seeker’s business fails, the infrastructure provider would not be any worse off than it was before the sharing agreement. The benefits, if any, to be derived from the requirement are unlikely to outweigh the increased costs to the infrastructure seeker.

Flow’s views on the impact of mandated sharing on competition and investment has already addressed in earlier sections.

## 3.4 Active sharing beyond the Radio Network

### 3.4.1 Responses of Stakeholders

Both CACU and Digicel stated that sharing beyond the Radio Network should be allowed if it is voluntary and does not have an anticompetitive effect. CACU expressed that steps should be taken to ensure sharing parties do not engage in activities which leads to consumer detriment. The organization also indicated that these types of sharing should not be allowed if local regulatory/judiciary bodies are not equipped to handle such matters. Digicel posited that it is unnecessary to have additional regulation to deal with the potential of such anti-competitive effects.

Flow stated that sharing beyond passive site elements is inappropriate or unnecessary and should not be permitted as the complexity of sharing the network beyond that increases significantly and the economic benefits decline. The company also stated that "the disincentives to invest in one's network and compete on a facilities-based basis increase with the ease and pervasiveness of mandatory sharing". Digicel is of the view that Flow's comments regarding the commercial viability of some forms of sharing supports its position that there is no need to explicitly prohibit any form of sharing.

### 3.4.2 OUR's Response

As stated earlier, the Rules will not per se proscribe a particular type of sharing and the OUR will only impose such prohibitions where there is the likelihood of an adverse impact on competition. Given the nature of the telecommunications sector, the OUR is of the view that competition law alone is insufficient to adequately address anti-competitive activity in that sector. Moreover, the recent misconstruction of section 17 of the FCA by the judiciary,<sup>12</sup> which had to be appealed to the level of the Privy Council, is a clear indication that sole reliance on ex-post rules creates significant risk.

The OUR disagrees with Flow's position that sharing beyond the passive site elements is unnecessary or inappropriate because of declining benefits. The global experience has been one where more operators and regulators are pushing for fixed and mobile active sharing arrangements in a bid to reduce equipment and roll-out costs. As mobile broadband traffic increases and the pressure to deploy new technologies along with it, mobile network operators are seeking deeper sharing arrangements. According to Coleago, active sharing dominates in Europe and the forecast is that it will dominate in all regions within the next five to ten years.<sup>13</sup>

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<sup>12</sup> Digicel Jamaica Ltd and Anor v Fair Trading Commission and Anor.

<http://www.courtofappeal.gov.jm/sites/default/files/judgments/Digicel%20Jamaica%20Ltd%20and%20Anor%20v%20Fair%20Trading%20Commission%20and%20Anor.pdf>

<sup>13</sup> <https://www.slideshare.net/StefanZehle/coleago-active-sharing-best-practice-for-regulators-v001-050417-cb>

The firm noted that active sharing such as Multi-Operator Core Network (RAN sharing plus pooling and sharing of spectrum) and roaming provide much higher capital and operating expense savings than passive sharing. In a Report on the economics of shared infrastructure access prepared for OFCOM, CSMG noted that whilst competition under duct access avoids the cost of multiple duct networks, the duplicative investment in the fibre and active elements of operators' networks still drives up the cost of competition.<sup>14</sup>

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<sup>14</sup> [https://www.ofcom.org.uk/\\_\\_data/assets/pdf\\_file/0020/25283/csmg.pdf](https://www.ofcom.org.uk/__data/assets/pdf_file/0020/25283/csmg.pdf)

## **Chapter 4: Comments on Chapters 5 & 6**

### **(Regulatory Options and Trends & Infrastructure Sharing in Jamaica)**

#### **4.1 Incentivizing voluntary Sharing**

##### **4.1.1 Responses of Stakeholders**

5G Americas stated that any measure introduced to incentivize voluntary sharing should not infringe on the free market's ability to decide on access to infrastructure. The organization stated that simplifying authorization processes and reducing waiting times could provide an incentive for long term investment and the negotiation of agreements for short term requirements.

Digicel proposed that infrastructure sharing revenues be offset against tax liabilities as well as excluded from the calculation of regulatory fees as a means of incentivising sharing. The company also proposed that sharing obligations should not be imposed on an operator that is already engaged in non-discriminatory infrastructure sharing with rates which approximate cost-oriented pricing. Flow disagreed with Digicel's proposal of utilizing tax and regulatory fees waivers to incentivize sharing.

Flow noted that incentives for voluntary sharing would have to make sense commercially. The company suggested that the Government could:

1. provide ICT licensees with access to public infrastructure;
2. mandate non-competing industries (e.g. power and water) to share passive infrastructure on fair market terms; and
3. expand on the Public Private Partnership which was used in the e-learning Project by the Universal Service Fund.

Flow also proposed that instead of confiscating a Licensee's infrastructure by decree, a framework that facilitates cooperation by Licensees and the Universal Access Fund Ltd/Government on infrastructure projects should be established. Digicel supported Flow's suggestion of making public sector infrastructure available and mandating access to non-telecommunications infrastructure.

CACU proposed the implementation of a refund mechanism for taxes paid on shared infrastructure. The organization also recommended that consideration be given to whether such matters can be incorporated in the Governments Fiscal Incentives Framework. CACU also proposed that a lower tax rate could be levied on particular telecommunications infrastructure. Flow did not support CACU's proposals.

