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Office of Utilities Regulation

Dominant Public Voice Carriers

**Supplementary Consultative Document:
Market Definition for Telephony Access**



OFFICE OF UTILITIES REGULATION

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Supplementary Consultation on Dominant Public Voice Carriers: Market Definition
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Abstract

In response to the Office of Utilities Regulation's (OUR) consultation on Dominant Public Voice Carriers, Cable and Wireless Jamaica (CWJ) and Mossel (Digicel) Jamaica have suggested that the use of the 'hypothetical monopolist test' may lead to an incorrect definition of the scope of the relevant market if applied to regulated prices. Although an analysis of changes in the prevailing prices provides actual evidence of consumer behaviour, in principle, the test requires the use of competitive prices. Nonetheless, in practice, cost based regulated prices are used in cases where competitive price are not available.

In relation to the fixed line access service and associated domestic call services, when determining the relevant market, given that the current prices for access (line rental and installation) bear no relationship to reported costs, the OUR will rely more on the functionality and characteristics of the products in question as well as the conditions of competition and/or the structure of demand and supply on the market in question. In instances where prices are cost based, reference will be made to these prices.

Even without reference to the 'hypothetical monopolist test', the scope of the product and geographic markets must still be determined by identifying whether or not the price setting behaviour of an enterprise is constrained by substitution. As implied by the definition of dominance in the Fair Competition Act (FCA), the constraints to be considered are, existing competitors (supply substitution) and potential competitors. Additionally, customer behaviour is usually considered to be an important constraint (demand substitution).

The fixed line telephony access services of both the wired and wireless carriers are treated as being in the same market. The only major difference between a wire and a wireless fixed access is the technology by which the service is delivered. While wire line telephone access quality is almost guaranteed, radio (wireless) transmission's quality is somewhat less guaranteed. However, since both types of access provide the same services in terms of functionality and network capability, the OUR proposes to regulate the quality of service provided by operators of fixed networks by the same set of standards irrespective of technology. Further, based on the functionality and capability of mobile networks, the OUR proposes that these quality of service standards should not apply to mobile carriers.

Fixed telephony access and the associated domestic calling markets are viewed as separate markets, but the demand for domestic calls are derived from the demand for access lines. Therefore, the analysis of dominance in the fixed telephony access market is interrelated to the markets for calling services. The OUR also considers that the markets for fixed access and associated call services are different from mobile telephony access and associated calling markets. The OUR concludes that the markets for fixed telephone access and

associated domestic calling services are the relevant markets that should be assessed for dominance.

In relation to dominance, the analysis points to a continued high concentration of the fixed telephony access market (and by extension, the domestic calling markets). The OUR considers that this is attributed to the height of entry barriers and competitive constraints, including the inability to effectively duplicate the local loop on a scale that is sufficient to compete with the incumbent.

Based on the height of entry barriers and competitive constraints, the OUR considers that Cable and Wireless Jamaica is dominant in the markets for fixed telephony access and associated domestic calling markets.

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COMMENTS FROM INTERESTED PARTIES

Persons who wish to express opinions on the issues in this document are invited to submit their comments in writing to the OUR.

Responses to this Document should be sent by post, fax or e-mail to: -

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Fax: (876) 929-3635
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Responses

Responses are requested by July 24, 2003. Any confidential information should be submitted separately and clearly identified as such. In the interests of promoting transparent debate, respondents are requested to limit as far as possible the use of confidentiality markings. Respondents are encouraged to supply their responses in electronic form, so that they can be posted on the OUR's Website.

The OUR's intention in issuing this document is to stimulate public debate on the important regulatory issues surrounding the matter of dominance of public voice carriers and to observe reasonable standards of procedural fairness in the regulatory process. Any response to this Document will form a vital part of the public debate on the issue of dominance. Comments may take the form of either correcting a factual error or putting forward counter arguments.

