Office of Utilities Regulation

Universal Service Obligation in Telecommunication

A Consultative Document

OUR

OFFICE OF UTILITIES REGULATION

May 2002

Abstract

Comments From Interested Parties

Persons who wish to express opinions on this Consultative Document are invited to submit their comments in writing to the OUR. Comments are invited on all aspects of the issues raised; especially the specific questions identified in Chapters 2 through 5. Respondents may opt not to provide answers to all the questions listed - failure to do so will in no way reduce the consideration given to the responses.

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

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Kingston 10
Fax: (876) 929-3635
E-mail: dsullivan@our.org.jm

Responses are requested by July 15, 2002. 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 (or a link included where the respondent wishes to post its response on its own website).

In order to facilitate the broadest possible participation in the consultation process the OUR may arrange appropriate forums where the issues can be discussed.

Comments on responses

As in all the OUR's consultation periods, there will be a specific period for respondents to view other (non-confidential) responses and to make comments on them. The comments may take the form of either correcting a factual error or putting forward counter-arguments. Comments on responses are requested by August 15, 2002.

Arrangements for viewing responses

Those who wish to view the responses that the OUR may receive should make an appointment by contacting Lesia Gregory at the OUR by one of the following options:

Telephone: (876) 968 6053 (or 6057-8)
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 office at:

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

The individual may request photocopies of the responses which will be provided at a price which reflects the cost to the OUR of using its photocopying facilities.

Timetable

The timetable for the consultation is summarized in the table below. This includes an indicative timing for the Determination Notice.

Summary of timetable on consultation

Event	*Date*
First consultation	May 15, 2002
Responses to this document	July 15, 2002
Comments on responses	August 15, 2002
Second consultation	October 15, 2002
Responses to second document	December 16, 2002
Comments on responses	January 15, 2003
Determination Notice	February 28, 2003

CHAPTER ONE: Introduction

Background

1.0 The decision to liberalize the telecommunications industry came out of an agreement between the Government of Jamaica (GOJ) and Cable and Wireless Jamaica Limited (CWJ). The idea was to 'cut short' CWJ's monopoly and introduce competition in every area of the telecommunications industry on a phase-by-phase basis. Three phases were agreed on: Phase 1, from March 1, 2000 to August 31, 2001, saw the liberalization of the mobile market; resale of international voice minutes, and internet services etc. Phase 2, which immediately follows Phase 1, will last for another eighteen (18) months until February 2003. During this Phase, all licenses issued in Phase 1 in addition to others such as domestic carrier licences, resale of domestic voice minutes and STV licences can be issued. Phase 3, the final phase, begins March 1, 2003. During this period all services, including international voice telephony services, would be subject to competition. Universal service provision is expected during this Phase and thus forms part of the whole liberalization process.

1.1 This agreement between the GOJ and CWJ brought about changes in the legislations governing the telecommunications industry. On March 1, 2000 the Telecommunications Act 2000 (hereafter referred to as the Act) was passed into law. The industry was previously governed by the Telephone Act 1893; the Radio and Telegraph Control Act 1973; and the Telecommunications of Jamaica Limited (Wireless Telephony) Special Licence 1988. The Licence was issued "*by the Minister under the provisions of Section 6(1) of the Radio and Telegraph Control Act authorizing Telecommunications of Jamaica Limited to establish maintain and use radio and telegraph stations or apparatus for the purposes of wireless telephone services throughout the Island of Jamaica.*"[1]

1.2 Part VI of the Act sets out the principles governing the provisions of universal service. It outlines the obligations of a provider and also describes the minimum level of basic telecommunication services that are to be supplied by a designated provider.

Definition of Universal Service

1.3 The definition of universal service is based on three fundamental principles: *Availability, access and affordability*. Service must be available before the customer can gain access to the network. In some areas service might not be available because of several factors such as economic and social. However, if we assume availability and access then

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[1] Taken from page two of the Telecommunications of Jamaica Limited (Wireless Telephony) Special Licence 1988.

the next issue which follows is affordability. Can customers afford to pay for the service?

1.4 OFTEL refers to universal service as *"affordable access to basic telecommunication services for all those reasonably requesting it regardless of where they live."*[2] According to the International Telecommunications Union (ITU): Universal service *"refers to availability, non-discriminatory access and wide-spread affordability of telephone service. The level of universal service is statistically measured as the percentage of households with a telephone."*[3]

1.5 The OUR believes that universal service in Jamaica should follow the principles outlined above. A customer should be able to access basic telecommunication services at an affordable price regardless of his/her location. The OUR considers basic telecommunication services as those set out in Section 39(2) of the Act. It speaks to:

a) access to single line voice telephony service for every citizen where technically and economically feasible;

b) reasonable access to payphones;

c) ability to make emergency calls free of charge;

d) internet access in schools, public libraries and post offices.

Economic and Uneconomic Customers and Areas

1.6 An economic customer is person or household who can afford to pay the full economic cost of telecommunication services provided meanwhile an uneconomic customer is one who cannot afford to pay the full economic cost of the service provided. In other words, this is a customer who generates less revenue than the cost the operator incurs in serving him. Uneconomic customers are found both in economic and uneconomic areas. A customer can become uneconomic because of several reasons. One such reason is the loss of his/her job.

1.7 An economic area is an area that is considered commercially viable to serve by an operator. An uneconomic area on the other hand, is one that is not considered commercially viable to serve. An area can become uneconomic as a result of several factors. One such factor is the

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[2] Quotation from Oftel's consultative document: "Universal Telecommunications Services: A Consultative Document on Universal Service in the UK from1997 (December 1995)", page 9. http://www.oftel.gov.uk/publications/1995_98/consumer/univ_1.htm

[3] Taken from the International Telecommunications Union (ITU) and the Spanish-American Association of Research Centers and Telecommunications Companies publication: "Universal Service in the Americas", February 2000.

closure/pull out of the main employer(s) in the area. This would leave most people in the area unemployed and unable to pay their bills. Another factor is the migration of the residents. People tend to move to areas where they have easy access to social and economic opportunities. This is common among rural residents migrating to urban areas in order to 'make a better life.'

1.8 The main emphasis of this document is on the provision of service to uneconomic customers and areas since profitable customers and areas would have already been served.

The Importance of Universal Service

1.9 The full liberalization of the telecommunications industry will inevitably bring huge benefits to consumers. They will now have more choices in deciding who supply them with telecommunication services and moreover, since more companies will be competing for the consumer's dollar, they will be forced to continually increase service quality and price their products more competitively in order to retain customers.

1.10 However, not all consumers will benefit from liberalization. There are some customers and areas that companies will consider uneconomic and therefore choose not to serve. A typical company would tend to invest in markets where supernormal profits are being made or in markets that are not yet being served but have the potential to provide reasonable return on investments.

1.11 Universal service provides an opportunity for uneconomic customers and areas to get access to basic telecommunication services. Apart from direct benefits, numerous external economic benefits can be derived from the provision of universal service. As the number of customers on a network increases, so does the value to all customers of being on that network – customers now have access to a larger number of users. Also, the fact that telecommunication provides a means of communication; it can be used as an alternative to other services vis-à-vis transportation. In addition, customers can have access to telecommunication services in cases of emergency.

Objective of the OUR

1.12 The objective of the OUR is to ensure the provision of universal service to the Jamaican public as set out in the Act. The OUR will ensure that:

a) Single line voice telephony service, whether provided by fixed-line, fixed-wireless and/or mobile operations, is available to every person regardless of location. However, the Office will give due consideration to technical and economic feasibility;

b) Payphone services are reasonably accessible and affordable;

c) Free emergency call services are available to all customers;

d) Internet access in schools, public libraries and post offices are available where feasible;

e) universal service providers are compensated the net costs they incur in the provision of the service;

f) make recommendations to the Minister on issues relating to universal service;

g) adequate systems are in place to monitor the level of service and upgrade its provisions when/where necessary.

