BARBADOS No. 1 of 1999

THE FAIR TRADING COMMISSION

IN THE MATTER of the Utilities Regulation Act 2000-30 of the Laws of Barbados

AND IN THE MATTER of the Application by Cable & Wireless BARTEL Limited for a represcription of the useful lives of the Assets and Plant in Service

CABLE & WIRELESS BARTEL LIMITED
APPLICANT

OLSON ROBERTSON
INTERVENOR

BEFORE

Mr. Justice Frank King	Chairman
Mrs. Vivian-Anne Gittens	Deputy Chairman
Mr. Glyne Barker	Commissioner

HEARING: 2001 - November 27, December 10, 14
2002 - March 11-14, April 8-10, May 23, October 25

APPREARANCES

Mr. Alair Shepherd, Q.C. Legal Advisor to the Commission

Mr. Patterson Cheltenham, Q.C.
and Mr. B. Gale, Q.C. for the Applicant

Mr. Olson Robertson in person

DECISION

JURISDICTION

1 This application filed by Cable & Wireless BARTEL Limited "the Applicant" with the Public Utilities Board "PUB" on 28th December 1999 as amended on the 22nd February 2000, is for a re-prescription of the useful lives of the assets and plant in service.

2 At the time of the application the PUB had the duty and obligation to hear and determine the application and thus the requisite jurisdiction. However, by letter to the Applicant dated 11th day of April 2000 the PUB deferred hearing this application pending the establishment of the new regulatory body, the Fair Trading Commission "the Commission". The Commission was established on 2nd January 2001 by the Fair Trading Commission Act 2000-31 and was given jurisdiction to enforce the Utilities Regulation Act 2000-30 which came into force on the 2nd January 2001 simultaneously with the Fair Trading Commission Act 2000-31.

3 Section 48 (b) of the Fair Trading Commission Act provides that:

> *"(b) any right, privilege, duty or obligation conferred or imposed upon the Public Utilities Board existing immediately before the commencement of this Act shall be deemed to be conferred or imposed on the Commission;"*

4 By virtue of this provision, the Commission succeeded to the PUB's duty and obligation to hear this matter. Additionally, on 26th March, 2001 the Applicant made a request to the Commission to determine this matter and generally, in this and diverse matters, submitted itself to the Commission's regulatory authority. This status quo with respect to the Commission's regulatory jurisdiction over

Cable & Wireless BARTEL Limited was formalised by a Ministerial Order dated 7th September 2001.

BURDEN OF PROOF & STANDARD OF PROOF

5 The burden of proof in this matter is on the Applicant, and the standard of proof is that applicable to civil matters i.e. on a balance of probabilities.

FACTORS TO BE CONSIDERED BY A REGULATOR WHEN SETTING ASSETS LIVES

6 A regulator must always be conscious of the well-being of both the consumer and the service provider, to ensure that the consumer receives a service at a reasonable rate, and that the service provider is afforded an adequate income or profit on which to sustain its business. These principles are enshrined in Section 3 subsections (2) and (3) of the Utilities Regulation Act 2000-30 which states:

> *"(2) In establishing the principles referred to in subsection 1(a) the Commission shall have regard to:*
>
> *(a) the promotion of efficiency on the part of service providers;*
>
> *(b) ensuring that an efficient service provider will be able to finance its functions by earning a reasonable return on capital; and*
>
> *(c) such other matters as the Commission may consider appropriate.*
>
> *(3) The Commission shall:*
>
> *(a) protect the interest of consumers by ensuring that service providers supply to the public, service that is safe, adequate, efficient and reasonable; …"*

7 The Commission recognises that a critical result of setting useful lives of assets is the determination of the depreciation rate that the service provider uses, and as stated by the National Association of Regulatory Utility Commissioners, "NARUC", in its text "Public Utility Depreciation Practices", August 1996, at page 22:

> *"Prescribing depreciation rates is one of the most important regulatory commission activities impacting customer rates. The estimation of depreciation parameters is not, of course, a scientifically exact process, since it involves a large element of informed judgment regarding future developments. At the same time, it cannot be an arbitrary figure selected for convenience, because it must allocate the full cost over the life of the property in a rational manner. The depreciation rate is a calculated figure, and there is a zone of reasonableness within which the underlying parameters may be expected to lie.*
>
> *It is essential to remember that depreciation is intended only for the purpose of recording the periodic allocation of cost in a manner properly related to the useful life of the plant. It is not intended, for example, to achieve a desired financial objective or to fund modernization programs."*

8 In addition the Commission must also be cognisant of the individual company's circumstances:

> "*The company should establish useful lives of its central office equipment (exchange), plant equipment and other fixed assets in order to arrive at depreciation rates that are relevant to the Barbados Telephone Company Limited's particular situation. The company's depreciation rate charge should then be based on these rates ....*" Husbands J citing views expressed by Pannell Kerr Foster (Accountants) at page 8 of The Barbados Telephone Company Limited and Miles A. Rothwell et al, Supreme Court Suit No. 1089A of 1986.

9 The Commission is guided by the foregoing and remains cognisant that in setting lives for various asset groups it will impact on the speed at which the Applicant will be able to depreciate the asset and thus allocate its costs over the estimated useful life of the asset (or the group of assets) in a systematic and rational manner.

10 The Commission, in setting the useful lives of the assets and plant, must also look at the number of factors which include physical factors such as wear and tear, functional factors such as obsolescence, technology changes and relevant contingent factors and assess their impact on the useful lives of the particular asset or asset group.

The Role of an Expert

11 The Panel accepts that (1) it is the duty of the Applicant through its experts to provide the necessary scientific criteria to enable the Panel to test the accuracy of the expert's conclusions, and to form its own independent judgement, and (2) if there are facts which entitle the Panel to reject or differ from the opinions of the experts, we are free to do so.