##### **4.1.2 OUR's Response**

The OUR notes the views of the respondents regarding the provision of incentives for voluntary sharing and will give consideration to those incentives which fall within its remit as it continues to facilitate the development of a competitive telecommunications landscape. For those incentives

which are outside the remit of the OUR, the views and where appropriate, representation will be made to the relevant entities.

It is necessary to point out, however, that mandating access to existing infrastructure is in no way a confiscation of property. Indeed, the methodology by which sharing rates will be established will produce rates that are compensatory.

## **4.2 Types of Infrastructure for which sharing should be mandated**

### **4.2.1 Responses of Stakeholders**

Digicel stated that access should be mandated to local duct and pole access to enable competition in the fixed enterprise sector.

CACU suggested that towers could be shared for environmental, health and aesthetic reasons. Digicel disagreed with CACU's suggestion in relation to tower sharing and indicated that once planning authorities grant permission for multiple structures neither the OUR or CACU should intervene in policy areas where they do not have jurisdiction.

Flow stated their disagreement with the mandating of infrastructure unbundling or sharing as an effective means of encouraging faster deployment of broadband networks in Jamaica and referred to previous responses addressing this matter.

### **4.2.2 OUR's Response**

The OUR notes CACU's and Digicel's responses regarding the types of infrastructure which they believe should be subject to mandated sharing.

## **4.3 Requirement to provide inventory of infrastructure**

### **4.3.1 Responses of Stakeholders**

5G Americas stated that the provision and updating of information "involves operative costs" and could prove challenging to operators due to the changing needs of the network.

Digicel stated that placing this requirement on all operators represents an undue burden on stakeholders. The company is of the view that information from licensees on whom a sharing obligation has not been imposed will not be beneficial from a regulatory perspective. Digicel stated that while an infrastructure database may be beneficial for the purpose of planning and executing roadworks, realizing these benefits will require having information on power, water, sewerage etc. Digicel further stated that the scale and scope of inputs required to make such wider database useful, means that the imposition of a regulatory burden solely on the telecoms sector is not justified. In a later Chapter, Digicel noted that the requirement to provide an inventory of



infrastructure, provides scope for regulatory gaming as a licensee could claim that they cannot begin offering access until this obligation has been met.

Flow disagreed with the proposal and noted that based on its interpretation of the Act, “this intrusive, labour intensive and bureaucratic outcome” was not contemplated. The company stated that the Act contemplates that “in the circumstances where a few specified conditions are met, then and only then should the Office seek to consider infrastructure regulations to treat with those instances”. Flow stated that the OUR needs to consult on what constitutes proper circumstances under which the rules can be imposed. While disagreeing with Flow that further consultation is necessary, Digicel agreed that mandating the provision of information on passive infrastructure is inappropriate.

CACU stated that the requirement was unnecessary. CACU suggested that seekers should conduct their own search and where they encounter a facility that they want shared, initiate the request and proceed as the process stipulates. The organization stated that eventually the OUR would receive sufficient information for a database. In comments made in a later chapter in relation to the requirement, CACU stated that the OUR “should maintain the focus on regulating”.

#### 4.3.2 OUR’s Response

The OUR disagrees that the requirement to provide an inventory of passive infrastructure will impose an undue burden on licensees. It also believes that the method of populating the database proposed by CACU is inefficient. The information being requested, is information that should be readily accessible to the Licensees for the purposes of operating and maintaining their networks. The expansion of telecommunication networks occurs through distinct planning phases. This means that each operator should have knowledge of the location and capacity of the various infrastructure elements within their network. Due to the use of GIS systems and related technologies by the licensees in their operations, the OUR believes that, at a minimum, entities should have co-ordinates of their passive infrastructure. As it relates to licensees using this requirement for regulatory gaming, there is nothing in the Rules that makes the sharing of infrastructure dependent on the provision of this inventory to the OUR.

The infrastructure sharing provisions of the Act do not provide an exhaustive list of the elements that can be included in the infrastructure sharing regulatory framework. Additionally, subsection 4(4) of the Act provides for the OUR, in the exercise of its functions, to require a licensee to “submit information in relation to that licensee’s operations, within such reasonable time and for such reason, as the Office may specify”. The requirement for licensees to provide an inventory of their passive infrastructure is therefore within the OUR’s regulatory remit.

The intent is to create a database which would allow licensees to identify passive telecommunications infrastructure for sharing to optimize broadband deployment. In a study commissioned by the European Commission, Analysys Mason noted that such a database could be an enabler of passive infrastructure sharing.<sup>15</sup> The Federal Communications Commission

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<sup>15</sup> Analysys Mason (2012). Support for the preparation of an impact assessment re reducing the costs of high-speed broadband infrastructure deployment. [www.bredbandivarldsklass.se/Documents/cut%20the%20costs.pdf](http://www.bredbandivarldsklass.se/Documents/cut%20the%20costs.pdf)

(FCC) in its National Broadband Plan noted the importance of having ready access to information about infrastructure and its owner if there is to be a timely and efficient process for accessing and utilizing this existing infrastructure. The FCC felt that it was within its remit to ensure that infrastructure seekers and providers have the data they need to lower costs and accelerate the buildout of broadband networks.<sup>16</sup> Additionally, given the increasingly diverse nature of networks, regulators need to rely on details including actual and forecasted network deployment in order to be effective and to target the areas where it is needed.<sup>17</sup> The database will provide the government with an understanding of the current level of passive infrastructure in a given area and identify where would benefit from public intervention.