1.13 Obviously, not all of these objectives can be accomplished in the short run. Therefore, a long run approach is the preferred choice. A timetable will have to be developed to guide the smooth implementation of the programme. Currently, there are some issues that will have to be addressed before service can be realized: The number of households to be served is not known at this time and therefore an estimate of the net cost of universal service cannot be ascertained; the technology to be used has not yet been determined; a funding mechanism has not yet being established and since Jamaica is a developing country, it can be argued that the industry might not be able to finance all of these services in the short run. The trend in developing countries across the world is to start with access to payphones based on some measure whether distance from call box or number of persons per payphone, then gradually move to individual access.[4] However, given the growth in the mobile market,[5] one wonders if universal service will ever become a big issue in the future.

Purpose of Document

1.14 The purpose of this consultative document is to explore the issues associated with the provision of universal telecommunication services in Jamaica. It is worth noting that the document only seeks to promote discussion on the issues raised and is not intended to be definitive or to present final answers on any of the issues addressed. The OUR welcomes comments from the public at large but especially interest groups who will be directly affected.

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[4] See "Telecommunications Regulation Handbook", edited by Hank Intven. Paragraph 6.2.3 page 6-9 and Table 6.3, page 6-11

[5] Chapter two gives an incite in the growth of the mobile industry.

Structure of Document

1.15 The rest of the document is organized as follow: Chapters two and three give descriptions of the services to be offered by designated provider(s); chapter four explores the costs and benefits of providing universal service; chapter five addresses universal service funding; chapter six examines different criteria of choosing a service provider; chapter seven looks at other issues in universal service provision such as service to the disabled population, access deficit and rate rebalancing, directory enquiry services and monitoring and review; the document concludes with a listing of the consultation questions found at the end of each chapter.

Q1.1 Do you support the OUR's definition of universal service? Explain.

Q1.2 How do you think the process of implementation should work and what time period is more realistic? Explain.

CHAPTER TWO: Universal Services – Voice Telephony

Introduction

2.0 This chapter forms the first part of a two-part focus on basic telecommunication services, as stipulated by the Act, to be provided to potential customers. (Chapter three addresses the second part). The chapter examines issues relating to voice telephony services whether provided by fixed wireline, fixed wireless or mobile. Specifically, it looks at the current and future trends in the fixed and mobile markets; develops a model to critically analyse the prices of fixed wireline service versus those of prepaid mobile; and four voice telephony options to accommodate the low-income nature of potential users.

Single Line Voice Telephony Service

2.1 Section 39 (2)(a) of the Act provides the guidelines for the provision of single line voice telephony services across the Island. It reads: "To the extent technically and economically reasonable, *(the objective is)*[6] to promote access to single line voice telephone services throughout the Island to persons regardless of the residence or work." Clearly, every household across Jamaica should have access to single line voice telephony subject to technical and economic constraints.

2.2 However, given the fact that the designated USP will be compensated for the net costs incurred in providing the service, the issue of economic feasibility might not constitute a major problem. Notwithstanding this, some might argue that providing single line to every household might be too costly and therefore should not be considered. For example, in areas where households live relatively far apart (isolated areas), the net cost of providing single line service might be too high thus rendering it infeasible. An alternative would be to provide public telephones to these communities.

2.3 Technical feasibility for the most part will depend on the geographic structure of the Island. Given the mountainous structure of the Island, it would seem to suggest that if wireless, (fixed or mobile), operations were implemented, more than the normal number of towers would be needed to provide reliable service.

2.4 The Act does not specify the means by which voice telephony should be provided – whether by fixed (line or wireless) or mobile operations. Therefore, the Minister or the Office, (on recommendations to the Minister), reserves the right to determine which method(s) would be best suited for the provision of universal service.

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[6] Words in parenthesis added.

2.5 The provision of universal service throughout the world, in most cases, has been designated to incumbents. These companies are generally the only fixed operators and the only organizations with a reasonable enough network to provide service to the public (at least in the first phase of the liberalization process).

Fixed vs. Mobile Services

2.6 At present, CWJ is the only operator providing fixed telephone services on the Island although other fixed telecom licences have been granted. The mobile market is quite different as there are currently two operators competing with CWJ for customers.

2.7 The proliferation of mobile phones on the Jamaican landscape is more than overwhelming. The number of subscribers has increased over 440% in just two years (end of December 1999 to end of December 2001). The growth rate for the year 2000 was 112% over the previous year. Interestingly, the rate for the following year surpassed the 150% mark. This approximates to an average yearly growth rate of 134% over the period. It is worth noting that this was realized despite the unfavourable performance of the economy during the same period. These unprecedented changes in the sector have propelled the country's penetration rate to over 40%; an increase of over 80% compared to the figure for the end of 1999. The growth rate for fixed line service remains constant at approximately 4% each year for the two year period. Jamaica has now joined a growing list of countries that have been reporting more mobile phones than fixed line. The ratio of mobile phones to landline in Jamaica, as at December 2001, is approximately at 1.255:1. This ratio is expected to increase given the trends in the mobile market.

2.8 One explanation for the significant increase in the mobile market is the change in the pricing policy of operators. A calling party pays (CPP) principle was introduced which replaced the receiving party pays principle. (It is presumed that more customers are on the CPP plan). This scheme is facilitated by a prepaid calling system with no access charge. To make calls, a customer is only required to purchase a calling card and transfer the amount on the card to the phone then dial. The introduction of competition in the market is another reason for this extraordinary growth. Competition has brought about choices and in some cases, an opportunity for people to access telecommunication services.

Analysis of the Price of Fixed vs. Prepaid Mobile Services

2.9 The following model gives an analysis of the cost of owning a fixed line phone vs. a prepaid mobile. The objective of this analysis is to determine which method is more economical in the provision of universal service to the customer. The assumptions used in this analysis are as follow:

1) the prices shown in the tables below, (Tables 1 and 2), are based on average prices in the sector;

2) the consumer is allocated a fixed number of minutes for the month;

3) consumer can distribute minutes equally or based on price of a call;

4) the fixed line access charge is currently J$320,[7] however rebalancing is imminent;

5) to account for the per second dialing of DIGICEL, the model assumes that each call made is terminated at one minute intervals.

2.10 The model is expressed in the following form:

$MC = W_1*M_1 + W_2*M_2 + W_3*M_3$

$FC = W_1*F_1 + W_2*F_2 + W_3*F_3 + AC$

Where:

MC = the total monthly charge to a customer with a prepaid mobile phone;

FC = the total monthly charge to a customer with a fixed line phone;

M_1 = the average per minute charge for a call from a prepaid mobile to another mobile phone on the same network;

M_2 = the average per minute charge for a call from a prepaid mobile to another mobile phone on a different network;

M_3 = the average per minute charge for a call from a prepaid mobile to a fixed line phone;

F_1 = the average per minute charge for a call from a fixed line to another fixed line (intra parish calls);

F_2 = the average per minute charge for a call from a from a fixed line to another fixed line (inter parish calls);

[7] The model considers only the standard fixed line package. The low user package is ignored to facilitate easier computations.

F_3 = the average per minute charge for a call from a fixed line phone to a mobile;

AC = monthly access charge on the fixed network;

W_i = weight assigned to each call/minute. Note i = 1,2,3.

Table 1: Average Price of Calls From a Prepaid Mobile Phone

	Mobile-to-Mobile	To Other Mobile	Mobile-to-Fixed
Average Price	7.67	15.48	8.83

Table 2: Average Price of Calls From a Fixed Line Phone

	Fixed-to-Fixed (Intra)	Fixed-to-Fixed (Inter)	Fixed-to-Mobile
Average Price	0.21	0.73	8.33

Equal Distribution of Minutes

2.11 If we assume that the consumer distributes minutes equally, then the average per minute price of a of call from a prepaid mobile phone would be approximately J$10.55 meanwhile from a fixed line phone the charge would be J$3.06. If we also assume that a customer is allocated thirty minutes (30) per month, that is, an average of one minute call per day, the average bill for the customer with a prepaid mobile phone will be J$316.50 meanwhile that of a customer with a fixed line phone will be J$411.80 (including access charge of J$320.00).