Arrangements for viewing responses

To allow responses to be publicly available, the OUR will keep the responses that it receives on files, which can be viewed by and copied for visitors to the OUR's Offices. Individuals who wish to view the responses should make an appointment by contacting Lesia Gregory by one of the following means: -

Telephone: (876) 968 6053 (or 6057)
Fax: (876) 929 3635
E-mail: lgregory@our.org.jm

The appointment will be confirmed by a member of the OUR's staff. At the pre-arranged time the individual should visit the OUR's offices at:

3rd Floor, PCJ Resource Centre, 36 Trafalgar Road, Kingston 10

The individual will be able to request photocopies of selected responses at a price, which reflects the cost to the OUR. Also, copies of this document may be downloaded from the OUR's Web site at <http://www.our.org.jm>

Timetable

The timetable for the completion of this consultation has been revised and is summarized in the table below. This includes an indicative timing for the Determination Notice.

| <i>Event</i> | <i>Date</i> |
|---|---------------|
| Supplementary Consultative Document | July 18, 2003 |
| Responses | July 24, 2003 |
| Draft Determination Notice for FTC's Comments | July 28, 2003 |
| Consultative Meeting with FTC | July 30, 2003 |

FIXED LINE TELEPHONY SERVICES

Market Definition: Access

Product Market

- 1.0 The local loop infrastructure (telecommunications access lines) connects the end-users (residential and business) to the local telephone exchange or end office. The line extending from the central offices, to the Master Jack, (to which the telephone handset is connected) represents the local loop. This allows for the delivery of traditional voice telephone services and other retail services.
- 1.1 The market for access lines is integral to that for domestic voice telephony or calling services since the demand for access lines is to a significant degree, determined by the demand for voice telephony services (a service that enables real-time speech via communications networks¹). Domestic calling services are accessed via local loops from fixed wired telecommunications networks or fixed wireless telecommunications networks. That is, domestic calling services are accessed via wire lines or wireless local loops.
- 1.2 From the customer's point of view, the price of fixed line access is composed of line rental and installation. For this price, the customer receives an exchange line connecting their premises to the operator's exchange. Because the price of access are reportedly below cost, respondents to the previous consultative documents (Cable and Wireless Jamaica (CWJ) and Mossel (Digicel) Jamaica) have suggested that the use of the 'hypothetical monopolist test' may lead to an incorrect definition of the scope of the relevant market. Although an analysis of changes in the prevailing prices provides actual evidence of consumer behaviour, in principle, the test requires the use of competitive prices. However, in practice, cost based regulated prices are used in cases where competitive prices are not available.²
- 1.3 In determining the relevant market, given the contention that current prices for access may not bear any relationship to reported costs, the OUR will rely more on the functionality and characteristics of the products in question, as well as the conditions of competition and/or the structure of demand and supply in the market. In instances where prices are cost based, reference will be made to these prices.

¹ See <http://www.teleinquiry.govt.nz/reports/issues/issues-04.html>).

² See paragraph 42 of the European Commission's Guidelines on Market Analysis and Assessment of Significant Market Power under the Community regulatory framework for electronic communications networks and services (2002/C 165/03)

- 1.4 Even without reference to the 'hypothetical monopolist test', the scope of the product and geographic markets must still be determined by identifying whether or not the price setting behaviour of an enterprise is constrained by substitution. As implied by the definition of dominance in the Fair Competition Act (FCA), the constraints to be considered are, existing competitors (supply substitution) and potential competitors. Additionally, customer behaviour is usually considered to be an important constraint (demand substitution).
- 1.5 The fixed line telephony access services of both the wired and wireless carriers are treated as being in the same market. The only major difference between a wire and a wireless fixed access is the technology by which the service is delivered. While wire line telephone access quality is almost guaranteed, radio (wireless) transmission's quality is somewhat less guaranteed. However, since both types of access provide the same services in terms of functionality and network capability, the OUR proposes to regulate the quality of service provided by operators of fixed networks by the same set of standards irrespective of technology. Further, based on the functionality and capability of mobile networks, the OUR proposes that the aforementioned quality of service standards should not apply to mobile carriers.
- 1.6 Currently, there are only two Public Voice Carriers offering fixed telephony access service. CWJ's domestic calling services are offered via a wire line while GOTEL Communications offer domestic calling services via a wireless local loop.

Demand Substitution

- 1.7 From a consumer's point of view, access is seen as the ability to make and receive calls. The most obvious alternative to making a domestic call via the fixed telephone access lines on the fixed telephone network is to use the wireless access on a mobile telephone network. The extent to which mobile telephony access service is substituted for fixed line telephony access service depends on availability, quality of service and price.
- 1.8 In relation to availability, both Digicel and CWJ have indicated that coverage has been extended to most of the populated areas of the country. However, as indicated by some publicly available coverage maps, only outdoor coverage is available in some areas. Where coverage is spotty, residential and especially business customers are unlikely to give up their fixed access service (in most instances, a wire-line connection) for mobile access. Further, in relation to the business segment of the market, mobile telephone systems often do not provide easy call transfers and other common features available on a fixed line

network via an office PBX. The features are critical in maintaining efficient production process in many business situations. Business customers are also not likely to require only mobile trunks on PBXs because of the wide differential in usage tariffs.

