Office of Utilities Regulation

Dominant Public Voice Carriers

Determination Notice

OFFICE OF UTILITIES REGULATION

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Office of Utilites Regulation

ABSTRACT

The Office of Utilities Regulation (OUR) has a duty to "…determine which public voice carriers are to be classified as dominant public voice carriers for the purposes of the Telecommunications Act"(Section 28(1)). Dominance is as defined in Section 19 of the Fair Competition Act, 1993.

Although dominance is usually defined at a particular point in time, market gains by new entrant as well as technological change, may erode such dominance over time. However, in telecommunications network facilities, including interconnection markets, it often takes significant time for new entrants to overcome the incumbent's dominance. Even with the removal of licensing restrictions, other barriers to entry have retarded the growth of competition, particularly in fixed telecommunications markets.

This Determination Notice sets out the Office's decisions regarding the fixed telecommunications network markets in which a public voice carrier holds a dominant position. In relation to mobile termination, the Office will commission an independent customer survey to test the validity of claims made by Mossel Jamaica Limited (Digicel) in relation to the definition of the relevant market. This survey will be in addition to an earlier survey completed in April 2003.

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CHAPTER 1: INTRODUCTION

Purpose of this Document

1.0 Prior to publishing this Determination Notice, the Office issued three Consultative Documents and a Supplementary Consultative Document on the issue of Dominant Public Voice Carriers. The Office also issued its comments on responses to Consultative Documents one and three in a separate document. Responses and reply responses (comments on responses) were received from Mossel Jamaica Limited (Digicel) and Cable and Wireless Jamaica Limited (C&WJ) on all three Consultative Documents. Responses were also received from both parties on the OUR's comments and the Supplementary Consultative Document.

1.1 Additionally, the Office received responses from:

* The Fair Trading Commission (FTC);
* Infochannel
* Reliant Enterprise Communications Limited; and
* The Ministry of Commerce, Science and Technology.

1.2 This Determination Notice contains the Office's decision regarding the fixed telecommunications network markets in which a public voice carrier holds a dominant position. In relation to mobile termination, based on Digicel's suggestion that e-mail and text messaging are substitutes for mobile termination, the suggested constraint of buyer power on the price setting behaviour of mobile operators, and the claim that there is one termination market, the Office will commission an independent customer survey to determine the validity of these claims. This survey will be in addition to an earlier survey conducted between February and March 2003. The results of the latter survey were recently made available to the OUR. The Office intends to make a determination of dominance in relation to mobile termination by December 2003.

Regulatory Framework

1.3 The OUR has a duty to "…determine which public voice carriers are to be classified as dominant public voice carriers for the purposes of the Act"(Section 28(1)). Dominance is as defined in Section 19 of the Fair Competition Act, 1993.

1.4 Before making a determination of dominance the OUR is required to invite submissions from members of the public, and consult with and take account of recommendations made by the Fair Trading Commission (Section 28(2)). There were extensive consultations with the FTC through a process of meetings and consideration of the written and oral comments submitted by that agency. In addition, the OUR also submitted the draft of this Determination Notice to the FTC and held a consultative meeting on August 12, 2003 to discuss its contents before it was finalized.

1.5 Section 19 of the Fair Competition Act (FCA) states that, "… an enterprise holds a dominant position in a market if by itself, or together with an interconnected company, it occupies such a position of economic strength as will enable it to operate in the market without effective constraints from its competitors or potential competitors." That is, the analysis of dominance must take place in a defined relevant market and should demonstrate that an entity has sufficient market power that enables it to act (by itself or in concert with other entities) without being effectively constrained by its competitors or potential competitors.

CHAPTER 2: THE MARKET FOR FIXED LINE TELEPHONE ACCESS

2.0 In relation to the market for fixed line telephone access, the Office has confirmed that C&WJ should continue to be regulated as a dominant public voice carrier based on the analysis that follows. The methodology used to conduct this analysis is set out in the appendix of this document and is consistent with the approach used in other jurisdictions such as the Office of Fair Trading (OFT)[1] in the UK. The analytic procedure is a two-step framework involving:

* The definition of the relevant market; and
* An assessment of dominant position

Market Definition: Access

Product Market

2.1 The local loop infrastructure (telecommunications access lines) connects the end-users (residential and business) to the local telephone exchange or end office. That is, the line extending from the central office, 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.

2.2 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 networks[2]). 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.

2.3 From the customer's point of view, the price of fixed line access is composed of line rental and installation. As indicated in determination 2.0, fixed access service should also include relocation and reconnection. In return for the price paid, the customer receives an exchange line connecting their premises to the operator's exchange.

2.4 The fixed line telephony access services of both the wired and wireless carriers are treated as being in the same market. The only major

[1] Source: http://www.oft.gov.uk.

[2] See http://www.teleinquiry.govt.nz/reports/issues/issues-04.html).

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 will regulate the quality of service provided by operators of fixed networks by the same set of standards irrespective of technology.

2.5 Currently, there are only two Public Voice Carriers offering fixed telephony access service. C&WJ's domestic calling services are offered via a wire line while GOTEL Communications offers domestic calling services via a wireless local loop.