12 The primary duty and role of an expert witness was succinctly stated by Lord President Cooper C.J. in Davie v Edinburgh Magistrate (1953) SC34 at 40 as to:

> *"furnish the judge or jury with the necessary scientific criteria for testing the accuracy of their conclusions so as to enable the judge or jury to form their own independent judgement by the application of these criteria to the facts provided in evidence".*

13 The author of Phipson on Evidence (Thomson Professional Publishing Company; 15th Edition) states at paragraph 37-50 as follows:

> *"Although, therefore a doctor giving medical testimony in a criminal trial may be regarded as giving independent expert evidence to assist the court, it is quite wrong for the jury to be directed that his evidence should be accepted in the absence of reasons for rejecting it."*

14 In the case of Davie v Edinburgh Magistrate (1953) SC34, the Court of Session rejected the proposition that a judge or jury is bound

to adopt the views of an expert, even if they should be un-contradicted as "the parties have invoked the decision of a judicial tribunal and not an oracular pronouncement by an expert". It follows that an expert witness must explain the basis of the theory or experience on which his opinion applies to the matter in question.

15 The primary reason for insisting that the experts' primary role is to give technical opinion evidence is to ensure that they do not usurp the functions of the tribunal.

16 In Langford VR (1974) 20 FLR 11 the Court examined the role of the expert witness called by the defence and said:

> *"…. like any other expert witness (was) called to assist the court on technical matters, (but) the court is not entitled to accept an expert's opinion blindly nor does an expert opinion relieve the court from coming to its own conclusions based on all of the evidence, including the evidence of the expert witness. An expert gives evidence – he does not decide the issue. No one is infallible and no expert however specialised his knowledge would claim to be. The opinion of an expert is only as reliable as his reasons for reaching that opinion and the methods employed to establish his reasons. If the method employed consists of tests, the court must look at the nature of the tests and the qualifications and experience of the person administering them. If the tests themselves are inadequate or the qualifications and experience of the person interpreting the results are limited, this must affect the weight to be attached to the reasons based on those tests and to the opinion reached"*

17 The Public Utilities Board retained Mr. Brian F. Griffith a Chartered Accountant and principal of Brain Griffith & Co., to advise it on this Application. The Fair Trading Commission continued his retainer.

18 Mr. Griffith has been an Advisor/ Consultant to the Public Utilities Board and an Assessor for many years.

19 The Panel has seen Mr. Griffith's report and affidavit of 26th November 2001 and the Applicant's responses thereto. He challenged most of the Applicant's revised lives and agreed with some. He gave reasons for his approach. The area of challenge was primarily directed to Dr. Elfar's method in arriving at his average remaining lives of assets under Buildings, his Average Year of Final Retirement and Central Offices where double weighting tended to an earlier reduction of life (i.e. faster depreciation, see paragraphs 55 to 59, hereof) and skewed depreciation in favour of the most expensive component in an asset category, i.e. an expensive component purchased near the end of the lives of other components would be written off earlier than its actual life.

20 Although Mr. Griffith was strenuously examined he stuck throughout to his conclusion about double weighting with respect to the Central Office account.

21 Mr. Gale contended that Dr. Elfar was an acknowledged international expert and his evidence, being unchallenged, must be accepted. The role of an expert is clearly set out at paragraphs 11 to 16 hereof and we are satisfied that that is the correct approach.

THE SUBSTANTIVE APPLICATION

22 The Applicant seeks to have the lives of the assets and plant originally set by the PUB in 1994 re-prescribed with effect from the financial year 1998/ 99 and onwards.

23 The proposed lives which form the subject matter of this Application and the existing lives, appear at page 7 of the Cable & Wireless BARTEL Limited Depreciation Study 1998/ 99 "1998/ 99 Study" at Exhibit 2 of the Record and are as follows: -

Account Number	Asset Category	Existing life or AYFR *	Proposed life or AYFR *
212-1	Buildings	70	50
221-1	Central Offices		
	St. John (Added in 1998/ 1999)	-	2010/ 11
	St. James (Retired in 1994/ 1995)	-	-
	St. Philip (Added in 1997/ 1998	2015/ 16	2009/ 10
	St. Lucy (Retired in 1998/ 1999)	-	-
	Grazettes	2003/ 04	2004/ 05
	Speightstown	2011/ 12	2007/ 08
	Christ Church	2009/ 10	2005/ 06
	Windsor Lodge	2000/ 01	2004/ 05
231-1	Station apparatus	14	8
232-1	Station installation	5% rate	5% rate
232-7	Drop & block wiring	20	15
234-1	Large PABX	15	10
241-1	Pole lines	20	20
242-1	Aerial cable	20	17
242-2	Underground cables	30	30
244-1	Underground conduit	35	35
261-1	Furniture & office equipment	8	8
261-2	Computer equipment	8	6
264-1	Motor vehicles	5/ 30% Salvage	5/ 15% Salvage
264-4	Work equipment	5	5

* - AYFR is Average Year of Final Retirement

24 The Commission has been asked to consider changes in the following accounts: Buildings, Central Offices, Station Apparatus, Drop & Block Wiring, Large PABX, Aerial Cable, Computer Equipment and Motor Vehicles.

25 A number of matters are worthy of note:

(1) Column 3 (Existing life or AYFR) sets out generally the years of life as approved by the PUB in 1994, but Central Offices lives have been converted from years to average year for final retirement;

(2) Column 4 (Proposed life or AYFR) shows the lives in years and average year of final retirement which the Commission is asked to approve;

(3) Changes have been made to the Central Offices account (Additions of St. John and St. Phillip, and retirements of St. James and St. Lucy); and

(4) No changes were sought in 6 categories – Pole lines, Underground cables, Underground conduit, Furniture & Office equipment, Station Installation and Work equipment. The exclusion of these six (6) asset accounts from consideration leaves eight (8) asset accounts for consideration by the Commission.