## **4.4 Main Bottlenecks to Infrastructure Sharing**

### **4.4.1 Responses of Stakeholders**

5G Americas noted that the different rules and authorization periods set by local authorities act as a bottleneck to network deployment. The organization recommended the creation of standardized rules and expedited processes that are streamlined and have predictable timeframes. It also recommended the introduction of practices such as "positive administrative silence".

Digicel stated that it is having difficulty securing access to ducts and poles. The company noted that in some locations the options for overhead cable and cable entry rooms etc. are limited and cannot be readily modified to accommodate additional carriers. Digicel also stated they had difficulties with obtaining Inter-urban connectivity.

Flow is of the view that the Jamaican market is a constraining factor and is not able to generate sufficient revenues for two competing operators. The company further stated that the geography of Jamaica also plays a role as it necessitates many points of presence which in turn drive high fixed costs to maintain and operate the network.

CACU stated that although it is not in a position to state definitely what the main bottlenecks are, it would suggest looking at issues such as: the under dimensioning of current backhaul facilities; fibre availability; IP availability; high cost of spectrum licences as well as time for planning approval.

### **4.4.2 OUR's Response**

Although the question posed in the NPRM asked about bottlenecks to infrastructure sharing, almost all of the bottlenecks mentioned by the respondents are bottlenecks to infrastructure

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<sup>16</sup> <http://www.broadband.gov/plan/6-infrastructure/#r6-3>

<sup>17</sup> European Commission (2016) DRAFT REPORT

on the proposal for a directive of the European Parliament and of the Council establishing the European Electronic Communications Code

deployment. Flow has raised issues such as the country's geography and economy which cannot be addressed by legislation or administrative procedures. The Rules should alleviate those bottlenecks that relate to accessing existing infrastructure. For those bottlenecks where the remedy is outside the remit of the OUR, representation will be made to the relevant entities such as the local planning authorities and the Ministry with responsibility for telecommunications.

## Chapter 5: Comments on Chapter 7 (Framework for Infrastructure Sharing in Jamaica)

### 5.1 Applicability of Rules

#### 5.1.1 Response by Stakeholders

Flow stated that the premise of the infrastructure sharing principles was "*that all licensees which own or control telecommunications infrastructure should provide access to the infrastructure*", save for circumstances where it is technically infeasible to do so and where the licensee is not providing the infrastructure to itself or a connected company. Flow further stated that this approach is in opposition to the mandate given to the OUR under the Act. The company stated that the OUR can only impose an infrastructure sharing obligation on a licensee where it is justified under the circumstances outlined in the Act.

5G Americas stated that there is an element of discrimination in the application of the Rules in that specific parts of the Rules will apply only to certain Licensees and their infrastructure. It noted that this can provide negative incentives for new infrastructure deployment and participation in spectrum auctions. The organization advocated for non-discriminatory guidelines and reiterated their preference for free and open negotiations in the marketplace.

Digicel agreed that all licensees should be susceptible to the Rules. However, it is of the view that obligations should only be placed on those that are dominant in a relevant market. CACU while agreeing with the general applicability, stated that clarity as to why specific rules will only apply to certain licensees is required.

#### 5.1.2 OUR's Response

The OUR disagrees with Flow that its approach is not in keeping with the provisions of the Act. Additionally, the OUR disagrees with Flow that the Rules has placed an obligation on all licensees to share infrastructure. The Rules prescribe a regulatory framework that is applicable to all licensees which own or control telecommunications infrastructure in that, sections of the Rules address how an infrastructure seeker and provider should interact, regardless of whether the sharing is mandated or voluntary. Section 4 of the Rules makes it clear that only dominant licensees have a general obligation to share and that all other obligations will be imposed on specific identified infrastructure, on a case by case basis.

The OUR notes 5G Americas comment regarding the element of discrimination introduced by specific provisions of the Rules being applicable to some operators and its likely impact on network deployment. Globally, asymmetric regulation is a common element in telecommunications rule-making which is carried out to achieve the important goal of stimulating market entry and thus promoting effective competition. The impact of access/sharing regulation on competition and investment is well debated. The aim of such regulations is to achieve a balance between the need to promote efficient investment in new and enhanced infrastructure

and the need to facilitate effective competition in telecommunications markets. The OUR is aware that operators make investments in infrastructure taking account of their future capacity needs. The Rules indicate that the right of a licensee to reserve capacity of its infrastructure for which it has made long term investments will be taken into account when arriving at a determination on sharing. The OUR has also increased the capacity that a licensee can reserve, from twenty (20) to thirty (30) percent.

Like 5G Americas, the OUR would prefer to see increased voluntary sharing in the sector. As stated in the NPRM however, operators have been reluctant to engage in sharing. The move by OUR, to implement infrastructure sharing rules, is in keeping with the global practice of having regulatory interventions when the market fails to engage in voluntary sharing.

The OUR disagrees with Digicel's proposal that infrastructure sharing obligations should be restricted to licensees who are dominant in a relevant market. Such a restriction would not be in keeping with the objects of the legislation. For instance, the Act contemplates mandatory sharing in cases where an operator has been refused a permit to construct its infrastructure and the 'replacement infrastructure' is owned by a non-dominant licensee.