Demand Substitution

2.6 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.

2.7 In relation to availability, both Digicel and C&WJ have indicated that the coverage of their mobile networks 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. These features are critical in maintaining an efficient production processes 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.

2.8 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% availability[5].

2.9 Based on data provided by the Statistical Institute of Jamaica (STATIN) for mid 2002, 3.04% of households surveyed indicated that they had both mobile and fixed line telephones[6]. This means that these households view mobile and fixed telephony access (and calls) as complements rather than substitutes.

2.10 In a more recent research conducted between February and March 2003, 25% of Jamaican households do not currently have at least one working mobile telephone while 75% have an average of two working mobile phones in the household[7]. Eleven percent (11%) of households indicated that they did not have telephone service, landline or mobile, while 26% have mobile phones as their only telephones. Of note, 45% of Jamaican households have both Cell phone and land line. This offers additional evidence that Jamaican households consider mobile and fixed telephony access as complements.

2.11 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)[8] calls will be cost oriented. The Determination Notice issued by the OUR on May 8, 2002 indicated that, in relation to FTM retail rates, retention is limited to cost oriented level[9].

2.12 Currently, at least one FTM rate is above cost and has been kept at this level for over two years[10]. Using the highest FTM rate of $12 per minute,

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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/bcrmag/2002/05/p06.asp.

6 The survey was conducted during the summer of 2002 with a sample size of over 8,000 respondents distributed across the country. The data from STATIN is unpublished.

7 See report by Market Research Services Limited, April 2003.

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

9 See http://www.our.org.jm/PDF-FILES/RIODeterminMay82002.pdf.

10 The OUR sets a maximum termination rate based on international benchmarks. Some operators chose to charge less than this maximum termination rate.

the off-net mobile-to-mobile (MTM) rates[11] are $5.70 to $7.70 per minute greater depending on the network that the called party is on. Using the lowest rate of $7.00 per minute, the off-net mobile-to-mobile (MTM) rates are $10.70 to $12.70 per minute greater depending on the network that the called party is on. With Digicel's recent announcement that its peak FTM rate will be reduced to $7 per minute in September 2003, the highest FTM rate will be $9 per minute from Oceanic Digital (formerly Centennial Digital). Using the latter rate, the price differentials (between FTM and MTM off-net calls) would be $8.70 to $10.70 per minute.

2.13 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%[12]. 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.

2.14 Although mobile coverage far exceeds that of fixed networks, and pre-paid (pay as you go) mobile phones are widely available[13] 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 fixed voice telephony access and Internet access. C&WJ'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).

2.15 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

[11] These rates are applicable to calls that are made from one mobile network to another.
[12] Market shares are based on OUR estimates.
[13] 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 based on consumers behaviour, mobile and fixed telephony access lines are complements. The Office therefore concludes that mobile access and fixed access are complements.

Supply Substitution

Existing Competitor

2.16 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."[14] 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 four[15] 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. Moreover, there is still doubt with regard 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)

2.17 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.

14 http://www.aethersystems.com/wireless/glossary.asp

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

Wireless Local Loops (WLL)

2.18 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 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

2.19 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.

Geographic Market

2.20 Based on demand side substitution, fixed access in one geographic area is not a substitute for access in another geographic area. For example, unless there is 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

2.21 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 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.

2.22 Both domestic public voice 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

2.23 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.

Determination 2.0
The telephony access and calling services offered by fixed wireless public voice carriers are close substitutes for the respective access and domestic calling services being offered by fixed wire telephony public voice carriers.

Determination 2.1
Fixed telephony access and the associated domestic calling markets are separate markets from mobile telephony access and associated calling markets.

Determination 2.2
The Office finds that the relevant markets are for fixed line telephony access and calling services in Jamaica. The relevant markets constitute both wired and wireless fixed line carrier services and calling services. The fixed line telephony access and calling services are separate but closely interrelated markets.

Determination 2.3
Mobile and fixed telephony access are complements rather than substitutes.

Indicators of Dominance

Effective Competition

2.24 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.

2.25 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 (C&WJ) 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.

2.26 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 Gotel's inability to supply telephony access on a consistent basis, unresolved complaints to both the OUR and the FTC (regarding its failure to supply the same), 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 access[16] price is priced below cost this will have the effect of limiting competition.

Market Share

2.27 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.

2.28 Additionally, according to a FTC publication, it … "will generally consider an enterprise to be dominant if it has a 50 percent market share."[17] Based

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

[17] See the FTC's publication: A Guide to Anti-Competitive Practices.

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 indicative of a presumption of dominance.

Table 1

	OPERATORS	**MARKET SHARE**				
Date		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

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

Entry Barriers

2.30 The FTC's guidelines indicate that, "An enterprise with a persistently high market share may not necessarily hold market power if entry to the market is easy".[18] However, persistently high market share coupled with high entry barriers points to a dominant market position. Thus, an evaluation of entry barriers is important in assessing market power and dominance in the relevant market.

2.31 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

[18] See the FTC's publication: A Guide to Anti-Competitive Practices.

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.

2.32 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.

(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."[19]

2.33 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 its 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.

