

Digicel

The Bigger, Better Network.

**Digicel's Response to the Public Consultation Paper on
Retail Pricing Regulation in the Communications Sector**

Published by the Committee of the Bahamas Telecommunications Company Ltd

August 3, 2009

Table of Contents

1	INTRODUCTION	3
2	RETAIL PRICES IN THE BAHAMAS	4
2.1	TARIFF REBALANCING	4
2.2	BUNDLING ACCESS AND CALLS	6
2.3	INCIDENCE OF CHARGING.....	7
3	FUTURE APPROACH TO RETAIL PRICE REGULATION.....	8
3.1	IS THE CURRENT APPROACH TO RETAIL PRICE REGULATION EFFECTIVE?.....	8
3.2	OBJECTIVES OF PROPOSED PRICE REGULATION	8
3.3	FORM OF REGULATION – RATE OF RETURN VERSUS PRICE CAPS.....	8
3.4	INTERIM PRICING FRAMEWORK	9
3.5	SPECIAL OFFERS OR DISCOUNTS.....	9
4	DESIGN OF PRICE CAP REGIME	10
4.1	HOW IS THE STARTING PRICE SET, AND X FACTOR	10
4.2	FORM OF INDEXATION.....	12
4.3	DURATION OF PRICE CONTROL PERIODS	12
4.4	EXTERNAL (EXOGENOUS COST FACTOR).....	13
4.5	QUALITY OF SERVICE.....	13
4.6	CARRY OVER OF HEADROOM.....	13
4.7	INFORMATION REQUIREMENTS.....	14
4.8	BASKETS OF SERVICES	14
5	A NOTE ON THE BENCHMARKING ANNEX	15

1 INTRODUCTION

Retail price controls in telecommunications should gradually disappear following liberalisation. It is sometimes recommended that weak price controls are placed on certain important services that are likely to attract competitive entry – as a precautionary measure. Aggressive controls – those involving real price reductions – should be reserved for services that would involve monopolised provision past the medium term in the absence of price controls but given a prohibition on anticompetitive conduct and the prevention of mergers and acquisitions that would have a similar result. In Digicel's view there are few if any such services in telecommunications. Thus, we believe that retail price controls should be seen as a temporary phenomenon where most such controls are largely precautionary.

Price controls are generally regarded as the heaviest regulation that can be imposed on a firm. It is an unavoidably crude instrument of regulation – especially retail price controls. It involves the design of an incentive contract which is meant to be a surrogate for competition where competition does not exist and is not considered viable in the foreseeable future. It should only be imposed where the firm to be regulated has enduring dominance in the relevant retail market which enables it to charge excessive prices to retail customers currently and into the future. Yet in several jurisdictions in which Digicel operates RPI-X price capping is employed as a cornerstone of regulation. Digicel believe the Bahamas should avoid falling into the same trap.

The evidence suggests that regulators are somewhat seduced by price capping – Digicel believes that there is a lot more price capping around the World than is in the Public Interest. Regulators need to resist the temptation of price capping a service unless there is a clear and unambiguous case in favour of it. It needs to be remembered that price controls tend to make markets unattractive for new entrants to enter and invest in; i.e. markets that are largely monopolised are more likely to remain so if retail price controls are administered. If future competitive entry is a distinct possibility in the absence of price control then price control should be avoided. If it cannot be avoided due to political reasons price control should be non-aggressive; adopted as a precautionary measure only. Real price reductions in markets that are potentially subject to competitive entry undermine the workings of the price signalling system and prevent markets from working properly.

Digicel suggests the approach to price capping outlined in the consultation to be somewhat ambitious given the very limited regulatory resources available based on the revenue base of the Bahamian telecoms sector. Digicel recommends a simpler approach to price capping – a pragmatic approach – which we outline briefly in this response document.