2.12 From the example above, it is clear that it would be more cost effective for the customer to own a prepaid mobile phone rather than a fixed line. However, as the number of allocated minutes increase, fixed line service become more economical. In fact, the break-even point is between forty-three (43) and forty-four (44) minutes. Any minutes allocated above this point would be more costly for a prepaid mobile user compared to a landline customer. For example, if fifty minutes were allocated, the mobile customer would be billed J$527.5 and the fixed line customer would be required to pay J$473.00.

Minutes Based on Price

2.13 With equal weights, the consumer values all calls equally; however, if we assume the consumer's decision to make a call is based on the price of that call compared to another, then the weights will change. Assuming all other things remain equal, the rational customer will make fewer calls to higher costs phones. An analysis of the prices in tables 1 and 2 indicate that the customer with the mobile phone will value his calls according to the following weights: 0.42 for mobile to mobile; 0.21 for calls to other mobile; and approximately 0.37 for calls to fixed phones. The customer

with fixed service will value calls as follow: 0.78 for fixed to fixed (intra parish) calls; 0.2 for fixed to fixed (inter parish) calls; and 0.02 for fixed to mobile calls.

2.14 If the analysis in paragraph 2.13 above holds, then the average per minute charge from a prepaid mobile would be approximately J$9.74. The charge from a fixed line would be J$0.48. If we further assume that the customer is allocated thirty (30) minutes per month, then the average bill for a prepaid mobile user would be J$292.20; the fixed line customer would be required to pay J$334.40. As the number of minutes increase, the cost of owning a mobile phone become more expensive relative to a fixed line. (The break-even point is between thirty-four (34) and thirty-five (35) minutes).

2.15 This method of valuing minutes produce better results for the consumer than the one that assumes equality. It is obvious that the consumer will get more minutes for less, that is, the overall cost per minute is less expensive.

Rate Rebalancing

2.16 The examples above are based on the assumption that fixed line rates (monthly rental) remain constant. However, what will happen if rates were rebalanced to reflect costs? There is no doubt that the situation will change when these changes are effected. Rate rebalancing will become necessary when the market is fully liberalized. The current situation is that revenues from international traffic are used to fund local services.

2.17 Rebalancing of fixed line rates will make landline less favourable compared to mobile services. For example, if line rental increases to J$400.00, mobile would remain the less expensive of the two options up to fifty-three (53) minutes under the equality assumptions. Under the pricing assumption, mobile would remain the better of the two up to forty-three (43) minutes. From this analysis, it is clear that as the monthly rental increases, relative to mobile rates, it becomes more cost effective to use mobile phones.

Competition in Mobile Market

2.18 As the competition in the mobile market intensifies, consumers can expect improved service and lower prices. This could mean that mobile will eventually become a closer substitute for fixed phones. Substitution occurs where the increase in the price of a product results in an increase in demand for another product. In other words, the utility the consumer obtains from either product is relatively the same. So if the price of one increases the consumer will buy less of that product and more of the other.

2.19 As rate rebalancing progresses, the price of fixed line service will become relatively more expensive than mobile. This will generate increase demand for mobile services. Price may not be the only factor that will drive the increase in demand for mobile. The fact the mobile phone provides flexibility, even if the price remains relatively higher than fixed line, consumers would be willing to pay the extra cost because of this added advantage. At present, the Office does not have any data on the number of persons or households in possession of both fixed and mobile phones but the presumption is that this figure is high.

Fixed Wireless

2.20 Fixed wireless is another option that can be used to provide universal service. Although the technology is present on the Island, it is not widely used. This technology is superior to fixed line in that it is less costly to deploy and operate in sparsely populated areas. However as the density of the population increases, its use becomes inferior to cables.

Voice Telephony Options

2.21 Affordability is one of the main reasons for universal service provision. Companies are more obliged to serve customers who can afford to pay for the service being provided. It follows therefore that people who have affordability problems will remain on waiting lists longer than customers who can afford to pay. The problem therefore is to find ways to get these people on the public network and keep them on. In order to accomplish this, the OUR is suggesting a number of schemes that will facilitate an environment that may be favourable to both the customer and the company. Indeed, the objective is to provide every individual access to the telecommunication network at an affordable rate. The schemes the OUR is currently reviewing include, but limited to:

a) Selective Call Barring and Call Barring;
b) Limited Minutes
c) Prepaid Scheme
d) Low User Package

Selective Call Barring and Call Barring

2.22 Restrictions can be imposed on the customer's calling patterns. Calls that attract a high price can be barred so as to control the customer's bill. In order to dial these numbers, the customer would need to use a calling card. Also, there could be a total barring of direct dialing except for calls to emergency services. The customer would then have to use a phone card to make outgoing calls. This scheme would allow incoming calls and a fixed monthly access charge.

Limited Minutes

2.23 A system could be implemented where the number of minutes allocated to a customer per month is restricted. After the consumer has consumed this amount he will not be allowed to dial direct from his phone; a phone card would have to be used instead to make outgoing calls. The model described above assumes restrictions in the number of minutes allocated to the subscriber. If the average price of calls can be determined and the consumer is allocated a fixed number of minutes per month, then it would be quite easy to estimate the consumer's monthly bill. The scheme would also attract a monthly fixed charge if applied to fixed service.

Prepaid Scheme

2.24 A prepaid scheme, similar to the one used in the mobile market, could be introduced in the fixed line market providing this option is chosen. Basically, the scheme would provide consumers with free access to emergency services such as fire and police. In addition, there would be no monthly fixed charge and outgoing calls, whether local, national or international, could be facilitated by the use of prepaid calling cards.

2.25 The scheme would facilitate calling party pays principle hence the customer would not pay for incoming calls. Another highlight of this scheme is that operators could be given the option of setting rates subject to the approval of the OUR. These rates could be set higher than normal to account for the non-existence of a fixed monthly charge.

2.26 One of the advantages of this scheme is that there is no monthly bill and the customer has total control over the amount he spends on telephone services each month.

Low User Package

2.27 This scheme is currently being used by CWJ in its fixed line division. It is designed for customers who need access but do not make a lot of calls compared to the average user. The objective is to encourage the customer to make fewer calls in return for a lower line rental charge. Essentially, the customer has access to all services such as emergency, local, national and international. Local and national minutes are priced relatively higher than normal but the customer is compensated with a lower monthly access charge. However, international rates are the same as that of the average customer.

2.28 One of the disadvantages with this scheme is that the customer would be required to constantly keep check of the time spent on the phone since after a specified number of minutes[8] his charges would start increasing at

[8] Under the current lower user pricing scheme for fixed line customers, the breakeven of minutes, providing the customer makes only intra parish calls, is approximately 818 and if the customer makes only inter parish calls, it's 403.

a faster rate relative to the standard user. However, it might be argued that if the customer is well informed and disciplined, the scheme might not be burdensome.[9]

Q2:1 Which technology should be used to provide single line voice services? Explain.

Q2:2 Do you support the idea of limited minutes to customers and based on the model discussed, are there any other feasible methods of distributing minutes? Explain.

Q2:3 What are your views on the voice telephony options proposed by the OUR? The Office also welcome comments on other options that could be considered.

[9] More information on the Low User Scheme can be found in the OUR consultative document entitled: "Rebalancing Telephone Prices."