2.34 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

[19] http://europa.eu.int/ISPO/convergencegp/ippr.html#Market%20forces%20in%20telecommunications

accounts, dominance in the market for local loop access can be used to leverage control in the retail service markets.

2.35 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.[20] In most regulatory jurisdictions, the telecommunications legislation enforced by the national regulatory authority (NRA) provides for local loop unbundling (LLU) [21]. 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.

2.36 It is yet to be seen if GoTel or any other public voice carrier can overcome 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.

2.37 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 phase[22]. The use of line of sight technology will not provide an efficient solution. Hence, based on a line of sight technology, competition could be restricted to a few areas of the country.

2.38 Geographic Restrictions on Coax Cable TV operators: Currently, the island is divided into 241 zones and the policy of the Broadcasting

[20] http://program.intel.com/solutions/shared/en/resource/insight/indtrends/stateoftheuk.htm

[21] 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.

[22] http://www.80211-planet.com/columns/article.php/975921

Commission is to license two operators per zone. Each operator can only supply service within a designated zone. Therefore, a single operator could not compete effectively with C&WJ in supplying a substitute for the local loop.

2.39 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."[23]

2.40 In relation to the FTC, the Office does not share this view. The FTC could intervene in cases where access is denied to essential facilities. 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 however, consider applying its general rulemaking powers (as per Section 71 of the Act) in this case, as it seeks to foster competition.

2.41 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.

Sunk Costs

2.42 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 (C&WJ) has already made its sunk investments and is likely to remain in the market as long as avoidable costs are covered.

[23] See C&WJ's response to the OUR's second Consultative Document on Dominant Public Voice Carriers.

2.43 Given the asymmetry in cost, the incumbent could choose to price its product below the level required for an entrant to cover its (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.

2.44 The entry barrier of sunk costs is likely to be exacerbated by significant economies of scale, which is a characteristic 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 will not be able to recover its sunk costs. Hence, entry barriers due to the impact of sunk costs are will be high for new public voice carriers.

Cost of Switching Service Providers

2.45 The lack of number portability will increase the cost to customers for switching service providers[24]. Also, the perceived Quality of Service (QOS) of the existing competitor increases the risk of switching service providers.

Changes in Market Structure over Time

2.46 As indicated in Table 1, C&WJ's market share remains 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.

2.47 As indicated in the OUR's Guidelines for Assessing Dominance, the OUR has adopted the commonly used Hirschman-Herfindahl index (HHI)[25] to

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[24] 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.

[25] 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.

2.48 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

Determination 2.4

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 C&WJ 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."[26]

The continued high concentration of the fixed telephony access market (and by extension, the domestic calling markets) is attributed to the height

[26] See the FTC's publication: A Guide to Anti-Competitive Practices.

of entry barriers, including the inability to effectively duplicate the local loop on a scale that is sufficient to compete with the incumbent and the fact that the prices for access remain below reported costs.

The OUR finds that Cable and Wireless Jamaica remains dominant in the markets for fixed telephony access and associated domestic calling markets.

CHAPTER 3: DOMINANCE IN OTHER FIXED TELECOMUNICATIONS MARKETS

3.0 Although dominance is usually determined at a particular point in time, market gains by new entrants as well as technological changes, may erode such dominance over time. However, in telecommunications network facilities, including interconnection markets, it often takes significant time for new entrants to overcome the incumbent's dominance.

3.1 C&WJ enjoyed a position of dominance in the markets for various specified services to which entry was restricted by exclusive licences issued in 1988 and by the Telecommunications Act ("the Act") 2000 (for an 18-36 month period depending on the specified service). The Office asserts that the question that arises relates more to the extent to which such dominance persists. That is, in relation to C&WJ, the analysis that must be carried out should test if C&WJ's dominance has been eroded in relation to the provision of specified services.

3.2 Based on the phased liberalization process outlined in Section 78 of the Act, when read in conjunction with Sections 75(3) and 76, C&WJ remained the exclusive provider of domestic carrier services and domestic telephone (voice) services for a further eighteen months from March 1, 2000. Also, its exclusivity in relation to international carrier services and international voice services were preserved for a further three years from that date. Therefore, based on the C&WJ's licences in one instance and the Act in the other, even if there were substitutes that were economically and technically feasible, these were legally barred from competing in the markets for the services listed in paragraph 3.6.

3.3 According to McNutt (2000)[27] "Often a national monopoly[28] may arguably be in a dominant position because of the history of the State and its responsibility for the provision of a public and universal (a public good argument) service." This position is consistent with the European Court of Justice's position "…that a legal monopoly had a dominant position by definition"[29]. Also, the responsibility of dominant carriers that are still or were formally the holders of special and exclusive licences, is particularly

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[27] Professor Patrick McNutt was Chairperson of the Competition Authority in Dublin from 1996 to early 2000. He is now Partner and Head of Competition & Regulatory Affairs at Indecon Consultants in Dublin. He is a Research Associate at the University of Dublin. See http://www.indecon.ie/mcnusp01.htm.