- 1.9 In relation to service quality, the voice quality from fixed connections is usually superior, with limited echo and speech delay. Further, mobile calls are dropped more frequently when compared to calls via fixed connections. Based on information on the UK mobile industry for 2002, failed call set-ups range from 0.9% to 2.7% and dropped calls range from 1.5 to 2.9%³. In the US mobile market, one major mobile carrier indicated that its dropped calls range between 1% and 2%⁴. Although specific data is not available for Jamaica, the OUR is of the view that these are characteristics of the industry. The standard benchmark for the fixed line network (PSTN) is 99.999% availability⁵.
- 1.10 Based on data provided by the Statistical Institute of Jamaica (STATIN) for 2002, 3.04% of households surveyed indicated that they had both mobile and fixed line telephones⁶. This means that these households view mobile and fixed telephony access (and calls) as complements rather than substitutes.
- 1.11 The data also showed that 10.47% of those sampled had mobile telephones only. If fixed telephony access penetration was high, this could suggest that some households are substituting mobile for fixed telephone access. However, the proportion of households with no telephone access is 29.08%, 8.44% and 10.98% for the rural, other town and KMA respectively. This suggests that a significant proportion (48%) of households have no choice of access. This is especially acute in the rural arrears. In fact, of the 10.47% of households with mobile only, almost two thirds are in rural areas which have very limited access to fixed line telephone service since most of the capacity on the fixed line networks is concentrated in the urban areas.
- 1.12 In its February 9, 2001 "Advanced notice on Interconnection Charges and Fixed-Mobile Retail Prices", the Office indicated that the retail rate for fixed-to-mobile (FTM)⁷ calls will be cost oriented. In the OUR's May 8,

³ See http://news.zdnet.co.uk/cgi-in/uk/printer_friendly.cgi?id=2074183.

⁴ See <http://news.com.com/2100-1033-947069.html?legacy=cnet>.

⁵ See the Business Communications Review at <http://www.bcr.com/bcrrmag/2002/05/p06.asp>.

⁶ The sample size was over 8,000 respondents distributed across the country.

⁷ The FTM rate is composed of the mobile termination charge and the retention rate or the amount kept by the fixed operator.

2002 Determination Notice, it indicated that, in relation to FTM retail rates, retention is limited to cost oriented level⁸.

- 1.13 Currently, all FTM rates are at or above cost⁹. The highest FTM rate is \$12 per minute while off-net mobile-to-mobile (MTM) rates are \$5.70 to \$7.70 per minute greater depending on the network that the calling party is on. With Digicel's recent announcement that its peak FTM rate will be reduced to \$7 per minute in September 2003, the price differentials (between FTM and MTM off-net calls) will increase to \$8.70 to \$10.70 per minute.
- 1.14 Depending on the mobile operator and based on the market share of each operator, the likelihood that a mobile call will be on the same mobile network (on-net) is between 5% and 51%¹⁰. That is, if the market share of a carrier is 5%, the likelihood of calls remaining on that network is estimated at 5%. This suggests that the likelihood of a call being "off-net" is between 49% and 95%. Rational consumers would opt for a FTM call (with retail rates as low as \$7 per minute), as opposed to a MTM "off-net" call, (with rates as high as \$19.70 per minute) since they will be able to save several dollars per minute.
- 1.15 Although mobile coverage far exceeds that of fixed networks, and pre-paid (pay as you go) mobile phones are widely available¹¹ at no access cost, the waiting list for fixed line access remains high. Based on complaints from prospective Gotel (the new fixed wireless carrier) customers, there is a growing waiting list for both voice telephony and Internet access. CWJ's waiting list for fixed telephone access remains over 168,000 as at as at March 2003. This is clear evidence that there is a significant excess demand for fixed telephony access even though mobile coverage maps suggests that two of the three carriers offer geographic coverage greater than 75% and one operator suggests that its population coverage is 95%. In some cases mobile phones are being sold at prices below the initial cost of fixed line access (that is, one month's rent plus installation charges).
- 1.16 Since mobile phones are widely available, with over two years of aggressive competition in the retail mobile market, potential customers remaining on the fixed line waiting list should be rapidly approaching zero if mobile and fixed access were substitutes. However, the large number of

⁸ See <http://www.our.org.jm/PDF-FILES/RIODeterminMay82002.pdf>.