## **5.2 Basis for Refusal of Access**

### **5.2.1 Responses of Stakeholders**

5G Americas stated its preference for voluntary arrangements and noted that the use of ex ante obligations negate reciprocity and impose a regulatory burden on operators with more infrastructure and potentially more connections. The organization stated that reduced network performance can result from mandatory active sharing. It gave the example of RAN sharing where it is required to serve more connections and where external factors such as atypical concentration of users, are aggravated by mandatory infrastructure sharing.

CACU, Verge and Digicel all agreed with the basis outlined for refusal of access. However, both Verge and Digicel, felt that it should be explicitly stated that refusal should be based on objective justification. Verge further stated that supporting evidence should also be provided. Digicel was also of the view that the reasons for refusal of access, should be provided in writing within thirty (30) days of verification of an access request.

### **5.2.2 OUR's Response**

As stated earlier, reciprocal sharing arrangements can act as a barrier to entry. The Rules proposed by the OUR will not only provide for the mandatory sharing of infrastructure but will also promote greater transparency and efficiency in cases where the licensees engage in voluntary infrastructure sharing arrangements. The Rules will establish certainty in the infrastructure sharing process and align expectations of access-seekers and infrastructure providers.

The OUR recognizes 5G Americas' concern regarding the impact that sharing can have on network performance and advises that the Rules have taken this into account. A licensee can refuse to grant access where sharing of the asset will impair the security or reliability of the infrastructure. In terms of factors such as increased connections or atypical concentration of users, the provisions of sharing agreements such as those governing matters relating to ordering and forecasting should take account of such capacity demands.

Under the Rules, a refusal to share must be based on circumstances related to technical feasibility which is an objective justification. Licensees are required to communicate refusals in writing, to the requesting licensee and specify the reasons for such refusal. The Rules also provide for the submission of supporting evidence to the OUR in the case of a refusal.

The OUR concurs with Digicel that there should be a timeframe for the communication of a refusal of access as this would be in keeping with the promotion of efficiency within the infrastructure sharing process. The change as recommended will therefore be inserted in the Rules for promulgation.

### **5.3 Timeline for Completion of Infrastructure Sharing Agreement**

#### **5.3.1 Responses by Stakeholders**

Digicel and Verge agreed with the timeline proposed by the OUR. CACU stated that licensees should collectively agree on a timeline that the OUR can then accept as the standard.

#### **5.3.2 OUR's Response**

Given that the interests of infrastructure seekers and infrastructure providers are not necessarily aligned it is unlikely that there will be consensus on a negotiation timeline. Those operators with extensive infrastructure footprint have an incentive to delay the sharing process and are likely to request longer timelines than those with a smaller footprint.

### **5.4 Requirement to register agreements with the OUR**

#### **5.4.1 Responses by Stakeholders**

Verge requested clarification on the requirement that licensees register infrastructure sharing agreements with the OUR. The company wanted to know if this is a requirement for approval and whether the agreements will be published.

#### **5.4.2 OUR's Response**

Licensees are not required to seek the OUR's approval before signing an infrastructure sharing agreement. In light of this, it makes sense for licensees to register agreements with the OUR once

signed. The Rules did not contemplate that the Office would object to the agreements submitted by the licensees. However, upon further review, it was decided that it would be prudent for the Office to have the right to object to any agreement which is offensive to the Act or any regulations or rules made thereunder. This change will therefore be inserted in the Rules for promulgation.

With regard to the publication of agreements, the OUR considers that in the interest of transparency and to assist in ensuring that interconnection agreements are non-discriminatory, the public availability of agreements is desirable. Any of the parties to an agreement may, upon submission, indicate the provisions which should be treated as confidential, in accordance with section 7(6) of the Act.

## **5.5 Dispute Resolution**

### **5.5.1 Responses by Stakeholders**

Both Verge and Digicel pointed out that as written, the dispute resolution procedure is not applicable to pre-contract disputes. Verge indicated that once the timeline established for the negotiation of a contract has expired without the parties reaching an agreement, either party should have the right to refer the matter to the OUR without any internal escalation.

Digicel also stated that the requirement to use the dispute escalation procedure as stated in the infrastructure sharing agreement provides an incentive for the offering operator to "*game the process by forcing disputes*". It noted that requiring the use of the escalation procedure before referring to matter to the OUR effectively prevents the "*supervision of the agreement during the currency any such dispute*". The company believes that the Rules should not preclude parties from referring matters directly to the OUR for its determination or any other action as might be appropriate.

Both Digicel and CACU highlighted the fact that a licensee should have the right to utilize other mechanisms for settling infrastructure sharing disputes.

### **5.5.2 OUR's Response**

The OUR agrees with Verge and Digicel that as written, the dispute resolution procedure does not contemplate the referral of pre-contract disputes to the OUR. This is an oversight. The OUR intends for the rules to be applicable to both pre-contract and post-contract disputes. The dispute resolution provisions in the Rules have been modified to allow for the referral of pre-contract disputes to the OUR.

The OUR notes that there is nothing in the Rules which prevents a licensee from using other dispute resolution procedures.