[28] The Court of Justice has held that an undertaking benefiting from a legal monopoly in a substantial part of the common market may be regarded as holding a dominant position, Case C-41/90 *Hofner & Elser* [1991] I 1979 para 28 and Case C-260/89 *ERT* [1991] ECR I -2925 para 31.

[29] See http://www.ciaonet.org/wps/saw02/.

strict given the extremely weak state of competition which is inevitable in the early stages of liberalisation and the transition to fully competitive markets.

3.4 Consistent with this view, the OUR's position is that the legal barriers to entry in various telecommunications markets as per the Act (particularly those restrictions on licensing of other public voice carriers to own and operate telecommunications facilities for the purpose of providing specified services) were sufficient to treat C&WJ as dominant in the markets for all specified services that are provided by these facilities.

3.5 The Office opted to regulate C&WJ as a dominant carrier in the telecommunications markets in Jamaica based on the fact that C&WJ's licences precluded entry in the relevant markets for telecommunications services. As stated in the "Guidelines for Assessing Dominance in Telecommunications Markets" (see Appendix), the assessment required by Section 28 of the Act and Section 19 of the FCA necessitates the identification of the relevant markets using tests for demand and supply side substitutability. To a large extent, any such tests were redundant because of the legal impediment to any other public voice carrier or any other entity providing specified services.

3.6 The specified services include:

(a) Fixed Access

- (i) Business access: This includes installation and rental of ordinary business lines and direct inward dialling (DID). Relocation and reconnection should also be included.
- (ii) Residential access: This includes installation and rental of ordinary residential lines and direct inward dialling (DID). Relocation and reconnection should also be included.

(b) Domestic Retail Services

- (i) Intra-parish Calls: These are calls originating from a fixed access line (residential or business telephone) in one parish to a fixed access line in the same parish.
- (ii) Inter-parish Calls: These are calls originating from a fixed access line (residential or business telephone) in one parish to a fixed access line in another parish.
- (iii) Public Pay Phones
- (iv) Other Domestic Retail: These include call waiting, three way dialling, call forwarding, automatic busy redial, priority ring, automatic call back, selective call rejection,

selective call forwarding, directory assistance and freephone services.

(c) International retail services

(i) Outgoing International Calls: These are calls on a fixed access line and wholesale minutes (including sales to mobile service providers) to points outside of Jamaica.

(ii) Incoming International Calls

(d) Fixed Network Interconnection Services

(i) These carrier interconnection services are sold by C&WJ to other operators and downstream businesses. They include switching, transmission, termination and other apparatus and system used in supplying telecommunications services.

3.7 According to C&WJ, "While legal barriers may have been sufficient prior to the year 2000 to justify a determination that C&WJ is dominant, it is clear that all markets are now fully liberalized and the current licensing regime is not a barrier to entry. Accordingly, at this point in time, the OUR should be examining and analysing the facts, as dominance is not a matter of law, but a matter of fact.[30]

3.8 Firstly, the claim that legal barriers before 2000 would make C&WJ dominant while those created by the Act does not, has no merit since entry to some markets was barred for up to three years after the February 2000. Secondly, the Office does not share the view that liberalization is equivalent to effective competition, as is suggested by C&WJ. The Office considers that since C&WJ has been the exclusive supplier of the specified services, initially as a state monopoly for several decades and then as a private entity, C&WJ's dominance is entrenched. Consistent with international experience, for some of the services identified at paragraph 3.6, there is limited or no substitutes that constrain the price setting behaviour of the incumbent (C&WJ) in early years of the transition to competition.

3.9 Moreover, based on the analysis in chapter 2, C&WJ remains the dominant public voice carrier in the market for fixed telephony access.

[30] See page 2 of C&WJ's response to the OUR's consultative document on dominant public voice carriers no. 3

Because of the effect of network externalities[31], C&WJ's market power in the market for fixed telephony access extends to the provision of the services listed in paragraph 3.6.

3.10 It is often expressed that the demand for telecommunications services in general and telephony in particular exhibits possibly the highest degree of network externalities[32]. The fact is demand for services (particularly, domestic retail services and interconnection services) on any telecommunications network depends significantly on the number of subscribers to the network. That is, the demand for domestic calling services (from business, residential or public access lines) and various value-added services (generally described as calling features) as well as interconnection services are integrally tied to the number of users of access lines. For example, for any given interconnection service, demand for that service on the dominant carrier's network (with a market share of 99%) will be significantly greater than that of a new entrant with a market share of 1.0%. In fact, demand for interconnection services from the entrant is likely to be non-existent.

3.11 It is against this background that the Office has taken the position that, what is required is an examination of the various telecommunications markets to determine if C&WJ's dominance has been eroded. As each market evolves and more information become available, the Office will consider this information and make a determination on dominance in each case.

Determination 3.0

The Office has determined that since it has no evidence indicating that Cable and Wireless' entrenched dominance has been eroded it will continue to regulate Cable and Wireless Jamaica as a dominant carrier in the telecommunications markets for:

(a) Fixed Access

(i) Business access: This includes installation and rental of ordinary business lines and direct inward dialling (DID). Relocation and reconnection should also be included.