CHAPTER THREE: Universal Services – Payphones, Internet and Emergency Services

Introduction

3.0 This chapter addresses the second part of the two-part discussion on universal services. It examines issues relating to payphones provision and accompanying rate structures; internet service provision in schools, public libraries and post offices. The chapter also looks at the importance of providing free emergency services to the consumer.

Payphone Services

3.1 The Act provides for reasonable accessibility to payphones as one of the requirements for universal service. As with other services, operators will assess the commercial viability of installing calls boxes. In areas where the scope of profitability is low or non-existent, they would generally not serve. However, where potential profitability exists, the operator would willingly serve.

3.2 The provision of call boxes will play a critical role in the universal service development programme. In sparsely populated areas it might more be economically reasonable/feasible to provide call boxes rather than single line access. Providing payphones are within reasonable limits from peoples' homes, then it might be justifiable to pursue this option. Also, in the initial stages, public phones can be the starting point for access to telecommunication services. As the industry develops and more resources become available, single line access could be made more available to households.

3.3 Several developing countries have used public phones as the starting point for universal service. For example, Bhutan, Comoros, Ethiopia and Madagascar opt for payphones in every village. Others such as Costa Rico, Kenya and Lesotho requested that public phones should be within walking distance from homes – 1 km for example. Still others use a different method. Service is provided based on the size of the population in an area. Cuba, for example as suggested that all villages and communities with more than 500 persons should have access to telephone services. Iran suggested that all villages with a population of over 100 individuals should have access to telecommunication facilities. [10]

Public Payphone Rate Structure

3.4 The OUR will set the rates for payphones designated for universal service provision. Rates will be set based on affordability of persons in these uneconomic communities. Two rate structures will be discussed in the paragraphs below: Flat rate and proportional rates.

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[10] See "Telecommunications Regulation Handbook", edited by Hank Intven. Table 6.3, page 6-11.

Flat Rate Structure

3.5 Consumers could be charged a flat rate to use payphones designated for universal service purposes. This would be applicable for all calls within the Island regardless of location of the caller, the type of phone being called (whether fixed or mobile), the time of day and the termination point of the call. This is necessary since the cost of providing service may vary from one area to the next. Also, the consumer would be assured that if he migrates from one uneconomic community to another; the rates will remain the same. If the operator(s) incur any net cost then compensation would be provided through the universal fund.

Proportional Rates

3.6 Another option that could be explored is one where the customer is required to pay a fixed proportion of the price of the call made. Note that the customer would not pay the full economic cost of the call but instead of paying a flat rate for all calls, he would pay according to the cost of the call made. For example, it is accepted, at least at this time, that the cost of making a call from a payphone to a fixed line is cheaper than calling a mobile phone. Therefore based on this option, the customer would pay more to make a call to a mobile phone than a fixed line.

Internet Access

3.7 *"The use of the internet has grown rapidly over the past few years with computer use and access to the internet becoming part of people's daily lives. It is believed that the internet will become increasingly similar to the use of general home appliances and that consumers will eventually access the internet at least once a day."*[11]

3.8 According to a study by Computer Industry Almanac[12], the current estimated number of internet users worldwide is 550 million and this figure is expected to more than double by the end of the year 2005. That is equivalent to over 1.1 billion users! By 2007, the figure is expected to increase to almost 1.5 billion. It is also predicted that the use of wireless access to the internet will surpass the usual wire line. In addition, wireless access will increasingly substitute for desktop access in developed economies meanwhile the rate of substitution in developing countries will move at a slower rate. By far the internet is one of the fastest growing telecommunication services today (mobile probably the fastest). It has evolved into what may be referred to as a "must have" for every household.

3.9 E-commerce is one of the fastest growing applications of the internet today. According to a study conducted by Taylor Nelson Sofres

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[11] Adapted from: http://adcentre.fairfax.com.au/research/whyonline.htm

[12] See http://www.allnetdevices.com/wireless/news/2002/03/22/wireless_becoming.html

Interactive[13] in 2001, the number of users worldwide using the internet for shopping have increased by 50% over the previous year. The study also shows that approximately 27% of all users worldwide are using the internet for direct or indirect shopping. The United States is the biggest market for online shoppers with over 33 percent of all users.

3.10 Section 39(2)(d) of the Act stipulates that internet service should be made available to schools, libraries and post offices across the Island. Currently some of these facilities have been equipped with computers and internet access. Unfortunately, many are still without. The objective is to equip all of these facilities with internet access over a reasonable period of time.

3.11 The OUR is of the view that internet service should be provided using the most efficient technology available, not just for today but for the future. According to one of the studies cited earlier, wireless technology is probably the fast growing means of providing internet access and it seem to suggest that this technology will be the most widely used in the near future.

Background to the Education System

3.12 The education system in Jamaica is comprised of four different levels: Early Childhood, Primary, Secondary and Tertiary. Early Childhood accounts for students between the ages of 0 – 5; 6 – 11 for primary; 12 – 18 for secondary and 16 and over for tertiary. During the 19999/2000 school year, 135918 students were registered in early childhood educational facilities; 309808 in primary schools; 226384 in secondary; and 27459 in tertiary institutions.

Table 3: Information on the Education System in Jamaica for 1999/2000

	Early Childhood	Primary	Secondary	Tertiary
Number of Schools	10633	-	644	12
Number of Students	135918	309808	226384	27459
Number with Internet Access	-	-	-	-

Source: Economic and Social Survey Jamaica 2000. Published the Planning Institute of Jamaica.

Internet in Schools

3.13 Since tertiary level institutions are better able to provide internet access to their students and given the fact that the early childhood group might not possess the necessary skills to work with computers during their tender years, more emphasis should then placed on the provision of service at the primary and secondary levels. It is students at these levels that are mostly in need of service at this time.

[13] See http://cyberatlas.internet.com/markets/retailing/article/0,,6061_793821,00.html

3.14 Enormous benefits can be achieved from the provision of internet service in schools. Students can benefit from online research, distance learning, access to virtual libraries just to name a few.

Tariff Packages for Schools

3.15 CWJ and the Ministry of Education currently have a programme in place to provide internet access to schools across the Island. At the moment the Office does not have enough information on this arrangement. However, the OUR is of the view that any proposed tariff package for schools must take into consideration the views of these institutions. Also, given the nature of operation of schools (fixed budgets), the preferred tariff arrangement would be one comprising mostly of a fixed component. The OUR is also proposing that internet service provision to schools should be provided by competitive means to ensure that schools will get the best value for their money. Comments are invited from the Ministry, individual schools, and the major players in the industry outlining their preferred tariff structure(s).

Internet at Post Offices and Public Libraries

3.16 The Ministry of Industry, Commerce and Technology in conjunction with CWJ is currently working on a programme to provide public internet access facilities in post offices and libraries across the Island. To date, 28 post offices are now providing the service. The Office does not have any information on the number of libraries presently providing the service, however it is presumed that it is not widespread at this time. As in the case of schools, the also is of the view that the service should be provided on a competitive basis. Also, the OUR welcome comments on the appropriate tariff structure(s) to be applied.

Table 4: Information on Post Offices and Libraries Across the Jamaica

	Post Offices	Public Libraries
Total	308	645[14]
Number with Internet Access	28	-

Emergency Services

3.17 Emergency services form part of universal service provision. All telephones whether fixed line, fixed wireless, mobile or payphone should have the capability of providing access to emergency services. In addition, the Act specifically states that this service should be free to the customer.

3.18 This is a vital part of the telecommunication service that everyone should have access to. This could save lives, time and money. An elderly person

[14] According to the Economic and Social Survey Jamaica 2000, page 22.17. Published the Planning Institute of Jamaica.

who lives alone in a remote village can easily pick up her phone and dial the police if there is a break-in or she can easily call for the fire service if there is a fire or the ambulance if there is a medical emergency.

Quality of Service

3.19 The quality of the service is just as important as having access. The OUR is proposing that the level of service provided to universal service account holders should be similar to that supplied to regular customers. There should be no distinction as the objective is to ensure that every citizen have equal access to the telecommunications system.