26 The evidence in this matter included:

(1) A 1998/ 99 Depreciation Study.

(2) Affidavits by:

(i) Mr. Hughie DaCosta Walker

(ii) Mr. Anthony Devonish

(iii) Mr. Gordon Cochrane

(iv) Mr. Edwin Layne

(v) Dr. Aly Elfar

(vi) Mr. Brian Griffith

(3) Oral evidence by the said deponents.

(4) Exhibits which form part of the Record.

BUILDINGS

27 The main sources of evidence were in the form of affidavits and oral testimony of Mr. Anthony Devonish, Manager, Property Administration and Dr. Aly Elfar, P. Eng., a Depreciation and Capital Recovery Expert.

28 The buildings involved are those at Windsor Lodge, remote switching buildings and other buildings that house central office equipment.

29 The Applicant submits that the "average age" of its buildings as at March 31, 1999 was about nine (9) years and that 61 more years would be too long a period over which the buildings would be written off. The Applicant also submitted that to maintain the buildings over 61 years would be very difficult.

30 Mr. Devonish pointed out that at Windsor Lodge:

- the existing buildings were not originally designed with preinstalled conduits, and duct work had to be placed along the walls to accommodate the structured cabling now required to link the data communication channel and the security system.

- the present air conditioning system was old and inefficient and maintenance costs were approximately

$250,000 annually, and the high ceilings increased the air conditioning costs. Installation of a modern system would require costly physical renovations to the present structure.

- the existing electrics were insufficient to support the office equipment and computer network and the network based workgroups now required in the new operating environment could not be easily accommodated in the existing structures.

31 With regard to the Central Office buildings, he pointed out that these: -

- were now underutilised given the technological changes leading to more compact switches thus reducing the need for floor space.

- were not easily converted to administrative or other usage except after extensive renovations.

32 Remote buildings, he stated were very small buildings, located in areas away from the common business districts, which limited their alternate use to Cable and Wireless, or to others.

33 Mr. Devonish stated that to retrofit the Pegwell and other Central Offices and Remote buildings would be costly, yet no evidence was presented to show that these costs would be prohibitive and uneconomical.

34 The extra-ordinary nature of the retro-fitting unique to the Applicant was not borne out by the evidence. The upgrading work which was conducted on the Administrative Buildings, at Windsor Lodge and elsewhere, while necessary, appears to us to be what any commercial enterprise would be expected to undertake to ensure its viability as a provider of customer services.

35 Mr. Devonish at paragraph 15 and 16 of his affidavit referred to the original buildings at Windsor Lodge as "old buildings", requiring continuous renovation. The coral-stone walls were porous and let in moisture, gathered fungus and had to be cleansed and sealed. The Panel sees this as normal routine maintenance for these types of buildings in Barbados. He continued, that since the building was first occupied in 1968, the Applicant's requirements had changed dramatically because of the rapid technological changes resulting in the need to effect physical changes. In our view, this does not make Windsor Lodge totally unsuitable for its original and continuing purposes so as to justify his saying in answer to Deputy Chairman Gittens, he "*would demolish the buildings*."

36 Additionally, in paragraph 30 of his affidavit and under examination Mr. Devonish cited Hilton Hotel, 33 years old and Sandy Lane Hotel, 37 years old, as supporting examples of commercial properties which had been demolished after relatively short lives. The Panel considers these comparisons of Windsor Lodge, a building which houses telecommunication equipment albeit with some comforts for staff and customers, to the Barbados Hilton and Sandy Lane, first-class hotels catering to the highest guest demands of ambience, architecture, restaurants, entertainment, and generally high quality accommodation, inappropriate. To opine that the purpose-built Windsor Lodge building which is in the public service should be demolished is a rash

statement and undervalues the remaining useful life of this building. No evidence was presented that this building was structurally unsound, that the foundations had given way, nor that termites had devoured the building or that the building had other serious defects.

37 Again, no evidence was presented to demonstrate that retro-fitting has been thoroughly explored to resolve real or imagined difficulties at Windsor Lodge.

38 The Applicant presented no historical experience showing the number of Remote/ Central Office buildings that were no longer used by the company and that had in fact been taken out of service. In fact, at page 212 of the transcripts, when asked if any had been taken out of service during his tenure, Mr. Devonish said "No". These buildings all still house equipment which the Applicant uses in the provision of telecommunication services. While the Applicant, at page 16 of the 1998/ 99 Study alluded to a trend which may result in the retirement of some of these buildings, no empirical information was presented to demonstrate this trend. The evidence presented identified under-utilisation of some buildings and was insufficient to establish a case for the under-utilisation of the entire group. However small the square footage of use, and however small the equipment, these buildings continue to be used and useful in the provision of telecommunication services. Under-utilisation by itself is not a factor to be considered for depreciation purposes.

The methodology

39 The methodology as used in the 1998/ 99 Study estimates that the average age of the existing building plant as of March 31, 1999, is 8.5 years (Annex A-1 on page 20) (estimated 9.0) giving an estimated average remaining life for the building plant of 61 years (which the

Applicant stated was unreasonable). The Applicant's proposal of 50 years, gives an average remaining life of 41 years.

40 The Applicant's methodology does not reflect the actual age of the buildings. This is demonstrated when one examines the history of the main Windsor Lodge building.