[31] This describes the fact that the utility that a user derives from consumption of a good increases with the number of other agents consuming the same good. See http://europa.eu.int/comm/internal_market/en/finances/payment/table/vanhove.pdf

[32] See Shy, Oz 2001. *The Economics of Network Industries*, Cambridge University press.

(ii) Residential access: This includes installation and rental of ordinary residential lines and direct inward dialling (DID). Relocation and reconnection should also be included.

(b) Domestic Retail Services

(i) Intra-parish Calls: These are calls originating from a fixed access line (residential or business telephone) in one parish to a fixed access line in the same parish.

(ii) Inter-parish Calls: These are calls originating from a fixed access line (residential or business telephone) in one parish to a fixed access line in another parish.

(iii) Public Pay Phones

(iv) Other Domestic Retail: These include call waiting, three way dialling, call forwarding, automatic busy redial, priority ring, automatic call back, selective call rejection, selective call forwarding, directory assistance and freephone services.

(c) International retail services

(i) Outgoing International Calls: These are calls on a fixed access line and wholesale minutes (including sales to mobile service providers) to points outside of Jamaica.

(ii) Incoming International Calls

(d) Fixed Network Interconnection Services

(i) These carrier interconnection services are sold by C&WJ to other operators and downstream Businesses. They include switching, transmission, termination and other apparatus and system used in supplying telecommunications services.

3.12 The OUR considers that C&WJ's dominant position in the markets for international transit and switching facilities and the associated markets for international voice minutes could be the first markets where C&WJ's dominant market position is likely to be eroded significantly. Between January and March 2004, the OUR intends to conclude its consultation on dominance in international markets (carrier and calling services as well as backhaul facilities).

APPENDIX: GUIDELINES FOR ASSESSING DOMINANCE IN TELECOMMUNICATIONS MARKETS

Introduction

1.0 Section 27 of the Act states that Dominant Public Voice Carrier mean a public voice carrier that hold a dominant position in the telecommunications market in Jamaica within the meaning of Section 19 of the Fair Competition Act [1993]. Section 28(1) of the Act states that "…the Office shall determine which public voice carriers are to be classified as dominant public voice carriers for the purposes of this Act". Before making a determination of dominance the OUR is required to invite submissions from members of the public, and consult with and take account of any recommendations made by the Fair Trading Commission (Section 28(2)).

1.1 The methodology set out in this appendix is the OUR's approach to the identification of public voice carriers and service providers that are dominant in telecommunications markets in Jamaica. The approach is consistent with approaches in other jurisdictions such as the Office of Fair Trading (OFT)[33] in the UK, and the Australian Competition and Consumer Commission (ACCC)[34]. The analytic procedure is a two-step framework involving:

A) The definition of the relevant market
B) An assessment of dominant position

1.2 Prior to undertaking this procedure, the OUR should collect and collate the evidence required for the analysis. Such evidence include:

* Market share data (sales value and volume);
* Product functionality;
* Prices and costs;
* Inputs;
* Principal competitors; and
* Market entry conditions.

Additionally, the OUR would also wish to acquire information on the past conduct of the entity being assessed for dominance.

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33 Source: http://www.oft.gov.uk.

34 Source: http://www.accc.gov.au.

Relevant Market

1.3 Although the Act does not define the telecommunications markets, it can be gleaned from its wording which services and products may be included in the definition of the market. The OUR notes that the following may be included in a telecommunications market:

* A network service
* Access to facilities used in conjunction with a carrier or network service
* Goods or services used in conjunction with a network service (for example, customer premises equipment (CPE)).

1.4 Definition of the relevant market(s) is a necessary step in determining dominance. According to Oftel[35]:

> *"A market definition should normally contain two dimensions: a product and a geographic area. … The market definition analysis has to be applied separately to determine both the product and geographic area."*

1.5 Thus, by defining the relevant market, the analyst will identify the relevant products/services, as well as the extent of competition or the potential competition among firms within a specified geographic area. In relation to the geographic market analysis, the relevant question is whether a small but significant non-transitory increase in price (SSNIP) will result in customers switching to suppliers in other areas. The geographic area could be any part of Jamaica or the entire country. Similarly, in relation to the product market, the analyst would be concerned with the set of products that the consumers would switch to on the basis of a SSNIP. These products are identified based on functionality, quality, price, cost and customer groups.

1.6 In cases where prices do not reflect cost or are not reflective of competitive levels, 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 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

[35] Source: http://www.oft.gov.uk/html/comp-act

cases where competitive prices are not available.[36] In such cases, 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.

Product Market

1.7 The critical issue in market definition is the identification of products to which the consumers might switch. The most well known, and used approach to market definition in competition and regulatory agencies across jurisdictions is the aforementioned SSNIP or 'hypothetical monopolist' test. The underlying approach is as follows: if there were a sole supplier of a defined set of products or services in a defined geographical area, would that 'hypothetical monopolist' find a small but significant (and permanent) price increase (say 5-10%) profitable? If so, then a relevant market can be defined for competition and regulatory purposes. The logic is that, if such a price increase was profitable, then other products or services and other geographical areas would not provide a competitive constraint on the set of services and geographical area under examination.