Q3:1 How do you think the provision of payphones boxes should be approached?

Q3:2 What are your views on the rate structures proposed for payphones?

Q3:3 Do you support the view that more emphasis should be placed on the provision of internet services at the primary and secondary levels of the education system? Explain.

Q3:4 What tariff packages should be implemented for schools, post offices and public libraries?

CHAPTER FOUR: Costs and Benefits of Universal Service

Introduction

4.0 Net costs calculation is an important element in universal service provision. This chapter examines the composition of these costs. Specifically, it addresses the costs and some of the possible intangible benefits an operator would incur from the provision of service.

Defining Universal Service Cost

4.1 Under normal business conditions, a firm will supply services to customers who can afford to pay. The situation is different with universal service provision as the company is required to supply services to unprofitable customers. The requirement imposes a cost on the service provider. This cost is referred to as universal service cost. It is essentially the difference between the avoidable costs and the revenues foregone in fulfilling the obligation.

Cost of Providing Universal Service

4.2 The cost of providing universal service is made up of two major components: Avoidable costs and revenues foregone. Both of these components are discussed below.

Avoidable Costs

4.3 The principle of avoidable cost is based on the concept of "avoidability". Operators make commercial decisions to serve customers and areas where they can recover their investments over a reasonable period of time and of course, the potential for continued business exists in the foreseeable future. Therefore, companies will not invest in unprofitable ventures unless there is an imposed obligation. Avoidable cost is the additional cost the firm incurs in providing service to these customers and areas. In other words, these are costs the operator would have avoided if the obligation were not imposed.

4.4 Avoidable costs include, but are not limited to the following:

a) Capital costs including switching and transmission costs;

b) Operating costs including sales and marketing and employee costs;

4.5 To serve uneconomic customers and areas, the company may have to expand its network in most cases. Network expansion is costly and tends to be highly capital intensive. Operating costs would undoubtedly increase thus imposing additional pressure on the company's resources.

Revenue Foregone

4.6 Similar principles apply to the one laid out above. If the company opts not to serve uneconomic customers and/or areas, then it would be foregoing the revenues that would be generated from these activities. The provision of telecommunications basic telecommunication services could generate revenues in a number of ways:

a) Outgoing and incoming calls originating and terminating on the USP's network;

b) Line rental and installation of service;

c) Value added services such as voice mail and caller identification;

d) Interconnection charges from other operators.

Potential Benefits of Providing Universal Service[15]

4.7 There are numerous intangible benefits to gain from being a universal service provider. The OUR is proposing that benefits, where applicable, should be taken into consideration when calculating the net costs of universal service. Universal service costs is measured as the difference between avoidable costs and revenues foregone. However, in order to arrive at the net costs of universal service the value of benefits must be subtracted from the universal service costs. In its 1997 Statement on universal service, OFTEL concluded that the net cost to British Telecom (BT) of providing universal service, after assessing the value of benefits, was virtually zero and therefore there was no need to establish a fund at that time.

4.8 The situation might be quite different in Jamaica. The Jamaican market has recently being exposed to competition and apart from CWJ, all other companies are fairly new to the industry. So, depending on which operator(s) is/are chosen to provide universal service, the value of benefits may vary widely.

4.9 The following are some of the benefits the OUR is considering at this time for the provision universal service:

a) Brand Recognition and Corporate Reputation

b) Life Cycle Effects

c) Ubiquity of Service

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[15] These are some of the benefits put forward by regulators in the UK (OFTEL) and Australia (ACA).

d) Payphone Advertising

e) Volume Discounts

f) Non-Universal Service Obligation Services

Brand Recognition and Corporate Reputation

4.10 The perception of a company by insiders and the public at large can be beneficial as well as damaging. If the company's profile is one that 'blends' in with the society as a whole then the company will benefit, however, if its reputation is bad then customers and others would want to 'shy' away from the company. Being a universal service provider can be beneficial in that the public's perception of the company would be one of a true corporate citizen - Providing telecommunication services to people who would have been denied access under normal conditions. This will go a far way for the company.

4.11 Companies generally endeavour to portray the image of good corporate citizens by engaging themselves in the sponsorship of numerous activities vis-à-vis sport, charity and school programmes. It can be argued that a fraction of the amount of money the company contributes in these ventures could be considered as the benefit the company receives.

Life-Cycle Effects

4.12 The concept of life cycle effects is borne out of the thought that customers and areas that are currently uneconomic are still worth serving because of the perception that they might become economic in the future. However, to be commercially viable, customers would have to be willing to remain faithful to the current operator when their economic conditions change. Many businesses might choose to keep a number of uneconomic customers for a certain period of time because of the perceived future benefits. The Building Societies in Jamaica are good examples. Students are encouraged to open accounts even though the amounts being deposited throughout a specified period might not be sufficient to justify the continuity of the accounts. However, the Societies' perception is that these students will become economic in the future and will probably make use of their products and services such as mortgage loans.

4.13 Telecommunication operators can benefit from serving uneconomic customers and areas also. Increased investment in an area could boost the economic conditions and thus increase the well being of citizens in that area. However, it is worth noting that this is a risky venture. The firm can never be completely sure that the customers currently being served will remain with the company when they become profitable especially with the advent of competition in the industry. Also, customers and areas may

never become profitable in the future. However, it might be argued that this is no more risky than a normal business operation.

Ubiquity of Service

4.14 By assuming the responsibility of universal service provision, an operator enjoys the benefit of overall presence throughout the country. This presence tends to foster customer loyalty. The customer would have developed a relationship with the USP and thus would want to continue along that path wherever he goes.

4.15 When customers move from one area to another, a large proportion of these households will choose to continue their engagement with the previous operator. However, as competition intensifies and consumers are made more aware of competing operators, some customers may choose to switch for one reason or another. The benefit to the USP would be the profits earned from these customers before they migrate to other networks.

Payphone Advertising

4.16 The provision of public payphones forms part of universal service as set out in the Act. Payphones provide a means of advertising for the USP. The company can use these facilities to advertise its products and services free of cost thus saving a considerable amount of money than if it were to advertise through the media. Also, the operator can use its payphones to promote the products and services of other companies thus providing a source of revenue for the firm. The extra revenue the company receives from advertising on an additional payphone installed could be considered as the benefit it receives from providing universal service.

4.17 Another benefit operators may obtain from the provision of payphone to uneconomic areas is the life cycle effect as discussed above. A payphone might be uneconomic now but it is still worth serving because there is a possibility that it might become economic in the future.

Volume Discounts

4.18 There are potential benefits to be gained from volume discounts. An operator who provides service to non-universal and universal service customers can bargain for larger discounts on purchases because of increased volume. (Recall that the typical company will only provide service to economic customers and areas). A portion of the incremental discount that the operator receives from purchasing additional volumes can be seen as the benefit earned by providing universal service. Notice that this benefit is spread across the company's operations. So, the non-universal service portion of the business would also benefit.

Non-Universal Service Obligation Services

4.19 This is the benefit the USP receives for providing non-universal services in universal service areas by virtue of its presence. Not every person in an uneconomic area is considered as uneconomic. The provision of service to these people would be considered as a benefit to the USP in that the company would not have served them under normal conditions. In addition, these potential customers might request more than the basic services thus providing more revenue to the company.

Quantifying Benefits

4.20 Quantifying benefits might be more difficult than one can imagine. However, OFTEL in England has been able to quantify the intangible benefits received from the provision of universal service. The OUR is of the view that similar techniques applied by this regulator could be used to quantify the potential intangible benefits in the Jamaican context.

Q4:1 Do you think intangible benefits should be taken into consideration when calculating the net costs of universal service? Explain.

Q4:2 What are your views on the intangible benefits proposed by the OUR? Are there any other benefits that could be taken into consideration?