41 Windsor Lodge's history is this: built by the Applicant in 1968, sold and leased back in 1974, repurchased in 1994 and yet used throughout in the public service. In 1992 the PUB set the lives of buildings at 70 years, down from 100 years. At paragraph 591 of the record Mr. Cochrane explained that on repurchase in 1994, it was given a 70-year life, of which, in 1999 only five (5) years had expired. The methodology lumps all buildings together giving an estimated average age of nine (9) years as compared to a regulatory age of five (5) years in 1999. It is noted that the Windsor Lodge building has been in the public service for 31 years as at March 31st 1999.

42 The anomaly created as to the life of this building was highlighted when Mr. Robertson examined Dr. Elfar on this aspect and he replied at page 479 of the record "*the fifty if it changes will be applied to everyone. The forty-one will disappear. This is just an analysis*". In our view, this analysis obscures the actual age of the buildings and will tend to skew the average age towards the age of the highest investment in this asset category.

43 Having considered all the evidence, we are not satisfied that a case has been made out for a re-prescription of the service life of this asset group. It is ordered that the lives of the buildings remain at 70 years.

CENTRAL OFFICES

44 The Applicant proposed a revision of the lives of its Central Offices. Supporting evidence was presented by Mr. Edwin Layne and the 1998/ 99 Study.

45 Mr. Layne broke the Central Offices into their functional components, of Central Processing Unit (CPU), Switching Network, Line Peripheral Modules, Trunk Peripheral Modules, Software, Fibre Optic Electronics; and Central Office Power Systems, and discussed them. He gave as his considered opinion what the lives of each functional component should be. These lives are reflected at page 34 of the 1998/ 99 Study.

46 He presented evidence regarding the technological innovations, increasing customer demands, variant manufacturer's support periods and general physical wear, as factors that generally determine the lives of the functional components of the Central Offices and shortened the useful lives of these assets.

47 At paragraph 17 of his affidavit, Mr. Layne referred to the data overlay network now being adopted by all major telecommunications companies worldwide, which the Applicant was moving towards. This was based on Asynchronous Transfer Mode (ATM) technologies capable of supporting all existing data protocols, e.g. data, voice, video and image, facilities which the current voice system could not handle effectively. Consequently, the gradual phasing out of this older network started over 18 months ago. In Phase 2 trunk Media Gateways would be installed in the existing DMS-100 switches to facilitate the connection to the ATM network.

48 These changes in customer demands for sophisticated modern features and plans had been considered in arriving at the estimation of the lives of the functional components. The Internet had challenged telecommunications networks to continuously review and upgrade their services. These demands had occurred quite rapidly over the last few years, and were part of the considerations of the functional component asset lives estimation.

49 Mr. Layne indicated, also at paragraph 25 of his affidavit, that manufacturer's support was an important factor in determining the lives of the functional components. All of the contracts came with a support clause identifying a fixed period beyond which the manufacturer would cease to provide technical support or replacements for the product. It would have been useful for the Panel to have seen some of these contracts.

50 With regard to the wear and tear of the equipment, Mr. Layne made specific reference to the lives of existing and retired functional components at the various Central Offices, to establish a pattern for the normal length of years of the specific components. In particular the DMS-100 switch, which he termed a very specialized computer, suffered the same rapid technological changes and physical wear impacting on the personal computer industry.

51 Mr. Layne was also asked about specific retirements and replacements (page 102 of the transcripts), with respect to the Super Node Series 20 installed in Christ Church in 1994 and retired and replaced by Series 60 in 1998 and similarly Super Node 20, launched in 1990 and replaced by a Series 60 in 1998. He said that these were necessary "*to take advantage of the new software release and acquire the*

services being offered in that release and also to maintain manufacturer's support".

52 He was also asked about the company's attempt to justify a reduction in life for the CPU based mainly on the historical experiences of the Super Nodes 60, which were being replaced by the XACORE CPU. He was also asked to respond to a suggestion that the supplier's expected life for the XACORE would be longer than the Super Nodes (page 125 of the transcripts).

53 Although suggesting that there was nothing to indicate this was so, he made a contrary admission that with the new XACORE, its multiple processors, allowed for taking out a processor and swapping it without impacting the operations of the switch and this had implications for the prolonged life of the switch. It was clear to us that XACORE was new, and because of switchability its life could be extended hence its full potential life span is uncertain at this time.

54 At page 34 of the 1998/ 99 Study, a methodology was presented to estimate the remaining life of the investment in each of the six Central Offices, while pages 44-56 provided an illustration of the calculations applied in the methodology.

55 The methodology attempts firstly to estimate the age of each vintage or addition to a functional component as at 31 March 1999 by calculating the date difference between the mid-point of the year of addition and March 31, 1999. The results are then multiplied each by its investment cost to arrive at a weighted cost for each addition to the functional component. These weighted costs for all the additions of a functional component are then summed to arrive at a total weighted cost which is then divided by the sum of its total investment cost

(calculated by summing all the investment costs of its additions) to arrive at the average age for each functional component.

56 This average age is then subtracted from the total estimated life of the functional component to arrive at its remaining life. The estimated lives as determined by the Applicant and presented on page 34 of the 1998/99 Study, as well as being used repeatedly in the calculations are the considered opinion of Mr. Edwin Layne.

57 The estimated remaining life of each functional component of a Central Office is then multiplied by its total investment cost to arrive at a total weighted cost for each functional component relative to its remaining life. These weighted costs for all functional components are then summed to arrive at a total weighted cost as per Central Office, which is then divided by the total investment costs for the entire Central Office.

58 The resulting estimate is determined to be the Average Remaining Life of the particular Central Office as at 31 March, 1999. This calculated remaining life of the Central Office is then added to the date of analysis (31 March 1999) to arrive at the Average Year of Final Retirement for the particular Central Office.