1.8 To apply the test, one starts first with the narrowest set of services and geographical area. Gradually widen the set of products and the geographic area and if the answer to the above question remains in the affirmative, then the supplier is dominant. The reason why a small but significant price increase might not be profitable is that the hypothetical monopolist could lose a sufficiently large volume of sales because of demand-side or supply-side substitution or potential competition or all three sources of competitive constraint.[37]

1.9 To the extent that there are products or services with similar functionality, quality and price, demand substitutability usually imposes the greatest constraint on a 'hypothetical monopolist'. Supply substitutability and potential competition are usually less immediate as they generally take

36 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)

37 For a comprehensive discussion of market definition and dominance see the UK telecommunications regulator's document on *The Application of the Competition Act in the Telecommunications Sector*, January 2000. The document may be downloaded from OFTEL's Web site at http://www.oftel.gov.uk/competition/cact0100.htm.

effect with a significant lag. These three constraints are discussed in turn below.

Demand-side substitution

1.10 Demand-side substitution occurs when the price of the 'hypothetical monopolist' increases and consumers substitute other service(s) for the service being examined. If sufficient consumers behave in this way, even if all consumers do not, the price increase would be unprofitable. In other words, if the cross-price elasticity were positive and significant, the price increase would be unprofitable.

1.11 The cross-price elasticity of demand-side substitution gives the sensitivity of the demand for one service (say Y) in response to a change in the price of another service or basket of services (say X). The value of the cross-price elasticity of demand for a product or service may be zero, negative or positive. If the cross-price elasticity is zero, there is no relationship between the demand for X and Y. That is, a change in the price of X does not affect the demand for Y. If the cross-price elasticity is negative, the services are complements. That is, an increase in the price of X results in a decrease in the demand for Y. A positive cross-price elasticity suggests that the demand for Y increases as the price of X increases. This is the case where X and Y are substitutes. That is, a positive cross-price elasticity reflects demand-side substitution.

1.12 The existence of substitutes, i.e. goods with positive cross price elasticity of demand, indicates that there are constraints to the price setting behaviour of the 'hypothetical monopolist'. Thus, if there are two local loop access providers (one via cable from the incumbent voice telephone provider and the other via a subscriber television (STV) operator), to the extent that the quality (inclusive of reliability and security) and functionality of the services are the same or similar, the pricing of one service should constrain the pricing of the other[38]. Therefore, a small, but significant increase in the price of voice telephony access from the incumbent is likely to result in an increase in the demand for the voice telephony access from the STV operator (assuming that the switching costs are low). Within this scenario, if the cross price elasticity is sufficiently large, subscribers could switch to the substitute access provider in sufficient numbers so that the imposition of a price increase on X is unprofitable for the 'hypothetical monopolist'. It follows that local loop access from the STV operator should be included in the relevant market for local loop access to voice telephony,

[38] This example assumes that there are no cross-subsidies.

since it is a potential constraint on the price setting behaviour of the incumbent's access service.

Supply-side substitution

1.13 Supply-side substitution refers to the extent to which suppliers, other than those offering the product being examined can offer the same or similar products within a reasonable time period without incurring significant cost. In response to a non-transitory price increase by the 'hypothetical monopolist', supply-side substitution can be a major constraining influence on the pricing behaviour in the relevant market.

1.14 The easier it is for alternative suppliers to make substitute products available in sufficient quantity and within a relatively short time period, the greater the constraint on the pricing behaviour of the 'hypothetical monopolist'. If it is difficult to switch supply in a reasonable time period at sufficiently low costs, these services should be excluded from the definition of the relevant market.

Potential Competition[39]

1.15 The extent to which potential competition is taken into account depends on the analysis of the extent of entry barriers. If barriers to entry are insignificant, then potential competition imposes a significant constraint on the 'hypothetical monopolist'.

Geographic Market

1.16 In defining what is the relevant market, the relevant dimensions are not only the products or services and potential suppliers but also the geographic boundary of the market. This may be defined in terms of the entire country or a region within a country. The geographic boundaries of the relevant market are defined by the extent to which the product or products of rival suppliers at different geographical locations can impose competitive constraints on the pricing behaviour of firms operating in the relevant market.

[39] Pressure exercised upon incumbent firms by the possibility that new or existing firms will enter a specific market [is referred to as potential competition]. New entrants may be attracted by above normal profits made in this market by incumbent firms, possibly as a result of weak competition. Additional firms entering the market will increase the overall quantity supplied with the effect that prices fall and above normal profits disappear. Thus, the possibility of market entry has a certain "disciplinary effect" on the behaviour of incumbents. However, the threat of potential competition is relatively small when entry barriers are high. See http://europa.eu.int/comm/competition/general_info/t33.

Time Dimension of the Market

1.17 In assessing the extent of the market, the OUR is also willing to examine the time dimension of the market to the extent that potential competition is considered, and the global telecommunications market trend is taken into account. However, "potential products" are not considered in the definition of the relevant market. This is due to the fact that dominance is assessed at a particular point in time. If a telecommunications carrier or service provider is declared dominant today, at any point in the future, that firm may apply to the OUR to be declared non-dominant should new substitutes become available.

