

ICTA FLLRIC Public Consultation
Response to Further Interrogatories
REDACTED

REQUEST: ICTA, 20 August 2004

DATED: 30 August 2004

ITEM: ICTA-CW 2-1

QUESTION: Describe in detail the “tilted annuity approach” referenced to in response to ICTA-CW 1-4.

REPLY: A tilted annuity approach to annual capital charge factors (including depreciation and cost of capital) takes into account annual changes in asset prices. For this reason it better approximates economic depreciation than other forms of depreciation.

If input prices are expected to change at a rate of i percent per year, and letting RR represent the “revenue requirement” needed in order to recover the total costs of the investment, then the following condition must hold, where $PV(RR)$ is the present value of the revenue requirement:

$$(1) \quad PV(RR) = \frac{C}{1+r} + \frac{C(1+i)}{(1+r)^2} + \dots + \frac{C(1+i)^{t-1}}{(1+r)^t}$$

Let $a=(1+i)/(1+r)$ and $b = (1+r)^{-1}$; (1) becomes:

$$(2) \quad PV(RR) = Cb(1 + a + a^2 + \dots + a^{t-1})$$

Multiplying both sides by a yields:

$$(3) \quad PV(RR) * a = Cb(a + a^2 + a^3 + \dots + a^t)$$

Subtracting (3) from (2) we obtain:

$$(4) \quad PV(1-a) = Cb(1-a^t)$$

Substituting a and b into equation (4) and solving for C we obtain:

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$$(10) \quad C = \frac{\left[PV(RR) \frac{1 - \left(\frac{1+i}{1+r} \right)^t}{1 - \left(\frac{1+i}{1+r} \right)^t} \right]}{(1+r)^{-1}}$$

C is the first-year value of a series that meets the following conditions: (1) the series changes at a rate of g percent per year, and (2) the present value of the series equals the present value of the revenue requirement.

The attached Excel spreadsheet provides a numerical example of the tilted annuity approach to annual charge factors.



ACF Sample.xls

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ITEM: ICTA-CW 2-2

QUESTION: With regards to the company's response to ICTA-CW 1-16, provide examples of "modern equivalent assets" (MEAs) that would have a "similar structure" to historical assets.

REPLY: C&W simply meant that the MEA serves the same function and is employed in the same way as the asset which it is replacing in the costing exercise.

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ITEM: ICTA-CW 2-3

QUESTION: Provide the actual planning horizon adopted by C&W's engineers for each of the network elements listed in response to ICTA-CW 1-5.

REPLY: C&W engineers do not adopt a planning horizon separately for each network element. C&W engineers adopt an overall network planning horizon of three to five years when considering investment decisions.

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ITEM: ICTA-CW 2-4

QUESTION:

- a) Has C&W or any of its affiliates undertaken any CVR studies for any of its operations in any part of the world? If so, identify the entity producing the study, the purpose of the study, and the date of the study.
- b) Provide a copy of the CVR study or studies that best illustrates the approach C&W is proposing in this proceeding.

REPLY:

a) We are aware that our C&W affiliate in Bahrain--Batelco, in which C&W plc has a 20% holding--has undertaken CVRs. These studies are confidential to Batelco. We note that other C&W staff have had previous work experience in building CVRs.

b) We attach an example of a CVR. This particular example concerns HR costs where the volume driver is full-time equivalent staff (FTEs). CVRs are designed to provide greater specificity of the characteristics of fixed and variable costs. As we have mentioned elsewhere, the use of CVRs in the FLLRIC studies under our proposal will be limited to opex and non-network asset costs. CVR analysis will complement the activity-based costing that will be used to allocate opex and non-network asset cost. Note that the attached example is not a CVR that will be used under our proposal, nor is the data at all representative of C&W in the Cayman Islands. It is only an example of the format for a CVR.



CVR HR
example.doc

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ITEM: ICTA-CW 2-5

QUESTION: Explain in general terms how a LRIC model might be constructed so as to account for the “real world organic nature of network growth,” as noted by C&W in response to ICTA-CW 1-22.

REPLY: There are a number of ways in which a LRIC model could be constructed to account for the real world organic nature of network growth. Following is a list of some of the ways:

1. Cable and equipment sizes would reflect the actual mix of cable and equipment sizes employed. For example, consider a cable route that currently has two 400 pair copper cables because the route started with a 200 pair cable, but over time traffic over this route grew, and so the company installed a second cable of 200 pairs. A LRIC model that accounts for the real world nature of growth would model this route using two 200 pair cables – instead of the hypothetical LRIC model that might use one 400 pair cable in this route.
2. Location of cable routes (or towers in the case of mobile services) would reflect actual current locations rather than what might result from some hypothetical least-cost routing optimization technique. An optimization exercise would not account for how traffic actually grew over time, it would simply look at where customers are today, and build facilities to those customers. However, in the real world a carrier’s network grows over time, building facilities to customers as needed.
3. Technologies would be mixed. In the real world, even in extremely competitive markets, firms do not instantaneously replace all of their facilities with every improvement in technology. Thus, even the most efficient carrier’s network will reflect a mix of technologies at any given time.

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ITEM: ICTA-CW 2-6

QUESTION: In response to ICTA-CW 1-24, C&W states the following:

[D]emonstrable inefficiencies can be identified using appropriate benchmarking analysis (e.g., ratios of line per employee), statistical analysis (e.g. stochastic frontier analysis), mathematical techniques (e.g. data envelope analysis), direct measurement of costs, and time and motion studies. Costs can be adjusted downwards if such inefficiencies are identified.

Is C&W advocating that the above proposed techniques to be applied to the population of C&W's assets, or to some subset or sample of C&W assets? If the proposed techniques are applied to a sample of C&W assets, how does the company propose the sample be identified?

REPLY: C&W's believes that the only costs that may be subject to efficiency adjustments are the opex and non-network assets. The network assets will arise from a bottom-up model that, by construction, is efficient.

C&W does not believe that any efficiency adjustment will be large as the company has not been subject to rate of return regulation in the past and was incentivized to keep costs low. However, in the first instance, we would suggest that some form of benchmarking take place. If, then, the Authority had some reason to suspect that there were some embedded inefficiency in the data inputs, it could request C&W run a more sophisticated technique to confirm whether any inefficiency existed or not.

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ITEM: ICTA-CW 2-7

QUESTION: With regards to the company's response to ICTA-CW 1-38, provide a complete list of the company's asset lives that are used for financial reporting purposes.

REPLY: We note that the company's asset lives were filed in the FAC proceeding in April. For the Authority's ease of reference we provide them again here on a confidential basis.

[File redacted]