## 5.6 Basis for the Imposition of Obligations - Matters relating to the public health etc.

### 5.6.1 Responses of Stakeholders

Digicel stated that it is in broad agreement with the factors that are proposed to be taken into account. Verge does not disagree with the approach proposed by the OUR but is uncertain why the OUR had singled out this particular basis on which it will impose sharing obligations. The company is of the view that all licensees are required to share the infrastructure that they use or provide to their own operators.

Flow stated that the OUR's proposal that it "may mandate the sharing of existing infrastructure that will provide the rejected operator with the same/similar facilities as the infrastructure for which permission is not granted" is too simplistic. The company noted that in the absence of some justification, one cannot assume that an operator will not be allowed to construct its infrastructure in an alternative location or utilize some other technology to meet the intended function. Flow has also challenged the adequacy of the consultation by the OUR in that the OUR has not outlined, for example, the principles that would guide it in making an assessment regarding health and safety concerns. Flow also stated that it had expected that the OUR would have consulted with the relevant authorities prior to issuing the NPRM.

CACU expressed the view that where a Licensee's permit has been rejected, the onus should be on the licensee to propose the alternative sharing option and make a request following the process. CACU stated that the OUR should be guided by the decisions of the relevant authorities and that if the OUR is responsible for identifying alternative infrastructure, this would place it in the role of ICT engineers rather than regulator. CACU also felt that taking on a consultative role with relevant authorities introduces unneeded bureaucracy.

### 5.6.2 OUR's Response

The Act does not place an obligation to share on all licensees. Instead, it gives the OUR the authority to impose sharing obligations if it feels it is justified having regard to any one of three considerations:

- i. matters relating to public health or to the environment or town planning or other development considerations;
- ii. economic inefficiencies; or
- iii. physical or technical impracticability.

The OUR has outlined in the NPRM, the factors it will take into account before imposing an obligation. The OUR has deemed it reasonable that all dominant licensees should have a general obligation to share. All other cases will be determined on a case by case basis.

The Rules were informed by consultations with both public and private entities. The operative word in the section of the NPRM quoted by Flow is '**may**'. As reflected in the NPRM, the imposition of a sharing obligation under section 29A(1)(a)(i) will have to be determined on a case by case



basis. This, therefore, necessitates interaction with the requisite authorities prior to mandating access. Section 4 of the proposed Rules outlined some of the relevant matters which the OUR will take into consideration when determining whether to mandate access in cases where licenses have been refused a permit. The section also states that where a sharing obligation is being imposed on a non-dominant licensee, the Office will provide written reasons to the licensee. The affected licensee as well as any other interested party will be given a reasonable opportunity to make representation.

The OUR will not be responsible for searching for suitable replacements where a licensee has been refused a permit to construct an infrastructure. The role of the OUR will be to determine whether sharing will be mandated in circumstances where the licensee has found a suitable replacement but the infrastructure provider refuses to share. Before imposing an obligation in those circumstances, the OUR will consult with the relevant authorities.

The NPRM made mention of the decision by the Government to establish Development Orders for all parishes and select communities.<sup>18</sup> The St Catherine Provisional Development Order 2017 for instance, addresses the construction of telecommunications infrastructure. Policy SP TELE12 of the Fifth Schedule states: “In considering planning applications from licensed operators, consideration will be given to the possibility of sharing existing masts, replacing one with another for joint use or erecting one suitable for joint use and that proposals will not affect the skyline or other areas of importance”.<sup>19</sup> The Development Orders clearly have implications for the deployment of telecommunications networks. The OUR will develop a protocol with the relevant authorities, in order to streamline the process by which mandatory sharing may be triggered due to section 29A(1)(a)(i). This will allow for greater coordination on matters of mutual concern between relevant authorities.

## **5.7 Basis for the Imposition of Obligations – Economic inefficiencies**

### **5.7.1 Responses of Stakeholders**

5G Americas again stated its support for free, open and mutually beneficial negotiations between operators "since they can address very specific inefficiencies".

Digicel is in broad agreement with the factors which will be taken into account when determining whether to impose an infrastructure sharing obligation on a licensee.

CACU supported the OUR's proposal that a general obligation to share should be imposed on dominant operators. The organization noted that such a mandate could reduce entry barriers for new players and ultimately be beneficial to consumers.

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<sup>18</sup> [http://www.jamaicaobserver.com/news/Development-orders-for-all-parishes-expected-by-2017\\_19238307](http://www.jamaicaobserver.com/news/Development-orders-for-all-parishes-expected-by-2017_19238307)

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[http://nepa.gov.jm/new/legal\\_matters/laws/Planning\\_Laws/TCPA\\_StCatherine\\_Provisional\\_Development\\_Order\\_2017.pdf](http://nepa.gov.jm/new/legal_matters/laws/Planning_Laws/TCPA_StCatherine_Provisional_Development_Order_2017.pdf)

Flow claimed that the OUR has not indicated what factors it will use to make the determination to mandate sharing based on economic inefficiencies and that this should be the subject of a separate consultation. Flow stated that it has three fundamental concerns about the OUR's proposal:

- a) "First, in our view, the OUR's thinking is evidence of its misinterpretation of its mandate under the Act. Since the Act only intends to impose infrastructure sharing in the exceptional circumstances specified under the Act;
- b) Second, any attempt by the OUR to enforce its misunderstanding would be sure to have a chilling effect on investment in the sector; and
- c) Third, the OUR is to be reminded that dominance itself is not prohibited by any statute or policy. As such, dominant firms are not to be forced to share their investments with others as a matter of course."