Determination of Dominance

1.18 After defining the relevant market, the next step is to assess whether any supplier is dominant. According to Section 19 of the Fair Competition Act of 1993, "… an enterprise holds a dominant position in a market if by itself or together with an interconnected company, it occupies such a position of economic strength as will enable it to operate in the market without effective constraints from its competitors or potential competitors."

1.19 The assessment of dominance should consider factors such as market share, barriers to entry, buyer power, prices and profitability, and vertical relationships. Each of these is discussed in turn below.

Market share and Market Concentration

1.20 Market share or the firm's share of sales in the relevant market is useful in the assessment of dominance. This is so since market share and the degree of concentration are important structural indicators of dominance. However, it is important that these indicators are used in conjunction with other factors, as by themselves, they could be misleading measures of market dominance. An entity with substantial market share in the relevant market could be constrained in its price setting behaviour due to the fact that there are low entry barriers. In cases where a firm has a small market share, it is unlikely to hold a dominant position in the relevant market. The extent to which market shares imply dominance depends on effectiveness of existing competition, the level of barriers to market entry, and the behaviour customers.

1.21 In measuring the degree of concentration, the OUR will adopt the Herfindahl-Hirschman Index ("HHI"). This index is a statistical measure used in industrial economics and adopted by many anti-trust and regulatory authorities in determining the degree of monopoly power in a relevant market[40].

Barriers to Entry[41]

1.22 The existence of dominance in a market is largely a function of the ease with which potential competitors may enter the relevant market and compete effectively against the incumbent(s). In telecommunications entry is very frequently restricted by the availability of licences to compete against the incumbent. For example, under the Telecommunications Act C&WJ enjoyed a three-year monopoly for international telephony until February 2003. But even in markets in which entry is not barred by legal restrictive arrangements, there may be economic barriers, which deter entry. Economic barriers to entry may be derived from the incumbent's advantage, for example customer inertia, the large sunk cost of building a telecommunications network, cost to the consumer of switching from the incumbent service provider (SP) to a competing SP, uncertainty of new entrant's service quality, and unfair access and/or interconnection charges for entrants to incumbent's networks. Incumbency advantages also arise through control over "bottleneck" facilities. Additionally, the finite nature of the spectrum places a restriction on the number of entrants in the mobile telephony business and other markets requiring the use of wireless technologies.

Buyer Power

1.23 Buyer power is the ability of a buyer to constrain the pricing behaviour of the 'hypothetical monopolist' in the relevant market. The buyer's constraining influence is strongest where the buyer can switch between suppliers easily and where the seller invested in assets specific to that buyer. This is particularly so when there is no alternate use for such assets.

40 For a full discussion on the HHI, see http://www.usdoj.gov/atr/public/guidelines/horiz_book/15.html.

41 Extract form the OUR's consultative document, "Dominant Public Voice Carriers", March 2000.

Behavioural Factors Associated with Dominance

Pricing Behaviour and Profitability

1.24 The process of price formation can be used as an indication of the degree of competition in the relevant market. The pricing behaviour and the associated level of profitability of a dominant firm can influence the profitability of other firms in the relevant market. If a firm is able to make sustained super-normal profits[42], this suggests that it holds a dominant position in the relevant market. Within this context, it is necessary to examine the way in which prices are formed. This might include:

* Predation: "The acceptance of losses in a particular market which are deliberately incurred in order to eliminate a specific competitor, so that super-normal profits can be earned in the future, either in the same or other markets."[43] One method by which predation could be carried out is through excessive discounting. This type of pricing behaviour should be minimized with the imposition of the OUR's regulatory system of accounts on dominant carriers and service providers, and the introduction of competitive safeguard rules in Phase III of the Liberalization Process.

* Excessive pricing: The flip side of predation is excessive pricing relative to the cost of the product or service. This could be attributed to a dominant position in the relevant market. Maintaining high prices and profit margins over a sustained period of time without attracting entry would suggest that competition in the relevant market is constrained and the particular entity would in fact be in a dominant position.

* Parallel pricing: Simultaneous price movements for competitors over time could be indicative of a dominant firm in the relevant market. The OUR will presume that this is not indicative of a dominant position if there is a rationale for the simultaneous variation of prices.

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42 Profit in excess of the minimum return required to compensate investors for the level of risk in the relevant market

43 Myers, Geoffrey (1994), *Predatory Behaviour in UK Competition Policy*, Research Paper 5.

Supply Behaviour[44]

1.25 If a firm (service provider (SP) or carrier) consistently refuses to supply actual or potential customers (inclusive of other carriers or SPs) with bottleneck products/services without reasonable justification, or reduce its service quality, with negligible impact on its market share, this may suggests that the firm is in a dominant position in the relevant market. Such behaviour include:

1.26 Refusal to supply services essential to any-to-any connectivity: The existing C&WJ RIO should serve to limit behaviour that might fall in this category. However, to the extent that such behaviour exists, this will constitute evidence of a dominant position and abuse thereof. This behaviour is likely to limit competition by restricting entry or retarding effective competition.