Q4:3 What method(s) can be used to quantify intangible benefits?

CHAPTER FIVE: Funding Universal Service

Introduction

5.0 After establishing the net cost of providing universal service, the next step is to explore issues relating to funding. The chapter discusses the funding options that could be applied to the Jamaican industry.

Mechanisms Used to Fund Universal Service

5.1 There are several mechanisms used in funding universal service. Different countries use different options or a combination of more than one. The following are a list of some of the options used for funding:

a) **General taxation:** the government may levy a tax on the society and use proceeds to fund universal service;

b) **Interconnect charges:** the universal service provider is allowed to inflate its interconnect charges and use the extra charges to finance universal service;

c) **Cross subsidies:** the incumbent is allowed to price one or more service(s) above cost and used the difference to subsidize other services and expand its local network;

d) **Access deficit charges:** fees paid by other operators to finance the access deficit of the incumbent;

e) **Universal service fund (USF):** operators in the industry contribute to a fund which is used to cover the net cost of universal service. Two types: (1) A physical fund that is administered either by the regulator or an independent body and (2) a virtual fund where operators make their contributions directly to the USP instead of pooling all the money in a physical fund.

5.2 Section 39(5)(b) of the Act speaks to the establishment of a universal service fund, therefore the chapter will not elaborate on options (a) through (d) above. Instead it will focus on the requirement of the Act. The rest of the chapter will address the issues relating to universal service funding via a universal service fund.

Universal Service Fund (USF)

5.3 A universal service fund is generally viewed as the best option in financing and promoting universal service objectives. Revenues are collected from members of the industry in a fair and transparent manner and then distributed to the USP in a similar fashion. This option, unlike others that

might not pass on the desired benefits to consumers, is specifically used to fund service to uneconomic customers and areas. Chile and Peru are probably the two best examples of successful universal service funds to date.

Physical Universal Service Fund (PUSF)

5.4 Operators are required to contribute to a fund which is used to off-set the net cost of universal service. The fund is usually controlled by an administrative body which is responsible for the collection and distribution of revenues. The administration of the fund varies from country to country. In some countries the government, the regulator, or an independent body assumes responsibility. In Columbia, the Ministry of Communications is responsible for administration; independent bodies are used in France, South Africa, Peru and the USA.

5.5 A physical fund tends to portray transparency, fairness and proportionality. It also tends to be flexible in that it is capable of meeting the future requirements of the industry. The PUSF can easily facilitate payments to new USPs or contributions from new operators. Contribution from each operator can be clearly demonstrated and since it is proportional to some measure of market share, no undue burden is placed on any operator.

5.6 One disadvantages of a physical fund is that it may require the establishment of an institution or agency. Since the cost of operating this institution is expected to come from the fund itself, the overall net costs of universal service would be higher than normal. Another disadvantage of this option is the administration of the fund itself. If the fund is administered by the government for example, there will be a higher potential for political interference than if other options were used.

Virtual Universal Service Fund (VUSF)

5.7 Virtual funding is similar to a physical in that operators contribute to the funding of universal service; however, instead of making payments to a physical fund, contributions are made directly to the universal service provider(s). Therefore, there is no need for the establishment of an agency; however, this approach does not totally forego the administrative costs of a physical fund. These costs would be passed on to individual operators. An example of VUSF is found in Australia. Telstra, the universal service provider, is paid directly by other operators in the industry.

Physical vs. Virtual Fund

5.8 The selection of one option over the other depends on the telecommunications environment. If there is only one USP then it would prove more efficient using the virtual rather than the physical fund. However, as the number of USPs increases, direct payments become more complicated thus shifting the preference to the physical fund.

Despite its disadvantage though, a virtual fund is possible if each USP's net cost is distributed in similar proportion among contributors to the fund.[16]

Calculation of Net Costs

5.9 The calculation of net costs will be addressed in another document to be published by the OUR later in the year. It will outline the OUR's proposed model and the methodology to be used in arriving at appropriate costs. The OUR invites initial comments from interested parties and groups as to how the issue of net cost calculation should be addressed.

Contributions – By What Means?

5.10 After establishing what the net cost of universal service is, the next step is to determine how to share this cost among operators and by what means. It is universally accepted that costs should be shared in proportion to the size or market share of the company. This can be done by the following means:

a) profits;

b) minutes;

c) revenues.

5.11 Since Section (5)(a) of the Act specifically refers to revenues as the means by which contributions should be determined, so the rest of the discussion will therefore be centered on revenues. Revenue, as a measure of contribution, is superior to profits and minutes in a number of ways:[17]

a) revenues are more difficult to manipulate than profits;

b) not all telecommunication services (access and leased lines for example) are sold in minutes;

c) collection and verification of revenue information might be less complicated.

Contribution Mechanism

5.12 Access to telecommunication services is essential to the continued development of the society. Governments worldwide are now recognizing its importance and are currently implementing various measures to ensure the availability of access. One such measure is universal service.

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[16] This argument taken from the study: "The Cost, Benefits and Funding of Universal Service in the UK", prepared by Analysys for OFTEL in 1995.

[17] Note that superiority of revenues over profits and minutes are not limited to those listed above.

Universal service bridges the gap between competition and market failures. It is process of providing basic telecommunication services to people who would not have been considered for service under normal commercial arrangements. To ensure that these customers are served, funding *may* be required.

5.13 As outlined earlier, operators would contribute to a fund, whether physical or virtual, which will then be used to finance the net cost of universal service. The Act stipulates that funding should come from the eligible revenues of licencees. According to Section 42(3) of the Act, eligible revenues refer to *"revenues which form the basis of calculation of contributions by licensees, determined in the prescribed manner."*

5.14 What should be the prescribed manner for determining eligible revenues or in other words, what should be the source of revenue? Since everyone in the industry will benefit from expanded networks, everyone should contribute. Voice telephony operators benefit from increase customer base which will result in increase revenues and brand recognition. Their customers benefit from the expanded network in that they now have the opportunity to communicate with more people thereby increasing the utility obtain from the service being provided.

5.15 Providers of non-voice services such as data may argue that they do not benefit because their users have no direct access to uneconomic customers and areas. However, there arguments are missing a very fundamental factor – all operators have to use the telecommunication network to provide service. Therefore, the expansion of the network would benefit everyone. For example, even though an area may be considered uneconomic to serve, not everyone in that location may be uneconomic. Expansion of service in that community may result in increase demand for internet service or other non-voice services in that area.

5.16 The OUR believes that only holders of service provider licencees should contribute to the fund. Revenues used for calculation of contributions should be net of any interconnection and/or leased line payments to other operators. This is necessary to avoid double taxation. For example, a company that is in possession of both a service provider and a carrier licences would be required to make contributions from services provided under both licences. Also, since consumers will be the ultimate contributors, it is more justifiable for the tax to be levied at the end of the process. If carriers are required to contribute then services sold to service providers will be inflated because the carrier will try to recover its costs by passing on the increase to purchasers of its services. The service provider, whose services are already inflated, will further increase its price to the end consumer to accommodate the tax. This is definitely not a reasonable tax option. The focus therefore is on operators who interface

directly with the customers. This form of taxation is similar to a general consumption tax – a tax is levied on finished products and services. An example is the General Consumption Tax (GCT) used in Jamaica.

5.17 The Act provides guidelines as to how much contribution a company should be required to make. It emphases that no undue burden should be placed on any contributor or the USP. The net cost of universal service for a given year should not exceed five (5) percent of the total eligible revenues for the industry. The OUR is proposing that contributions should be in proportion to a company's revenues. That is, if net costs represent five percent of industry revenues, each operator would be required to contribute five percent of its revenue to the fund. It therefore follows that operators with large revenues will contribute more in dollar terms than operators with small revenues.