⁹ The OUR sets a maximum termination rate based on international benchmarks. Some operators chose to charge less than the maximum while one operator chose the maximum.

¹⁰ Market shares are based on OUR estimates.

¹¹ Prepaid or pay as you go mobile phones are greater than 90% of the total mobile telephone access lines. Access is acquired by purchasing a mobile phone.

potential customers remaining on the fixed line waiting list suggests instead, that consumers view mobile and fixed telephony access lines as complements.

Supply Substitution

Existing Competitor

- 1.17 Wireless Local Loop (WLL) can be used as a substitute for the existing copper loops. WLL is "... a local wireless communications network that bypasses the local exchange carrier and provides high-speed, fixed data transmission."¹² GOTEL, the new fixed wireless carrier, indicated that it has constructed a fixed wireless network covering 97% of the island. GOTEL commenced offering service as at November 2002. However, the network is only 20% operational, offering service to four¹³ of fourteen parishes. Based on figures from the Statistical Institute of Jamaica (STATIN) for 2001, approximately 52% of the population is located in these four parishes. Therefore, assuming that all the households in these parishes have access to GoTel's service, at least 48% of the population would not have access to this service. However, there is still doubt in relation to the performance of this technology and based on information available to the OUR, GoTel's network coverage does not extend to all households in the parishes in which service is currently offered.

Potential Competition

Subscriber television (STV)

- 1.18 STV networks are often seen as a possible substitute for the local loop. The local cable networks are designed for one-way transmission of audio-visual signals over regular coaxial cables. These networks would require significant capital expenditures in order to properly configure them for the provision of two-way voice telecommunication services. More importantly, except for a single wireless STV licence, cable operators are confined to a specific geographic segment of the country. Therefore, most cable operators cannot compete with C&WJ on a national basis in relation to the provision of a substitute for the local loop. Consequently, they will not be able to compete on a national basis in the provision of retail telecommunications services. Moreover, the market for providing this type of telephony access via STV networks has been liberalized since September 2001 and there has been no entry.

Wireless local loops (WLL)

- 1.19 N5 Systems Limited (N5), the holder of the only all-island wireless STV licence issued to date, uses fixed wireless technology to deliver broadband services (video and high speed internet access) to most of

¹² <http://www.aethersystems.com/wireless/glossary.asp>

¹³ The population in these parishes were: St. Andrew 604,716, Kingston 115,184, St. Catherine 414,700 and Clarendon 229,400 as at 2001.

Kingston and St. Andrew, and some areas of the adjoining rural parishes. N5 also has Domestic Carrier (DC) and Domestic Voice Service Provider (DVSP) licences. However, voice services are not currently offered. It is possible that this system could offer a competitive substitute for the existing domestic telecommunications network and the local loop but this is not likely to occur in the near term given that the backbone of the network has not been completed.

Mobile Operators

- 1.20 Mobile operators could also construct their own fixed line networks. However, the operator would need to incur significant sunk costs in establishing a fixed access network. This is usually a significant entry barrier. Moreover, establishing a fixed access network is usually extremely time consuming. This suggests that supply side substitution is not likely to occur within the time frame that would constrain a supposedly dominant operator.
- 1.21 Instead of establishing a complete network, mobile operators or other potential new entrants could establish long-distance transmission networks and purchase access to CWJ's end offices and the local loop. However, in addition to the time required to establish the network, potential entrants would have to await the results of the consultation on and the establishment of rule for local loop unbundling (LLU)¹⁴.

Geographic Market

- 1.22 Based on demand side substitution, fixed access in one geographic area is not a substitute for access in another geographic area. For example, without number portability, a fixed access line in one geographic area might not be seen as a substitute for a fixed access line in another area. However, given that access line rental and usage charges are geographically uniform, the consumer is not restricted by price difference if he/she has to move from one geographic area to another. On the supply side, except for the subscriber television service providers, all fixed access licensees are licensed to provide service throughout Jamaica. On this basis, the OUR considers that the geographic market for fixed line telephony access is Jamaica.

Market Definition

Domestic Call Product Markets

- 1.23 As noted above, the market for access lines is integral to that for domestic voice telephony or calling services. However, it should be noted that the OUR believes that access and calls constitute two separate markets. This

¹⁴ Under section 83(1) of the Telecommunications Act (2000), the power to make rule in relation to the local loop was deferred until phase three of the liberalization process.

is so since, assuming that the local loop is unbundled, the entry barriers to the call market would be less for domestic long-distance operators offering calls without offering an access service.