59 An analysis of the methodology reveals that it considers the remaining useful life of the functional component by subtracting the estimated average age to date from the total estimated manufacturers' life and also incorporating this into the calculations. The attempt here to examine the useful life of the functional components by considering the vintages as at March 31st, 1999, is laudable. However, this approach as applied skews the resulting average age towards the age of the highest investment.

60 The Applicant presented an extract from the NARUC publication, "*Public Utility Depreciation Practices*" and from "*Technology Forecasts for Local Exchange Switching Equipment*" by Hodges and Vanston, Exhibits 23 and 25 respectively, which did not support the methodology proposed and integrated into the 1998/ 99 Study. In neither document was there any information that supported the use of double weighting in a manner similar to that presented in the 1998/ 99 Study.

61 The Applicant through Mr. Layne, attempts to show an argument for the revised lives of the Central Offices, purportedly on the premise of the used and useful lives of the particular Central Offices. Mr. Layne's testimony speaks to the innovations in technology, the manufacturers' support and the increasingly customer demands. These he established were the key reason for the regulator to consider movement. On the other hand, from the outset of his examination Dr. Elfar referred to his analysis as the recovery of money. At page 385 of the transcripts he states *"Because we are dealing with the recovery of money. All this exercise deals with the recovery of money*". He focussed on establishing assets lives based on a mathematical model highlighting the recovery of the investment in the asset, rather than focusing on the useful life.

62 The tendency of the Applicant's newly presented method which aligned the life of the most expensive addition or functional components to the life of the functional component or Central Office respectively, is divergent from the mandate of the regulator which is charged with the responsibility of ensuring that the pace of depreciation is matched first to the used and useful lives of the assets in service.

63 The Public Utilities Board emphasised the views of Pannell Kerr Foster at page 2 of its 1986 decision:

> *"The utility company is entitled to recover cost of plant that was used in the public service during the test period; no more no less. Since, however, it is not possible to determine accurately the amount of plant so used the most reasonable test is to obtain as reliable as possible an estimate of the useful service life of all plant and machinery and divide the cost by the number of years over which it is estimated to be useful"*

We support this approach.

64 The approach utilised by the Applicant of establishing an average year of final retirement for the Central Office account may require the service provider to return to the regulator on a regular basis to extend the year of final retirement whenever substantial investment is undertaken by the purchasing a new or replacing a functional component.

65 Dr. Elfar acknowledged this in his testimony (pages 368-369 of the transcripts) where he indicated:

> *"….and that answers your question to say what happens in the year before the whole thing goes, but we will on time duly come back and say we are changing that so that what you are describing to me at the last year before that the estimate lengthens now so it will be stretching and instead of one year it will be over 4 or 5".*

66 We are of the view that this approach places an additional burden on the service provider and could represent additional expense in preparing and reviewing the prescribed lives more frequently.

67 The retirement characteristics of specific functional components are now available. Where relevant information on specific depreciable assets is available, this is preferred by the regulator as it lends itself to more accurately prescribing assets lives.

68 The Panel considers that a composite life for the Central Office is not now considered the most appropriate approach for regulatory purposes, given that:

(1) detailed information is now available on the functional components.

(2) each functional component of the Central Office has its individual estimated useful life.

(3) each functional component may be replaced thereby extending the life of the Central Office.

69 An approach that more explicitly links the useful life of the operational components of the Central Office to the calculation of the life of those components is preferred.

70 The lives of the functional components were arrived at through informed discussion between the Applicant's engineers and Dr. Elfar, incorporating the manufacturers' life and support estimates, together with the specific experiences of the company. In examination Dr. Elfar supports this by saying:

> *"These are according to discussions with the engineers, mainly Mr. Ed Layne and the Engineers and from perspective and I think Mr. Layne in his – I am not sure whether in his testimony or in his affidavit went into some things, but this is just the estimate of the various functions or components we*

have had discussions on the CPU and we come to the reasonable life of the CPU. In discussion somebody would say, this is the computer which is life, let's give it four or five years, and then I come and say this and that and then we come to common ground, so to speak on that". (Page 453 of the transcripts)

71 Dr Elfar acknowledged that the separation of the Central Office into its respective functional components and applying appropriate lives to these components would be the more ideal approach, rather than combining them into one Central Office. He commented on this approach at page 367 of the transcripts:

"the approach which is used here is an average approach. What you are saying is true. The better approach of course is to break down the switch into very large numbers of units and depreciate each unit separately. That is our ultimate goal, but these things would be very expensive to administer and to estimate"

72 Further at page 544 he said:

"Mrs. Gittens, at one point suggested and asked can we do it another way, can we break the central office account into the seven functional components, and I replied Yes, if we do that then at that time the fifteen would be the life which the commission would issue and that fifteen what would be the company would go back in its books of account and reshuffle the accounts for the different central offices to align them, and create new accounts with new numbers for these seven, and then there will be a different life estimate for every functional component, where it will be prescribed and the company will not like it."

73 The approach the Commission requires the Applicant to adopt is to create seven (7) separate sub-accounts representing each functional component of the Central Office. This should not create a large number of units and sub-heads and should not lend itself to the expense and substantial additional work Dr. Elfar alluded to.

74 This would also allow the incorporation of the vintage information pertaining to the individual functional components, which Dr. Elfar said at page 380 of the transcript:

> *"When I came this time, I have to profess I was happily surprised that I had lots of data which we had not before and the company had heeded my advice last time because I advised the company before, after the completion of the 93, study, it would be nice to have for example, the central office investment, the investment pertaining to the different function of components so that we can do a better study. It would be better to have the vintage information so that we can have more feel of what's in that account and we can do some analysis on it".*

75 The main duty of the service provider as stated in the PUB Decision of 1986 (page 2) is to obtain "*as reliable as possible an estimate of the useful service life of all plant and machinery."*

76 The Commission recognises that lives cannot be estimated by any one universal formula that can be applied in every jurisdiction. Nevertheless the most universal and objective standard on which estimates can be applied is the manufacturers' lives. However these must be tempered in each jurisdiction by the Applicant's experiences and prevailing physical circumstances.