In its comments on responses, Digicel noted that Flow glossed over the fact that an obligation to share would only be imposed in situations where the operator has been found dominant in a relevant market. Digicel pointed out that while dominance itself is not proscribed by statute or policy it has consequences and public bodies may feel regulatory intervention is required to ensure economically efficient outcomes.

### 5.7.2 OUR's Response

Studies such as OECD (2008) show that a major part of the costs involved in the rollout of high-speed networks can be attributed to inefficiencies in roll-out process.<sup>20</sup> The studies advocate for the limitation or removal of the inefficiencies in order to make the roll-out of broadband networks more effective. Some of these inefficiencies in the deployment communications infrastructure can be eliminated by implementing simple measures, such as a more intensive use of existing physical infrastructure.

The process of declaring a licensee dominant takes account of, among other things, factors that create competitive bottlenecks/barriers to entry. In fact, the presence of high entry barriers is a significant contributing factor to a licensee's dominance. The factors which give rise to competitive bottlenecks/barriers to entry include: the control of infrastructure not easily duplicated; sunk costs; economies of scale and scope; barriers to expansion; regulatory/administrative entry barriers; and anti-competitive behaviour. Other factors taken into account, include the ability of the relevant entity to leverage its position in a particular market into a related market (e.g. between a wholesale and a retail market).

Therefore, where dominance has been determined, the imposition of mandatory sharing/access obligations is generally viewed as a key measure by which to address existing bottlenecks. The facilitation of access to a dominant operator's infrastructure, is fundamental to addressing very significant barriers to network deployment and severe restrictions on end-user choice and quality

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<http://www.oecdilibrary.org/docserver/download/5kz83r71zt9n.pdf?expires=1354706494&id=id&accname=guest&checksum=ABF880A53E2CCF52CD3972CBDE6AAD64>

of service. A majority of national regulatory agencies in EU Member States have imposed obligations on operators with significant market power requiring them to share their existing infrastructure.<sup>21</sup> The ITU and DigiLac regulatory toolkits, also propose the imposition of obligations on dominant operators owning infrastructure as a means of alleviating competitive bottlenecks.<sup>22</sup>

Section 29A of the Act, gives the OUR the authority to mandate infrastructure sharing where it determines it is justified, based on any one of three considerations, one of which is economic inefficiencies. Given that a declaration of dominance, would have already taken into account and found the presence of inefficiencies associated with the roll-out of networks this relevant pre-requisite is met by such a finding. It is therefore reasonable and well within the OUR remit to impose a general obligation to share on dominant licensees. The Rules will therefore require that dominant operators be mandated to provide access to their infrastructure, where technically feasible. The costing methodology proposed should strike the appropriate balance between facilitating efficient entry and ensuring that there are sufficient incentives to invest. In this regard, the OUR considers that the further qualification in respect of technical feasibility and the costing methodology, provide safeguards. Notably, if at any time, a dominant operator can demonstrate that a particular infrastructure should not be shared, it can file a written request with the Office accompanied by supporting evidence which establishes a reasonable basis for such a request.

While the OUR has determined that all dominant licensees should have a general obligation to share their infrastructure, it should not be construed that sharing obligations can only be imposed in on dominant licensees. Section 29A of Act provides for the imposition of sharing obligations on non-dominant licensees. However, to reiterate, the determinations regarding such impositions will be done on a case by case basis.

## **5.8 Basis for the Imposition of Obligations - Physical and Technical Impracticability**

### **5.8.1 Responses of Stakeholders**

Digicel agreed with the factors which will be taken into account when considering whether to impose a sharing obligation under section 29A (1)(a)(iii) of the Act.

Flow expressed the view that sharing should not be mandated unless it is impossible for the access seeker to replicate the facility. The company stated that caveats should be added around what constitutes "replicating the facility". Flow noted that technological developments may provide alternatives that meet the requirements of the access seeker and remove the need for shared access. Flow further stated that the physical or technical impracticability must lead to a competitive bottleneck in the market before the Office can have a basis to "contemplate the imposition of Infrastructure Sharing". Digicel in its comments on responses, pointed out that

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<sup>21</sup> [ec.europa.eu/information\\_society/newsroom/cf/dae/document.cfm?doc\\_id=1907](http://ec.europa.eu/information_society/newsroom/cf/dae/document.cfm?doc_id=1907)

<sup>22</sup> <http://toolkitdigilac.com/publications>; <http://www.ictregulationtoolkit.org/index>

Flow's argument that a standard of "impossibility" should apply before a sharing obligation based on "physical or technical impracticability" can be imposed is incorrect.

Verge stated that the requirement that an operator must be unable to replicate an infrastructure by reasonable means before sharing is allowed, would undermine infrastructure sharing policy goals. In its comments on responses, Flow noted that Verge's position indicates a lack of appreciation of the Act which outlines the circumstances under which obligations can be imposed. The company stated that the Act makes it clear that a sharing obligation can only be imposed where commercial negotiation fails and bottleneck elements are involved. Digicel also disagreed with Verge and noted that the OUR's proposal to use replicability as a test for mandating access is entirely proper, as otherwise licensees could seek to avoid costs and operational activities that they should incur in normal network deployment. The company further noted that Digicel's deployment of towers and masts is direct evidence that such assets are not bottlenecks to the deployment of networks and that the need to build them is a barrier to entry.