- 1.24 Both domestic carriers that offer voice telephony access service and the potential long distance carriers that will not offer an access service, can offer the full range of call services (FTM, intra-parish, inter-parish and international).

Geographic Scope of the Calls Market

- 1.25 On the demand side, since usage charges are geographically uniform, the consumer is not restricted by price difference if he/she has to move from one geographic area to another. On the supply side, all fixed access licensees are licensed to provide service throughout Jamaica. It is on this basis that the OUR is of the view that the geographic market for fixed line calls is Jamaica.

Conclusion

- 1.26 Based on information collected by the OUR and data from independent sources, mobile and fixed telephony access are complements rather than substitutes. Further, it has been approximately two years since the liberalization of the fixed telephony access and domestic calling markets but only one carrier has entered these markets, and with just only 20% operational capacity. Nonetheless, the services offered by GOTEL are viewed as close substitutes for the services (access and domestic calling) being offered by CWJ and will be regulated by the same quality of service standards. Given the foregoing analysis, fixed telephony access and the associated domestic calling markets are viewed as separate markets from mobile telephony access and associated calling markets. The markets for fixed telephone access and associated domestic calling services are the relevant markets that will be assessed for dominance in this document.

INDICATORS OF DOMINANCE

Effective Competition

- 1.27 The price cap rule identified the necessary conditions for effective competition: At least one competitor is actually operating in the relevant market using its own switching and transmission facilities; in aggregate, other competitors have capacity in place to meet a large portion of the total output of the relevant market, or the Office determines that the market for the service is not characterized by anticompetitive practices.
- 1.28 In relation to the first condition, GoTel has its own switching and transmission facilities and its service is potentially available to an estimated 52% of the population. Based on the existing number of subscribers served by the incumbent (CWJ) and the waiting list for fixed

line access service, the OUR estimates that the demand for fixed telephony access as at March 2003 is approximately 612,968. However, about 170,000 of this amount are un-served customers.

- 1.29 According to GoTel, it has network capacity to accommodate more than half of the total market output. Therefore, it seems to satisfy the first necessary condition for effective competition. However, based on unresolved complaints against Gotel to both the OUR and the FTC (regarding its failure to supply fixed telephone access) as well as other information available to the OUR, it is difficult to conclude that a public voice carrier using fixed wireless access is likely to offer effective competition in the medium term in the market for telephone access and associated call markets. Moreover, since C&WJ's residential access¹⁵ price is more than 40% below the price of access on Gotel's network, this will serve to limit competition.

Market shares

- 1.30 Although GoTel's entry into the fixed telephone access market has reportedly satisfied the necessary conditions for effective competition, this is not sufficient to ensure the realization of an effectively competitive market. As discussed in the section on entry barriers and competitive constraints, there may be barriers to market entry and competitive constraints that affect the competitive environment in the fixed telephone access market.
- 1.31 Additionally, according to a FTC publication, it ... "will generally consider an enterprise to be dominant if it has a 50 percent market share."¹⁶ Based the EU's Article 82 (the equivalent to the Fair Competition Act's Section 20) dominance is presumed if a company has a market share that is consistently over 50%. Up to the entry of GoTel in November 2002, C&WJ's share of the fixed access market was 100%. As at December 31, 2002, C&WJ's market share was 99.5% and as at March 31, 2003, its market share was 99% (see Table 1). This is well above the 50% threshold used to indicate a presumption of dominance.

¹⁵ About 75% of C&WJ's fixed access customers are in the residential category.

¹⁶ See the FTC's publication: A Guide to Anti-Competitive Practices.

Table 1

| | | OPERATORS | | MARKET SHARE | | |
|---|-------|-------------|-----------|--------------|-----------|-----------|
| | | 1988 - 2001 | Dec' 2002 | Jan' 2003 | Feb' 2003 | Mar' 2003 |
| Fixed Telephony Access Lines | C&WJ | 100.0% | 99.5% | 99.3% | 99.1% | 99.0% |
| | GOTEL | 0.0% | 0.5% | 0.7% | 0.9% | 1.0% |
| | OTHER | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| | | | | | | |

Source: OUR calculation based on data from Cable & Wireless and GoTel

1.32 Furthermore, it may be instructive to consider the experience in other countries. In the UK, after 16 years after allowing entry into the market for fixed telephone access, British Telecom (BT) still controlled over 80% of the market.