77 In the event, we therefore set the useful lives for the Central Office functional components as follows:

- CPU at 7 years.
- Switching Network at 10 years.
- Trunk Peripheral Modules at 15 years.
- Line Peripheral Modules at 15 years.
- Software at 10 years.
- Fibre Optics Electronics at 15 years
- Central Office Power Systems at 20 years.

78 As this Panel would like to be able to deduce with a greater degree of certainty the impact the newly prescribed lives for the functional components will have on the depreciation expense and as it is presently unable to do so on the limited information before it, in this regard the Panel hereby orders as follows: -

> That the Applicant provide a Depreciation Expense and Reserve Imbalance Position as presented in Table 5-1 on page 118 of the 1998/ 99 Study, using the lives prescribed by this Decision. This Table, together with the necessary explanatory notes, must be submitted to the Commission within 45 days of the date of this Decision. On receipt of this information the Panel may of its own motion, review this asset category.

STATI ON APPARATUS

79 The asset Station Apparatus includes Station telephone sets, Small Private Branch Exchanges (PABXs), Radio equipment, Telex, Key System Units (KSUs), and Miscellaneous equipment.

80 The Applicant has proposed that the service life for this asset be represcribed from 14 years to 8 years.

81 The main sources of evidence presented were in the affidavit (page 18) of Mr. Layne and in the 1998/ 99 Study (pages 57–63) prepared by Dr. Elfar.

82 The main reasons presented in the request for a revision in the life of the Station Apparatus was the rapid technological developments

in the industry for both residential and business telephone sets, the physical wear of the existing machines and the estimate of the life analysis study conducted. See page 18 of Mr. Layne's affidavit.

83 In the 1998/ 99 Study Dr. Elfar supported the statements of Mr. Layne identifying some of the specific technological innovations seen in the industry to date and found in models used by the Applicant. Since then, the company's main supplier, Nortel Networks, had introduced the Meridian family of telephones, and previous models had been discontinued.

84 The Applicant in evidence stated that current Meridian 8000 series which carry such features as caller identification, caller list, personal directory of fifty (50) phone numbers, secured numbers for personal codes and Super Flash and Intelligent View System, was in high customer demand, and the company had no choice but to keep pace with the developments and manufacturer discontinued phones are therefore being phased out by the company.

85 Mr. Layne in his affidavit, and at pages 112-113 of the transcripts, as well as Dr. Elfar in the 1998/ 99 Study, stated that manufacturers were no longer producing the durable phone capable of lasting ten (10) years but were rather developing inexpensive, designer, throwaway phones, which now tended to last no more than three (3) to five (5) years.

86 The 1998/ 99 Study also reported that an analysis of the average number of telephones replaced for maintenance purposes on an annual basis, over the last five (5) years, was 25,000. This represented 25% of the installed based of 100,000 phones.

87 The actuarial analysis conducted for the service lives of telephone sets on this account produced historical life indications of 11 to 12 years.

88 Liberalisation of the telecommunications market was mentioned by Dr. Elfar as an additional factor that warranted a re-prescribing of a shortened life for the Station Apparatus. This statement was supported by Mr. Layne in his testimony (page 38 transcripts). He said:

> *"the opening of the market will continue to shorten the useful lives of the asset in question station apparatus. Because there will be more choices out there and the customers will want to exercise their right to that choice"*

89 The estimate produced through the actuarial analysis is supportive of a shortened life being attached to the Station Apparatus asset. The study was based on the retirement history of the asset and estimated a life of eleven (11) to twelve (12) years. The company however is requesting a life of 8 years.

90 In the 1994 decision, the PUB ruled that Station Apparatus be prescribed a useful life of 14 years. The PUB disaggregated telephone sets from other equipment captured in this asset category and noted that only 28% of Station Apparatus was telephone sets. It would have been helpful to the Panel if similar disaggregation was presented in the 1998/ 99 Study.

91 The 1998/ 99 Study in its actuarial analysis estimated a life estimate of 11-12 years for station apparatus. However the study does not distinguish between telephone sets and other equipment captured in this asset category.

92 Evidence led in the 1998/ 99 Study on page 59 further noted:

> "*In recent years all manufacturers have gotten out of the lease phone business. They are no longer manufacturing durable phones for the lease market capable of lasting in excess of 10 years. Instead they are manufacturing inexpensive, designer, throwaway phones with lives in the region of 3 to 5 years.*

93 This statement is unsubstantiated. The Panel would have been more impressed had we seen exhibits of the phones referred to, given evidence of costs and an explanation for the high defect and repair rate. Was this as a result of irreparable technology failure, the Applicant's inability to repair, or customer abuse?

94 In the absence of empirical historical data indicating the ratio of telephone sets to other equipment, and in the absence of any data with respect to other equipment, we are not persuaded that the future technological considerations outlined with respect to telephone sets apply to all equipment in this group.

95 There being insufficient evidence to support a life of 8 years the Panel will be guided by the actuarial study which would have incorporated the technology and maintenance trend first identified by the Applicant in 1992 and occurred in the period up to the time of the 1998/ 99 Study.

96 We fix a life of 11 years for this asset group.

DROP AND BLOCK WIRING

97 The company has proposed that the service life for this asset be changed from 20 years to 15 years.

98 The evidence with respect to this asset group was presented in the affidavit (page 20) of Mr. Layne and in the 1998/ 99 Study (pages 75–76).