CACU disagrees with the approach outlined by the OUR and is of the view that feasibility should be determined by an independent engineer and that the OUR should not take on the role as ICT Engineer and place itself in a position to render a decision on technical feasibility. The organization was of the view that the OUR should rely on NEPA physical impracticality determinations and an independent engineer (PERB or JIE) for technical impracticality determinations. In its comments on responses, Digicel noted that CACU's response seemed to imply that the OUR did not have the technical competence to properly oversee the sector and that is call for an independent engineer seemed to impugn the OUR's impartiality. The company indicated that it was confident in the independence and competence of the OUR with regard to infrastructure sharing matters.

### 5.8.2 OUR's Response

Flow is incorrect when it stated that an infrastructure must be impossible to replicate before the OUR can impose an obligation. The Act is clear that the required standard is "physical and technical impracticality". The OUR does agree that it needs to clarify what is meant by 'replicate' in the context of the infrastructure sharing rules. In the Rules, the term 'replicate' does not mean alike in appearance, rather, replicate means alike in functionality. Therefore, where there exists alternative infrastructure, that provides like functionalities and which is not physically or technically impractical for the licensee to construct, sharing will not be mandated. Additionally, the mere fact that more than one such infrastructure already exists should not necessarily be interpreted as meaning that the particular infrastructure is replicable. Regulators have found that although it is technically possible to duplicate the mobile network infrastructure, the sunk costs relating to mobile network investments will represent significant entry barriers.<sup>23</sup>

The OUR disagrees with CACU's statement that the OUR should not be involved in the process of determining technical infeasibility. While the onus will be on the infrastructure seeker to prove that it is physically or technically impractical to replicate the particular infrastructure, it is the OUR's

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<sup>23</sup> [https://eng.nkom.no/market/market-regulation-smp/markets/market-15/\\_attachment/24535?\\_download=true&\\_ts=155ca33ba75](https://eng.nkom.no/market/market-regulation-smp/markets/market-15/_attachment/24535?_download=true&_ts=155ca33ba75)

role to assess whether those claims or any counter claims received are valid. The OUR will determine the best means of discharging this regulatory responsibility. This could mean using in-house resources or out sourcing the task. Either way, the question of replicability would still be an issue for consideration by the regulator.

## **5.9 Consultation regarding the imposition of obligation**

### **5.9.1 Responses of Stakeholders**

Verge stated that it agrees that an opportunity to be heard must be given "from a natural justice standpoint, and in accordance with the language of the Act". The company expressed the view that extensive consultation is not required once the OUR has made a determination "following suitable consultation", that certain licensees should be subject to a general sharing obligation or that particular infrastructure must be shared.

Flow noted that the OUR is proposing to consult before any directive is given under section 29A (1) of the Act.

### **5.9.2 OUR's Response**

The Rules impose a general obligation to share on dominant licensees and thus no further consultation will be undertaken in that regard. Sharing obligations imposed under section 29A(1)(a) (i) and (iii) of the Act will be determined on a case by basis and implemented by way of directives. Rule 4.7 of the Rules reads: "*Prior to issuing a directive under section 29A (1) of the Act to a non-dominant Licensee to share infrastructure, the Office shall provide a reasonable opportunity for the Licensee that owns or controls the infrastructure, and any other interested party, to make representations on the matter and shall give consideration to all such representations*".

## **5.10 Principles for Cost Apportionment**

### **5.10.1 Responses of Stakeholders**

Digicel stated that it is in broad agreement with the costing principles proposed for the setting of infrastructure sharing charges.

Flow stated its disagreement with the principles and repeated its call that infrastructure sharing not be mandated and that negotiated commercial arrangements should be governed by rates based on market value considerations.

CACU disagreed with some areas of the OUR's proposal. It stated that where the unbundling of costs may not be practical, apportioning of costs may have to be accepted. The organization expressed the view that since sharing is being promoted, inter alia, for cost savings and ultimately increased profit, it seems counterintuitive that infrastructure sharing charges shall not include

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compensation for loss of business. They also stated that the opportunity cost in lost business may reduce the motivation to share.

### 5.10.2 OUR's Response

The OUR has already outlined why voluntary sharing is not feasible. With respect to market determined rates, section 29A (2) of the Act requires that the Office make rules for the apportionment of the costs of sharing infrastructure in accordance with the principles set out in section 33 of the Act. Moreover, where there is an imbalance of negotiating power, as is likely to be the case in the telecommunications sector, negotiated rates will likely serve to undermine the sharing process.

Under the Rules, an infrastructure seeker is required to request sharing of specific facilities and the OUR is of the view that an infrastructure provider should be able to sufficiently unbundle the distinct facilities and corresponding charges. However, where unbundling of costs is not feasible then allowances would have to be made.

CACU is indeed correct that one of the reasons for promoting infrastructure sharing is cost savings. This however, does not automatically guarantee profits, as this will depend on the efficiency with which a licensee conducts its business. The setting of infrastructure sharing charges will include a reasonable rate of return on the infrastructure provider's capital. Allowing the infrastructure provider to recoup lost retail revenues in wholesale prices, will ultimately erode the ability of independent operators to exert competitive pressure on national retail prices. This will erode the effectiveness of the Rules to facilitate increased competition in the sector.