Entry Barriers

1.33 The FTC's guidelines indicates that, "An enterprise with a persistently high market share may not necessarily hold market power if entry to the market is easy".¹⁷ Thus, an evaluation of entry barriers is important in assessing market power and dominance in the relevant market.

1.34 Rate rebalancing: C&WJ's costing data indicate that the current fixed line access tariffs do not cover the cost of providing fixed telephone access. Access, as well as other domestic services is subsidized by economic profits from international services. Residential fixed access line tariffs are currently more than 60 percent below reported costs. In liberalized markets, the deficit on access should appropriately be financed through an access deficit charge, if the access prices are constrained by regulation. At the existing levels of access charges, even efficient carriers are likely to find it difficult to enter the market for access services.

1.35 GoTel's pricing strategy for fixed line telephone service cannot constrain C&WJ's pricing for its comparable service without significant rate rebalancing. In the context of rate rebalancing and the liberalization of the international carrier service and service provider markets, the incumbent local exchange carrier (C&WJ) may be entitled to an access deficit as per

¹⁷ See the FTC's publication: A Guide to Anti-Competitive Practices. Supplementary Consultation on Dominant Public Voice Carriers: Market Definition Document No: TEL 2003/05 July 18, 2003

section 33(1)(f) of the Act if regulatory constraints remain on access prices.

- 1.36 Incumbent Advantage: (1) Network redundancy is needed to ensure effective competition. Competitive public voice carriers in the market for fixed telephony access are required to have adequate redundancy in their networks in order to compete effectively with the incumbent fixed access provider. Redundancy is required in both the switching and trunk design. It will require a significant capital outlay to achieve a comparative level of redundancy to that which exists in C&WJ's fixed network. Business customers in particular, may be reluctant to switch to a new public voice carrier if the level of redundancy is deemed inadequate to continue service provision in times of network component failure or downtime.
- 1.37 (2) The established customer base and customer inertia could give the incumbent market power, which could minimize entry or the effect of entry. According to the UK Institute for Public Policy Research "Significant barriers to entry, such as customer inertia and high advertising spend, are unabated by competition. As a consequence, continuous regulatory intervention was necessary to manage the transition from monopoly to competitive market in the UK. In particular, price regulation had to be progressively tightened to ensure affordability of the basic services."¹⁸
- 1.38 Vertical Integration and Corporate Relationship: The extent of vertical integration evidenced in the corporate relationships, could be used to impose competitive constraints in various markets for telecommunications services. A licensee like C&WJ that is fully integrated (owning and operating all aspects of the a fixed network and a mobile network) is more likely to be unconstrained by its competitors. That is, a vertically integrated carrier is more likely to be in a position to operate independently of its competitors.
- 1.39 Vertical relationship is especially important if it is coupled with dominance in a given market, since this can be used in an anti-competitive manner. Dominance in an upstream market can be extended to downstream markets through vertical relations. In the absence of proper regulatory accounts, dominance in the market for local loop access can be used to leverage control in the retail service markets. For example, in order to provide Internet access, most service providers, must rely on access (direct or indirect) to C&WJ's end offices so that C&WJ's fixed line customers can access their services.

¹⁸ <http://europa.eu.int/ISPO/convergencegp/ippr.html#Market%20forces%20in%20telecommunications>

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- 1.40 Based on corporate relationship, it is possible for a vertically integrated carrier and service provider to use its market power to gain control of other markets. Hence, in the absence of a structural separation, it is important that an effective firewall is maintained for vertically integrated network operators.
- 1.41 Effective Duplication of Local loop Access: The local loop is generally viewed as the last area of dominance in the world's telecommunications industry. In the UK, after 16 years of deregulation, British Telecom retained over 80% of the fixed-access market (business and residential) and the rate of erosion of their market share continued to decline.¹⁹ In most regulatory jurisdictions, the telecommunications legislation enforced by the national regulatory authority (NRA) provides for local loop unbundling (LLU). This provision is in recognition of the fact that it is not economically feasible to duplicate the local loop on any significant scale. In addition to the cost of duplicating the local loop, an entrant would also have to invest additional amounts to encourage subscribers to switch to their service (see discussion below on sunk costs and economies of scale and density). Ensuring appropriate levels of quality (inclusive of redundancy) would be a major determining factor of substitutability.
- 1.42 It is yet to be seen if GoTel or any other public voice carrier can climb these hurdles. In the case of the UK, if OFTEL had allowed BT's prices to be removed from price cap regulation based on the liberalization of the fixed access market, the entry of a competitor in 1984 and the further opening of the market since the review of the BT-Mercury duopoly in 1991, BT's continued dominance would be further prolonged and OFTEL would have failed to protect consumers.
- 1.43 Since the unsuccessful attempt at introducing WLL by C&WJ in some rural areas over five years ago, the technology has improved. Given that the Island's terrain is mostly mountainous, a fixed network that uses a non-line of sight technology would be appropriate. However, based on recent reports, non-line of sight fixed wireless technologies are still at the testing phase²⁰. The use of line of sight technology is not likely to provide an efficient solution. Hence, based on a line of sight technology, competition could be restricted to a few areas of the country.
- 1.44 Geographic Restrictions on Coax Cable TV operators: Currently, the island is divided into 241 zones and the policy of the Broadcasting Commission is to license two operators per zone. Each operator can only supply service within a designated zone. Therefore, a single operator