99 The main reasons presented were the historical experience over the past twenty years, the design and make-up of the cable, e.g. of steel with no protective sheath or gel protection, customer request for relocation, pole replacement, accidents with trucks, vehicles, and new cable installation underground.

100 The 1998/ 99 Study at page 75 indicated there were no major technological changes occurring in this asset group and there had been little retirement of assets from this account. The actuarial analysis on this account did not provide any useful historical indication of its life, but as it was a "*chattel*" its useful life tended to be less than that of the aerial cable. This seems not to support an application for a reduction in life.

101 Under examination Mr. Layne said:

> "*It would be extremely difficult to give the life span of Drop Wire. You are talking about an item that would probably cost less than $50 and go into the detail which you are suggesting to me would not make a lot of sense*"

102 The Panel finds difficulty in justifying a reduction solely on the grounds that Drop Wiring is less robust than Aerial Cable.

103 It is determined that Drop Wiring will retain a useful life of 20 years.

LARGE PABX

104 The Large PABX system represents equipment located on the customer's premises designed to accommodate in excess of one hundred (100) telephone lines. The Nortel Networks SL1, and Meridian 1 and the Mitel SX family are the main types of systems within this group. The company proposed a change of life from 15 years to 10 years.

105 The evidence presented was in the affidavit of Mr. Layne and in the 1998/ 99 Study (pages 65 – 72).

106 The main reasons presented for a revision of this category were the technological developments of the product, the physical wear of the existing machines, customer preferences and the estimate of the life analysis study conducted.

107 Earlier systems had all been replaced over the last ten (10) years except for one early digital SL-1 system. In fact the longest surviving SL-1 lasted no more than twelve (12) years. Even the newer Meridian-1 PABXs installed in the late 1980s to early 1990s had already been replaced.

108 The recent trend was customisation of the PABX systems to the customer's requirements. When that system went out of use, the Applicant attempted to reuse these PABX systems, wherever possible, but it was difficult to identify other establishments requiring a similar system, or used as spares, but this had its limitations.

109 Annex E-1 of the 1998/ 99 Study (page 70) showed the rate at which a few PABX customers changed their equipment, with Hilton

Hotel and Sandy Lane cited as examples of early demise, but which was caused by circumstances not associated with the equipment life. The Panel does not accept this as a factor that universally reduces the life of this asset. We did not have the benefit of evidence showing the percentage of the total population of PABXs that the figures in Annex E-1 represents.

110 In any event, it would be thought that the Applicant, as a prudent business with legal, financial and accounting departments, would protect itself against unreasonably short lives of this equipment caused by the vagaries of clients, for these in fact have little or nothing to do with the useful lives of equipment. In other words, it is unreasonable to ask the whole body of consumers to bear the depreciation cost of highly specialised equipment whose life is prematurely ended by the acts of its hirer.

111 Liberalisation of the telecommunications market was mentioned by Dr. Elfar as an additional factor that warranted a represcribing of the life for the Large PABXs but the actual qualitative effect was not presented. In addition a nexus between the liberalisation and the shortening of lives was not presented by the Applicant.

112 This leaves the Panel with the actuarial analysis in the 1998/ 99 Study at page 67 which produced a historical life indications of mostly in the range 9 to 11 years. The Panel finds this, along with technological changes, was the only cogent evidence presented in support of the shortening of the life of this asset group.

113 The Panel therefore prescribes a life of 11 years for this asset.

AERIAL CABLE

114 Aerial cables are suspended between poles, attached to buildings and may be used as subscriber or trunk cables. The Subscriber Cable extends between the Central Office and the subscriber premises. The Trunk Cable is used to interconnect Central Offices. This asset is fully outlined in the 1998/99 Study at page 79. The Applicant has proposed a re-prescription from 20 years to 17 years.

115 The main sources of evidence presented were in the affidavit (page 21) of Mr. Layne and in the 1998/99 Study (pages 79–85).

116 The main reasons were:

- Environmental effects
- Distribution network deterioration
- Growth requirements and inadequate capacity
- Cable re-routing and public improvement
- Cane fires and accidental damage
- Relocation of cable underground

117 Mr. Layne in his affidavit at page 22 stated that in 1994 the company instituted a policy requiring that all cables greater than 200 pairs be installed underground. A significant portion of this cable would have been less than fifteen (15) years old.

118 The aerial cabling was also affected by various road improvement projects going on across the country. Between 1994 and 2001 approximately 65% of this had been replaced. The remainder of this replacement was planned over the next four years.

119 Mr. Layne indicated that in addition aerial cable was continually exposed to the elements, making them susceptible to physical damage and subsequent early retirement, although in his evidence he said that the use of silicon gel in the joints and boxes had substantially cured this defect.

120 The actuarial analysis conducted for the service life of this account data, produced historical life indications of 27 to 33 years. Dr. Elfar stated in the 1998/ 99 Study at page 81 that this result was not indicative of the future life given the retirement factors identified.

121 Only under examination did Mr. Layne indicate at page 61 of the transcript that the actuarial study was conducted on data that was incorrect i.e. labour element of the retirement of the aerial cable was not recorded. At page 60 of the transcript he said:

> *"The cable is retired but in many cases the labour is not retired so what has happened here in this particular cost centre is that we have under recorded the retirements of our cables and hence the historical analysis done by Dr. Elfar would have indicated a life which would be much longer than what should have been the case had we been accurately recording the retirements".*

122 However Mr. Cochrane noted on this aspect at page 301 of the transcript:

> *"In my professional opinion it was not material to the asset records of the Company……. and should not have any material effect."*

123 This is a direct contradiction to Mr. Layne and weakens the argument for reducing the life of this asset.

124 The estimate produced through the actuarial analysis is not supportive of a shortened life; it actually produced a range beyond the

currently prescribed life. The reasons given for the variance between the actuarial estimate and the prescribed figure were unclear.