## 5.11 Costing Methodologies

### 5.11.1 Responses of Stakeholders

CACU stated that they are in agreement with cost-based price setting.

Verge stated its agreement that the negotiation of charges for infrastructure sharing is unlikely to result in "appropriate and fair rates" in the local market due to the dominance of a few players. Verge further stated that the rate-setting process is not to be used as means for delay access to shared facilities.

Digicel stated that it is not in agreement with the use of a fully distributed cost methodology with a replacement value approach to asset values. The company claimed that in the case of the assets relevant to the rule making "the elements are sufficiently upstream from the telecoms services that they support" so as to render any fully distributed cost distribution to these elements meaningless. Digicel stated that these assets are "highly decoupled from the retail market and technology changes" in the provision of telecommunication services and consequently should be considered on a standalone basis using a long run incremental cost (LRIC) approach.

Digicel also stated the long economic lifetime of the assets will mean that the use of Current Cost Accounting (CCA) rather than Historical Cost Accounting (HCA) will give the access provider a

windfall revenue from the sharing. This, the company argued, will impose a real cost on access seekers that are not borne through depreciation charges by the access provider. Consequently, Digicel has stated that the use of CCA is not appropriate and suggests that the correct approach will be for non-replicable assets such as ducts to use the HCA approach. It further suggested that in order to ensure a "prompt availability of an access offer", the OUR should set interim prices based on benchmarks until such time as a fully costed price can be determined.

Flow stated its disagreement and referred to its response with regard to "Principles for Cost Apportionment".

### 5.11.2 OUR's Response

An ex ante pricing obligation is necessary as there is a risk of excessive pricing due to weak (in)direct constraints. For this reason, the OUR has proposed that operators utilize fully distributed cost (FDC) methodology, using current cost accounting and the annuities approach to depreciation. The OUR is of the view that this costing methodology will best achieve the objects of the Act, including the encouragement of economically efficient investment in the sector. Moreover, the OUR must take section 33 of the Act into account when setting a costing methodology and therefore is not in a position to impose the LRIC costing methodology for the determination of infrastructure sharing charges. The section requires that the infrastructure sharing charges should be between the total long run incremental cost of providing the service and the standalone cost of providing the service. Furthermore, in a study of costing methodologies for access to copper and fibre, it was determined that FDC and CCA sent the same price signals as LRIC for competition and neutrality; efficient network transition; protecting consumers; protecting investors; and commitment consistency and transparency.<sup>24</sup>

The OUR disagrees with Digicel's suggestion regarding the use of HCA instead of CCA. In general, replacement cost valuations are preferable to indexed historic valuations because they provide greater transparency. HCA cannot account for the evolution and continuous improvement in technology and is reflective of inefficiencies resulting from past decisions of the operator<sup>25</sup>. CCA produces a valuation which is more closely in keeping with those in a competitive market than historic cost valuation, particularly where an annuity rather than the straight line method is used for depreciation. The OUR believes that current cost valuation will set efficient entry price signals to competing infrastructure providers.

The OUR notes Digicel's proposal that OUR set interim prices based on benchmarks until such time as a fully costed price can be determined. While the OUR is not minded to set interim prices, it is of the view that the use of benchmarks, where available, could minimize the time taken to adjudicate disputes related to access charges. The Rules have therefore been amended to give

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[http://www.plumconsulting.co.uk/pdfs/Plum\\_Costing\\_methodology\\_and\\_the\\_transition\\_to\\_next\\_generation\\_access\\_March\\_2011\\_Final.pdf](http://www.plumconsulting.co.uk/pdfs/Plum_Costing_methodology_and_the_transition_to_next_generation_access_March_2011_Final.pdf)

<sup>25</sup> Pg. 24 [https://www.itu.int/ITU-D/finance/Studies/Regulatory\\_accounting\\_guide-final1.1.pdf](https://www.itu.int/ITU-D/finance/Studies/Regulatory_accounting_guide-final1.1.pdf)

the OUR the authority to utilize local and international benchmarks as well as the principle of reciprocity when making a determination on infrastructure sharing charges.

## **5.12 Framework Agreements**

### **5.12.1 Responses of Stakeholders**

Digicel expressed the view that an infrastructure seeker cannot know the details of an infrastructure, in order to fully specify its requirements or construct a business case regarding the requested access without having a framework agreement in place. The company proposed the use of framework agreements which specify the process for handling the call down of specific assets to be shared. Digicel indicated that it was currently negotiating framework agreements with Flow in other jurisdictions. Digicel also recommended the use of penalty backed SLAs to reduce the need for regulatory oversight.

In its comments on responses, Verge supported Digicel's proposal of a framework agreement. The company stated that the agreement, would contain terms and conditions common to most sharing situations, with specific schedules added as needed. Verge noted that such an arrangement would remove the need to negotiate a new agreement every time a new instance of sharing is proposed and make the process more efficient. Verge also stated that "a reference offer structured as a framework agreement would be a useful approach".

### **5.12.2 OUR's Response**

Upon further review, the Office decided that the utilization of framework agreements would be in keeping with the objective of promoting efficiency within the infrastructure sharing process. In the light of this, the Rules were amended and Reference Access Offers are now required to include options for a Framework Agreement.