5.18 Table 3 below illustrates how the process would work. Assume an industry with only four operators: A, B, C, and D and total eligible revenue of J$500M (that is, revenues for companies A, B, C, and D were J$100M, J$40M, J$160M and J$200M, respectively). Assume further that the contribution to the fund was five percent of total industry revenues, then companies A, B, C, and D would be required to contribute J$5M, J$2M, J$8M, J$10M, respectively.

Table 5: Net Cost Contribution By Each Operator

Name of Operator	A	B	C	D	Industry Total
Eligible Revenues	J$100M	J$40M	J$160M	J$200M	J$500M
Maximum Contribution (5%)	J$5M	J$2M	J$8M	J$10M	J$25M

Q5:1 Which funding option, physical or virtual, is more appropriate for the industry? Explain.

Q5:2 Do you agree with the concept that eligible revenues should be net of interconnection and lease line charges? Explain.

Q5:3 Do you support the proposal that only services provider licencees should contribute to universal service fund? Explain.

Q5:4 Should revenues from all products and services provided by service providers be considered for contribution? Explain.

CHAPTER SIX: The Universal Service Provider(s)

Introduction

6.0 This chapter assesses the different options that can be used in choosing universal service providers. Three approaches are discussed: Competitive Bidding, Pay or Play and Consumer Choice[18].

Choosing the Provider

6.1 The Act provides two options of choosing a universal service provider. Firstly, Section 40(1)(a) gives the Minister the power to designate CWJ as the universal service provider. Secondly, according to Section 40(1)(b), the Minister may designate any other licencee as universal service provider based on recommendations from the OUR. However, before the Minister can execute any of these decisions, the Act requires him to consult with the public and demonstrate that such action is in the best interest of public.

6.2 In view of the above, the Office is proposing three approaches in selecting/choosing universal service providers:

1) Competitive bidding;

2) pay or play and;

3) consumer choice.

Competitive Bidding Approach

6.3 Competitive bidding is a process where operators bid against each other to serve an area. The Ministry or the OUR could identify an uneconomic area to be served and the amount of subsidy to be allocated to the area, then invite applicants. The objective would be to award the company with the lowest bid, that is the one requiring the least amount of subsidy, the contract. The agency responsible for the bidding process would be required to set the terms and conditions. Some of the conditions of the process could include but not limited to the following:

a) Area(s) to be served;

b) the minimum quality of service;

c) the applicable tariff structure;

d) roll out period for service to be provided;

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[18] See "Reforming Universal Service: Competitive Bidding or Consumer Choice?" by Peter Pitsch. CATO Briefing Paper No. 29 May 7, 1997. http://www.cato.org/pubs/briefs/bp-029es.html

e) maximum subsidy;

f) Penalty for non-fulfillment of terms of contract.

6.4 The two most successful cases to date can be found in Chile and Peru. The Chilean program focused on providing public phones in every community. In 1995, the country targeted approximately 6000 communities and by 1999 they were successful in installing public phones in 5916 of these districts. The records[19] indicate that during this period the level of subsidy paid out by the authorities to operators amounted to 50% less than they had budgeted thus indicating the powerful nature of competitive bidding. Over two million people benefited from the project!

Table 6: Summary of the Results of the Bidding Process in Chile

Year	Projects	Localities	Inhabitants in Localities (000)	Maximum Subsidy (USD m)	Subsidy Granted (USD m)
1995	34	726	240	3.1	2.1
1996	18	1632	762	4.2	0.9
1997	70	2146	772	20.4	8.1
1998	27	858	229	8.9	5.5
1999	34	554	154	5.5	4.4
Total	**183**	**5916**	**2157**	**42.1**	**21.0**

Source: "Telecommunications Regulation Handbook". Edited by Hank Intven. Page 6-31.

6.5 The Peruvian program started out in 1998 with a pilot project to provide 213 localities/communities with access to payphones. With a budgeted maximum subsidy of US$4M, the successful bidder was able provide the service for about 59% less. The project was completed in just over a year. After the completion of the pilot project, service was extended to include public internet telecentres. In late 1999 three projects were then tendered with intention to install 1937 public payphones and 236 public internet telecentres.

6.6 Something noticeably happened during the process. The regulator modified the bidding arrangements. In an effort to arrive at the lowest cost for the three projects combined, the regulator allowed simultaneous bidding. Operators were allowed to bid for any combination of the projects offered. The results were very encouraging. Of the maximum amount of US$50M allocated, the bidders requested only US$10.99. Bidder A won the bid for project 3 meanwhile projects 1 and 2 were awarded to Bidder B. Tables 5 and 6 below give a summary of the bidding process and the results.

[19] See "Telecommunications Regulation Handbook". Edited by Hank Intven. Page 6-31.

Table 7: Example of Multiple Projects Bidding Procedure in Peru.

	Project 1	Project 2	Project 3	Project 1 & 2	Project 1 & 3	Project 2 & 3	Project 1,2 &3
Bidder A's Bids:	100		50		130		
Bidder B's Bid:	80	50	60	120	130	100	180
Bidder C's Bid:	90	45		130			

Source: "Telecommunications Regulation Handbook". Edited by Hank Intven. Page 6-35.

Table 8: Summary of the Results of the Bidding Process in Peru

Project	Localities	Inhabitants in Localities (k)	Maximum Subsidy (USD m)	Subsidy Granted (USD m)
South	534	136	14.0	
Central South	1029	303	27.0	
Jungle North	374	141	9.0	
Total	**1937**	**580**	**50.0**	**10.99**

Source: "Telecommunications Regulation Handbook". Edited by Hank Intven. Page 6-36.

6.7 Even though the bidding process would be done competitively, there would still be some level of inefficiencies involved. The bidding process is driven mainly by the subsidy that is promised by the bidder and not necessarily by price and quality of service to customers even though these might be implicitly outlined during the process. Also, since only one operator will be providing service to consumers in the particular area, the company might use this opportunity to abuse customers despite the presence of regulation. In addition, even though a company might produce the lowest bid and awarded the contract of providing service, it might not be able to fulfill its commitments – the bid price might just be too low. (This is referred to as the winner's curse in the economic literature). Companies should be informed from the beginning of the process the penalties that would be attached to these conditions.

Pay or Play Approach

6.8 This approach was put forward by OFTEL. Essentially, it is a process where an operator can choose to serve an uneconomic customer or area voluntarily. The approach has the potential of introducing competition in the provision of universal service and even innovation in the products and services provided. The packages offered by operators would have to comply with guidelines specified by the OUR. For example, the company's pricing policies would need to conform with the ones put forward by the Office. Also, operators would be entitled to funding, providing they meet

the necessary requirements for funding. Funding would be netted off against the operator's contribution towards the universal service fund.

Consumer Choice Approach

6.9 The consumer choice approach is one where the consumer chooses which operator (s)he wants to supply him/her with service. This approach is applicable where competing operators exist in an area but the customer is unable to connect to any of the network because of affordability problems. This will become a big issue as competition intensifies in the telecommunication industry. Since the rational consumer would want to choose the operator who provides the best quality services at the most affordable price, it forces the companies to be efficient. This is a powerful tool that can be used ensure that customers get the best value for their money.

6.10 The company would be given a subsidy to provide service to the customer. Just as in the pay or play approach above, funding would be netted off against the operator's contribution towards the universal service fund. One of the advantages of this approach is that the customer has the option of switching from one operator to another and still retain the subsidy.

Q6:1 Under what circumstances do you think each of the approaches proposed would be most appropriate? Explain.

Q6:2 Are there any other approaches that could be used to select/choose a universal service provider? Explain.

CHAPTER SEVEN: Other Issues in Universal Service Provision

Introduction

7.0 The chapter focuses on other issues that might impact on the provision of universal service. It examines the possibility of introducing special services to the disabled community; the issue of disconnection and some benefits of keeping customers connected; the pros and cons of cross subsidies, rate rebalancing and access deficit in a "soon to be" fully liberalized market; directory enquiry service and how it may prove useful to customers; and finally, the chapter seeks to outline some of the issues that may involve proper monitoring and review.