125 Page 111 of National Association of Regulatory Utility Commissioners, "NARUC", in its text "Public Utility Depreciation Practices", August 1996, states:

> *"Historical life analysis is the study of past occurrences that may be used to indicate the future survivor characteristics of property. Accumulation of suitable data is essential in an historical life analysis. As discussed in the previous chapter, the detail available in the data determines the kinds of analyses (actuarial v. simulation) that can be performed. Understanding the data is necessary in order to assess the limitations and application of the data in reflecting future events. Informed judgement plays a major role in determining how the data should be interpreted and used.*
>
> *Actuarial analysis is the process of using statistics and probability to describe the retirement history of property. The process may be used as a basis for estimating the probable future life characteristics of a group property.*
>
> *Actuarial analysis objectively measures how the company has retired its investment. The analyst must then judge whether this historical view depicts the future life of the property in service. The analyst takes into consideration various factors, such as changes in technology, service provided, or capital budgets."*

126 The steps taken to reduce the impact of the factors influencing the life of aerial cable, put simply were:

(1) Placing external plant underground.

(2) Introducing gel into joint, boxes, etc.

(3) Establishing a Forecasting department to work with the Engineering department, private developers and government in determining the cable capacity to be

deployed over a 20 year forecast. Generally, the Engineering department will erect external plant based on the twenty year forecast for a particular area.

(4) Undertaking a cable rehabilitation programme, leading to retirements of old cable.

127 The evidence presented is in part contradictory, and raises questions on the credibility of the Applicant's accounting system and on the reliability of the information presented on this asset. Moreover, the evidence presented does not support the proposal made for the re-prescription of the life of the asset from the 20 years to 17 years.

128 It is ordered that the life of this asset remain at 20 years.

COMPUTER EQUIPMENT

129 The Applicant's case for the Computer Equipment asset account is set out in the 1998/99 Study at pages 96-110. The company has proposed a re-prescription from eight (8) years to six (6) years.

130 In addition there is the affidavit of Mr. Hughie Walker, Manager Computer Services.

131 The evidence was based primarily on the massive information requirements of the company, the rapid technological developments in the information processing industry, the need to respond to increasing customer requirements and the life analysis study.

132 The actuarial analysis did not support a shortened life being attached to this asset. The analysis was based on the retirement history of the asset and estimated a life of twelve (12) to fourteen (14) years.

133 The variance between the actuarial life estimate and the proposed life of six (6) years however was explained by the company to be the result of its assumptions of the technological developments likely to impact on the industry in the future. This was made clear in Mr. Walker's affidavit (page 13), where he stated that:

> *"the results reflected in the analysis provided by Dr. Elfar at page 102 of the study reflect historical life indications of mainly 12 to 14 years and cannot be said to be realistic when considering the functional requirements of present and future computer equipment and the rapid technological developments in this area."*

134 We also accept the evidence of Mr. Walker that:

- The life span of computer hardware has declined steadily.
- That the Applicant has embarked upon a necessary upgrading programme.
- That in its type of business the Applicant's relies to a large extent on computerised information.

135 Having considered all the evidence presented to the Panel, we prescribe a life of 6 years for this asset group.

MOTOR VEHICLES

136 The company has proposed that the salvage value for this asset be re-prescribed from 30% to 15%. According to the authors of 'Public Utility Economics' Garfield and Lovejoy, 1994 by Prentice-Hall, Inc.

> *"Salvage value means the amount received for property retired, less any expenses incurred in connection with the sale".*

137 The evidence presented included a letter from Mr. Anthony Edwards, Auctioneer, and the 1998/99 Study (pages 111–115). He stated:

> *"Prior to 1995, a seller may have been able to recoup in the region of 50%–60% of the original cost of a 5-year old medium range vehicle. In my opinion from 1999 onwards market conditions have indicated that proceeds now approximate to 15% of the original cost."*

138 The evidence supports a reduced salvage value for the Motor Vehicles asset group which we prescribe at 15%.

CONCLUSION

139 At page 2 of his closing address, Mr. Cheltenham said "In the application the company, Cable & Wireless BARTEL Limited, continued as the amalgamated company Cable & Wireless Barbados Limited". No application was made for an amendment to the name of the Applicant. In our view, despite this oversight, the new company succeeds to all the "Choses in action" relating to the old and will be bound by this decision.

140 We have carefully considered the record, despite some omissions, we are satisfied that it is substantial enough for us to fully understand the evidence given and for us to appreciate the Applicant's and Intervenor's case.

141 The addresses were considered.

142 The Panel has determined that the useful service lives of the following assets will be as follows: -

Buildings - Account #212-1 - 70 years.

Central Office - Account #221-1

CPUs - 7 years.

Switching Network - 10 years.

Trunk Peripheral Modules - 15 years.

Line Peripheral Modules - 15 years.

Software - 10 years.

Fibre Optics Electronics - 15 years.

Central Office Power Systems - 20 years.

Station Apparatus - Account # 231-1 - 11 years.

Drop & Block Wiring - Account # 232-7 - 20 years.

Large PABX - Account # 234-1 - 11 years.

Aerial Cable - Account # 242-1 - 20 years.

Computer Equipment - Account # 261-2 - 6 years.

Motor Vehicles - Account # 264-1 - 5 years with a salvage value of 15% of cost.

A Formal Order is attached hereto.

143 The Panel has decided to hand the decision out to the Parties.

144 The Applicant will be heard as to costs.

Dated this 25th day of October 2002.

Justice Frank King
Chairman

Mrs. Vivian Anne Gittens
Deputy Chairman

Mr. Glyne Barker
Commissioner