¹⁹ <http://program.intel.com/solutions/shared/en/resource/insight/indtrends/stateoftheuk.htm>

²⁰ <http://www.80211-planet.com/columns/article.php/975921>

could not compete effectively with C&WJ in supplying a substitute for the local loop.

- 1.45 Facilities Sharing and Collocation: C&WJ said that, "Facilities Sharing is dealt with under sections 54 and 55 of the Telecommunications Act. The Act specifically provides that carriers can request to share facilities of other carriers and that where disputes arise as a result of refusal to share, the aggrieved carrier can apply to the court for redress. C&WJ merely wishes to remind the OUR that there is no provision in the Act related to the power of the FTC or the OUR to make any determination in such matters, nor in any other related matters."²¹
- 1.46 The Office agrees with this position, as it applies to the OUR but does not share the same the same view with respect to the FTC. Currently, the OUR is not able to order carriers to share their facilities or offer co-location since it has no explicit basis in law, even though best practice would dictate that the Office should have the power to issue such orders. The Office may consider applying its general rulemaking powers in this case, as it seeks to foster competition.
- 1.47 However, the fact that disputes arising as a result of refusal to share should be referred to the court for redress means that litigation could be used to delay access to land or other facilities. In other words, litigation could be used as a barrier to entry or to constrain competition by delaying access to land or other facilities.

Other Barriers and Competition Constraints

Sunk Costs

- 1.48 In addition to the entry barriers mentioned above, an important entry barrier is sunk costs. These are costs that must be incurred to enter an industry but are not recoverable on exit. A potential entrant will only incur the sunk costs of investment in capacity to provide a product if it expects to cover these sunk costs in addition to the variable and other avoidable costs of production from revenues earned from the sale of that product. However, the incumbent Public Voice Carrier and service provider (CWJ) has already made its sunk investments and is likely to remain in the market as long as avoidable costs are covered.
- 1.49 Given the asymmetry in cost, the incumbent can choose to price its product below the level required for an entrant to cover their (the entrant's) sunk costs. Entry would then be deterred. In telecommunications, the sunk costs to create an efficient public voice network are usually very large and are mainly unrecoverable if the entrant decides to exit the market.

²¹ See CWJ's response to the OUR's second Consultative Document on Dominant Public Voice Carriers. Supplementary Consultation on Dominant Public Voice Carriers: Market Definition
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- 1.50 Economies of Scale and Density: The entry barrier of sunk costs is likely to be exacerbated by significant economies of scale and density, which are characteristics of telecommunications networks. That is, large carriers are likely to have lower costs than smaller carriers. Thus, to become competitive, the entrant would have to acquire a large share of the market by pricing its service below the cost of the incumbent. The result is that the entrant is not likely to be able to recover its sunk costs. Hence, entry barriers are likely to be high for new public voice carriers.

Cost of Switching Service Providers

- 1.51 Number Portability: Number portability is the ability of customers to change public voice service providers without changing their telephone number. Customers (especially business customers) are likely to be unwilling to switch voice service providers since this will mean a change in their telephone numbers. This will entail additional advertising expenditure for business customers. Therefore, the lack of portability increases the switching cost²² for customers.
- 1.52 Perceived Quality of Service (QOS): An additional cost of switching suppliers to take advantage of the competing service offered by another fixed access service provider is the perceived quality of service and reputation of the alternative service provider. Switching service providers is sometimes seen as risky and this can be costly in cases where subscribers are not fully informed about the service quality of alternative public voice carrier.