Service to the Disabled

7.1 The Planning Institute of Jamaica (PIOJ) reports that an estimated five (5) percent[20], (over 100,000 persons), of the population have some form of disability. Of this figure, 29.1 percent are physically disabled and 14.1% have multiple disabilities. The National Policy on Disability provides guidelines on how disabled people should be treated. One such guideline is equal opportunities for people with disabilities just as any other member of the society.

7.2 OFTEL has put forward a number of services that British Telecom (BT), the universal service provider in England, is expected to meet in its provision of service to the disabled[21]. They include, but are not limited to the following:

a) provision of free directory information service to customers who are unable to use a telephone directory;

b) priority fault repair services;

c) reasonable access to payphones by wheelchair users;

d) delivery of bills in Braille, large print or even on computer disk for customers who are visually impaired;

e) cheaper calls for text phone users; ability to call other customers who do not have text phones. (Text phones are designed for the hearing-impaired).

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[20] According to the 2000 Edition of the of the PIOJ's "Economic and Social Survey Jamaica 2000."

[21] See "Telecommunication Services for People with Disabilities - Statement" published by OFTEL. www.oftel.gov.uk/publications/1995_98/index.htm

7.3 The OUR is proposing that special consideration be given to the disabled population. Service should be such that no undue burden is imposed on this customer group in using the service. Some of the issues put forward by Oftel could probably be used as the starting point for the level of service to the disabled community.

Disconnection

7.4 The provision of universal service to a customer should not be viewed as a luxury item but instead as a necessity. The objective should be to satisfy the individual's basic telecommunication need. With this view in mind, programmes could be implemented to keep the customer on the network.[22]

7.5 The OUR believes that disconnection should be minimal, if not non-existent. Everyone benefits when the customer remains on the network. As the customer base increases, so does the value of the network. Subscribers will be able to communicate with more people thus increasing the utility obtain from the network. The company benefits in terms of increase revenue and brand image. If the customer is disconnected, the company would not only forego revenues from outgoing calls and access charges but also revenues from incoming calls which might well be the main source of revenues generated by the customer. The other side of this argument is that the company could earn more revenue if the service was transferred to another customer!

Cross Subsidies, Rate Rebalancing and Access Deficit

7.6 Cross subsidies occurs where the revenue from one service of a company is used to finance another service provided by the same company. Traditionally, the telecommunications industry in Jamaica relied on this concept. International calls are (were) set higher than economic costs and the extra revenues used to finance below cost domestic services. This concept is now changing. Today cross subsidies are viewed as impractical and anti-competitive. The liberalization of the market will continue to force international rates down to cost. This means that the subsidy from this service will continue to get smaller and smaller until it disappears.

7.7 Rate rebalancing may pose serious implications for some customers. Persons who make mostly domestic calls would fall into this category. However, customers who concentrate more on international calls will benefit greatly from price reductions. Research in developed countries indicates that rebalancing has brought about increased penetration and overall reduction in price for most customers. Also, it has been shown that the price elasticity of access services is very low which would suggest that increase access charge would have little effect on the demand for access services. In addition, the studies point out that access and calling services

[22] Chapter two discusses some voice telephony options that could be implemented.

are compliments. Overall reduction in calling charges will increase the demand for access.[23]

7.8 Caution must be exercise when interpreting these results. Mobile is fast becoming a substitute for fixed line in Jamaica so one will want to give due consideration to this issue. Also, these studies were mostly conducted for developed countries. Note that the conditions in industrialized and developing countries are different. For example, the per capita incomes in developed countries are relatively higher so customers in these countries will be less responsive to increased access charges than those in developing countries. The truth is, many customers in the poorer countries may "fall off" the fixed network. So in order to accommodate continuity of service, these customers may have to be incorporated into a universal service plan.[24]

7.9 If rebalancing is fully realized before the introduction of the universal service plan, then access deficit will not be an issue since a fund will be in place to address compensation issues that may arise. The absent of rebalancing and the introduction of competition in the international market might warrant access deficit charges.

Directory Enquiry Services

7.10 The OUR is presently in consultation with the industry as to how directory enquiry services could be provided in a liberalized market. CWJ, being the sole provider, has dominant market power and the Office is currently exploring ways in which the service could to be liberalized to facilitate more players in the market.

7.11 Directory enquiry provides valuable information to customers. For example, a customer in need of plumbing services can easily pick his phone and request the plumber's number from the DQ operator or search through a printed directory. This saves time and money since the customer might have had to use other means of reaching the plumber.

Monitoring and Review

7.12 For the programme to be successful, there must be effective monitoring and review. The OUR will ensure that the guidelines and standards laid down for the provision of service are adhered to by USP(s). Of critical interest to the OUR in the monitoring process are the following:

a) Price;

b) service quality;

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[23] See "Telecommunications Regulation Handbook". Edited by Hank Intven. Page 6-17.

[24] Chapter two discusses universal service voice telephony options.

c) timely reports from USP;

d) hands on experience from customers and;

e) rate at which customers are connected to the network.

7.13 Review is just as important as monitoring. Given the rapid changes in technology, it follows that the definition of universal service will have to be constantly reviewed to ensure that services provided to customers remain current. Presently internet service is not a requirement for households, however, in the near future this idea might have to revised to accommodate service in every household across the Island. Tele-centres might be an efficient way of providing telecommunication services to communities in remote areas. This issue will also have to be addressed soon.

Q7:1 Do you think the disabled community should be given special treatment and what should be the starting point for services? Explain.

Q7:2 What are your views on disconnection? Do you agree with the proposal of the OUR? Explain.

Q7:3 Should customers be allowed access to directory enquiry services? Explain.

Q7:4 What would be considered as an effective monitoring and review programme?

APPENDIX A: List of Consultation Questions

Q1.1 Do you support the OUR's definition of universal service? Explain.

Q1.2 How do you think the process of implementation should work? Explain.

Q2:1 What technology should be used to provide single line voice services? Explain.

Q2:2 Do you support the idea of limited minutes to customers and based on the model discussed, are there any other feasible methods of distributing minutes? Explain.

Q2:3 What are your views on the voice telephony options proposed by the OUR? The Office also welcome comments on other options that could be considered.

Q3:1 How do you think the provision of payphones boxes should be approached?

Q3:2 What are your views on the rate structures proposed for payphones?

Q3:3 Do you support the view that more emphasis should be placed on the provision of internet services at the primary and secondary levels of the education system? Explain.

Q3:4 What tariff packages should be implemented for schools, post offices and public libraries?

Q4:1 Do you think intangible benefits should be taken into consideration when calculating the net costs of universal service? Explain.

Q4:2 What are your views on the intangible benefits proposed by the OUR? Are there any other benefits that could be taken into consideration?

Q4:3 What method(s) can be used to quantify intangible benefits?

Q5:1 Which funding option, physical or virtual, is more appropriate for the industry? Explain.

Q5:2 Do you agree with the concept that eligible revenues should be net of interconnection and lease payment charges? Explain.

Q5:3 Do you support the proposal that only services provider licencees should contribute to universal service fund? Explain.

Q5:4 Should revenues from all products and services provided by service providers be considered for contribution? Explain.

Q6:1 Under what circumstances do you think each of the approaches proposed would be most appropriate? Explain.

Q6:2 Are there any other approaches that could be used to select/choose a universal service provider? Explain.

Q7:1 Do you think the disabled community should be given special treatment and what should be the starting point for services? Explain.

Q7:2 What are your views on disconnection? Do you agree with the proposal of the OUR? Explain.

Q7:3 Should customers be allowed access to directory enquiry services? Explain.

Q7:4 What would be considered as an effective monitoring and review programme?