* Refusal to share scarce physical resources: Examples of these resources could include duct space and floor space in local exchanges. However, the OUR will only recognize such resource as scarce if they are impossible, uneconomical or not feasible to reproduce. The owners/operators of these resources would be in a dominant position and a refusal to supply the same could constitute an abuse of dominance.

* Reduction in the quality of supply: The ability to reduce the quality of supply, without a corresponding reduction in price, could be viewed as evidence of the firm's ability to act independently of its competitor. This would suggest that the firm is in a dominant position.

Vertical Relationships[45]

1.27 In analysing market power the vertical integrated nature of firms operating in the industry needs to be taken into account. Vertical integration exists where a firm operates at both the downstream and upstream segments of an industry. For example, the incumbent provides fixed network interconnection services to mobile entrants and simultaneously competes with those entrants in retail markets for mobile services. If dominant in the upstream market, the vertical integrated firm may be able to frustrate

[44] The supply behaviours identified in this section are similar to those listed by the Malaysian Communications and Multimedia Commission, *Guidelines on Dominant Position in a Communication Market*, RG/DP/1/00(1).

[45] See the OUR's consultative document, "Dominant Public Voice Carriers", March 2000.

downstream market entrants. Vertical integration need not constitute a barrier to entry since such firms may have low market share and there might not be any regulatory, economic or technological barriers to entry at any level of the industry. However, vertical relationship is important if it is coupled with dominance in an upstream market (for example), since this can be used in an anti-competitive manner to extend dominance to a downstream market.

CONCLUSION

1.28 This appendix constitutes the OUR's two-step approach to the determination of dominance. The process as defined is intended to form the analytical framework in which evidence is collected, collated, analysed and interpreted for the purpose of assessing dominance in telecommunications markets. Although the guidelines outline the factors that ideally should be assessed, the analysis of dominance is often constrained by the actual availability of evidence.

1.29 The two-stage methodology firstly identifies the relevant market. This involves a definition of the product and geographic markets. The second stage involves an assessment of the economic strengths of the firm being assessed and its ability to operate without effective constraints from competing suppliers and consumers within the relevant market.

1.30 The Guidelines constitute the framework for the OUR's assessment of dominance in Jamaican telecommunications markets. More specifically, the methodology will be used in the identification of public voice carriers and service providers that are dominant, and consequently, to be regulated as such.

1.31 If declared dominant, a telecommunications provider will be subject to rules made by the OUR in relation to a prescribed system of regulatory accounts, pursuant to Sections 4(5) and 30(2) of the Act. Further, dominant carriers or service providers will be subject to other obligations as per the Act.

1.32 In cases where the telecommunications provider wishes to be declared non-dominant, the provider must file with the OUR, an analysis based on these guidelines along with supporting information. An application for a declaration of non-dominance will be subject to public consultation before the Office makes a determination.

ACRONYMS

ACCC	-	Australian Competition and Consumer Commission
CATV	-	Cable Television
C&WJ	-	Cable and Wireless Jamaica
CPE	-	Customer premises equipment
CPVC	-	Competitive Public Voice Carrier
DC	-	Domestic Carrier
DSL	-	Digital Subscriber Line
DQ	-	Directory Enquiry
DVSP	-	Domestic Voice Service Provider
EC	-	European Commission
FTF	-	Fixed to Fixed
FTM	-	Fixed to Mobile
FTN	-	Fixed Telephone Network
HHI	-	Herfindahl-Hirschman-Index
IAA	-	Interconnect Access Area
IPVC	-	Incumbent Public Voice Carrier
LLU	-	Local Loop Unbundling
NRA	-	National Regulatory Authority
OFT	-	Office of Fair Trading (UK)
OFTEL	-	Office of Telecommunications (United Kingdom)
OUR	-	Office of Utilities Regulation

PBX	-	Private Branch Exchange
PSTN	-	Public telecommunications Network (fixed line and mobile networks)
RIO	-	Reference Interconnection Offer
SP	-	Service Provider
SSNIP	-	Small but Significant Non-transitory Increase in Price
STV	-	Subscriber Television
WLL	-	Wireless Local Loop

GLOSSARY OF TERMS

Barrier to Entry	-	Economic and technical factors that prevent or make it difficult for firms to enter a market and compete with existing suppliers.
Carrier Pre-selection	-	This is the situation where a subscriber keeps their telephone connection to the incumbent operator but has the ability to pre-select the carrier of their transit services.
Determination Notice	-	This constitutes the final position of the Office in relation to an issue.
Herfindahl-Hirschman-Index	-	The "HHI" is a commonly accepted measure of market concentration. It is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, for a market consisting of four firms with shares of thirty, thirty, twenty and twenty percent, the HHI is 2600 ($30^2 + 30^2 + 20^2 + 20^2 = 2600$). The HHI takes into account the relative size and distribution of the firms in a market and 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. www.usdoj.gov/atr/public/testimony/hhi.htm
Number Portability	-	The ability of customers to change SP without changing their telephone number.

Public Switch Telephone Network (fixed line network)	-	The telecommunications network of the major operator(s), on which calls can be made to all customers on the said network.
Service Providers	-	Those who provide telecommunications or related services to the public. They may have their own telecommunications network or use the network provided by others.
The Office	-	The Office of Utilities Regulation