Changes in Market Structure over Time

- 1.53 As indicated in Table 1, C&WJ's market shares remain at or above 99%, with no indication of a trend of rapid decline. The competitiveness of a market, which is affected by market structure, depends on the number of other operators competing in it and their relative strengths. Thus, a measure of market concentration is also used to reflect the extent of market competitiveness.
- 1.54 As indicated in the OUR's Guidelines for Assessing Dominance, the OUR has adopted the commonly used Hirschman-Herfindahl index (HHI)²³ to

²² This is the cost to the consumer of changing from an existing service provider to an alternate service provider. The higher the degree to which the customer is locked-in to the service of its existing service provider, the higher the switching cost. These costs include costs of physical replacements of the telephone instrument as well as costs incurred in the transition (including learning) to the new service provider.

²³ The Herfindahl-Hirschman-Index (HHI) is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. The HHI approaches zero when a market consists of a large number of firms of relatively equal size. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases.

measure market concentration. The US merger guidelines and those used by EU competition authorities contain explicit thresholds indicating the degree of market concentration as indicated by the HHI. Markets that are not concentrated have an HHI below 1000. A market with an HHI of between 1000 and 1800 is regarded as 'moderately concentrated' and a market with an HHI of above 1800 is regarded as 'highly concentrated'. A market that is highly concentrated is subject to regulatory scrutiny since a monopoly or dominant firm may be operating in this market. A monopoly would have an HHI of 10000, which is the maximum possible value of the index.

- 1.55 It is evident from the market share data in Table 1 that the market for fixed telephone access lines is highly concentrated. This is confirmed by the HHI in Table 2, which indicates an HHI value greater than 9,700 as at March 2003. This suggest that the market is highly concentrated and, given the rate of decline and the height of market entry barriers and competitive constraints, the OUR expects the HHI to remain above 1,800 (the threshold for concentrated markets) for the foreseeable future.

Table 2.

| MARKETS | MARKET CONCENTRATION – HHI | | | | | |
|-------------------------------------|----------------------------|-------------|-----------|-----------|-----------|-----------|
| | Date | 1988 – 2001 | Dec' 2002 | Jan' 2003 | Feb' 2003 | Mar' 2003 |
| Fixed Telephony Access Lines | | 10,000 | 9,908 | 9,864 | 9,820 | 9,716 |

Source: OUR calculation based on data from Cable & Wireless and Gotel

DOMINANCE

- 1.56 Approximately two years since the liberalization of the markets for fixed telephony access and associated domestic calling services, there has been limited change to the structure of the market for fixed telephony access lines. The HHI for the fixed telephony access market remains over 9,700 suggesting that it is still highly concentrated with CWJ having 99% share of the relevant market. According to the FTC, it ... "will generally consider an enterprise to be dominant if it has a 50 percent market share."²⁴
- 1.57 The continued high concentration of the fixed telephony access market (and by extension, the domestic calling markets) is attributed to the height of entry barriers, including the inability to effectively duplicate the local

²⁴ See the FTC's publication: A Guide to Anti-Competitive Practices. Supplementary Consultation on Dominant Public Voice Carriers: Market Definition Document No: TEL 2003/05 July 18, 2003

loop on a scale that is sufficient to compete with the incumbent and the fact that the prices for access remain below reported costs.

- 1.58 Based on the forgoing analysis, the OUR is of the view that Cable and Wireless Jamaica remains dominant in the markets for fixed telephony access and associated domestic calling markets.

ACRONYMS

| | | |
|--------|---|--|
| BT | - | British Telecom |
| C&WJ- | | Cable and Wireless Jamaica |
| DC | - | Domestic Carrier |
| DVSP | - | Domestic Voice Service Provider |
| FCA | - | Fair Competition Act |
| FTM | - | Fixed-to-Mobile |
| HHI | - | Hirschman-Herfindahl index |
| KMA | - | Kingston Metropolitan Area |
| LLU | - | Local Loop Unbundling |
| MTM | - | Mobile-to-Mobile |
| NRA | - | National Regulatory Authority |
| OFTEL- | | Office of Telecommunications (UK) |
| OUR | - | Office of Utilities Regulation |
| PBX | - | Private Branch Exchange |
| PSTN | - | Public Switched Telecommunications Network |
| QOS | - | Quality of Service |
| STV | - | Subscriber Television |
| WLL | - | Wireless Local Loop |