2 RETAIL PRICES IN THE BAHAMAS

2.1 Tariff rebalancing

Given the information provided by NERA which we have updated assuming a real cost increase per access line per annum of 3%,¹ Digicel's initial calculations suggests that some rebalancing is required to remove the need for subsidies. While New Providence is in surplus and deficits in the other islands appear to more than cancel this surplus out.

It is important that the authorities commit to a program of rebalancing.

Island	NERA's 2005 estimate average value of access lines and line cards per island	Allowing for 3% real cost growth $((1+r)^4)$
Abaco	\$906.00	\$1,019.71
Acklins	\$3,019.00	\$3,397.91
Andros	\$889.00	\$1,000.58
Bimini	\$1,334.00	\$1,501.43
Cat Island	\$2,308.00	\$2,597.67
Eleuthera	\$944.00	\$1,062.48
Grand Bahama	\$960.00	\$1,080.49
Mayaguana	\$4,103.00	\$4,617.96
New Providence	\$511.00	\$575.14

Where an access deficit exists the solution supported by economic experts, the World Bank, the ITU, the OECD and the European Commission, is to:

- Rebalance prices so they are not substantially less than cost
- Work with the incumbent to provide one or more packages for low demand subscribers. "Self select" schemes (e.g. a low user scheme) are far superior in this regard as they do not impose high administrative costs, are not subject to moral hazard problems and poverty traps, and are unlikely to impose net costs on the network operator.

¹ We note that this will likely understate the real cost increase given that the price of copper has almost doubled since 2005 and copper is a major element in explaining loop costs.



Where there is an access deficit (i.e. access revenues are less than access costs) rebalancing is the strongly recommended policy of the World Bank and the ITU.

“Tariff rebalancing is a necessity for all governments and operators.”² “Tariff rebalancing is a fundamental aspect of a competitive market”.³

“A critical step towards competition in international services is to rebalance the incumbent’s retail tariffs so that they roughly reflect industry cost structures. This is necessary for reasons of economic efficiency as well as for the financial viability of incumbents and new entrants”.⁴

“Whatever the benefits from subsidizing access prices, economists agree that rebalancing tariffs can produce significant economic gains. Table 1 sets out estimates of economic gains from tariff rebalancing from four separate studies”.⁵

Table 1: Estimates of Welfare Gains from Tariff Rebalancing ⁶

Study	Country / Service Type / Year	Estimated Welfare Gains (US\$)
Crandall and Waverman ⁷	United States / All / 1994	\$6.42 Billion
Munoz ⁸	Spain / Local & National / 1996	2621.84 Million 1993 Pesetas
Lewis Perl ⁹	United States / All / 1988	\$4,278 Million (1984 Dollars)
Griffin and Mayor ¹⁰	United States / Local / 1987	\$685- \$800 Million

² ITU-D, Study Group 1, Second Study Period (1998-2002), Final Report, p.5: <http://www.itu.int/pub/D-STG-SG01.12-2002/en>

³ *Ibid*, p.27.

⁴ “Competition in International Voice Communications”, Policy Division Global ICT Department Global (a joint World Bank/IFC department), January 2004, Report No. 2 76 71, p.36

⁵ “ICT Regulatory Toolkit”; an online document funded and supported by the World Bank and the ITU: Module 2, Section 5.6 Tariff Rebalancing. <http://www.ictregulationtoolkit.org/en/>

⁶ *Ibid* p.105.

⁷ Crandall, Robert and Leonard Waverman, Talk is Cheap: The Promise of Regulatory Reform in North American Telecommunications, pp. 90-91.

⁸ Munoz’ study computed the welfare gains from a 20 percent increase in local rates accompanied by a profit-neutralizing fall of 7 percent in national rates. See Teresa Garin Munoz, “Demand for National Telephone Traffic in Spain from 1985-1989: An Econometric Study using Provincial Panel Data”, *Information Economics and Policy* 8 (1996) 51-73.

⁹ Lewis J. Perl, “Economic Consequences of Competition in Telecommunications,” paper presented at the International Telecommunications Society Seventh Bi-Annual Conference, Cambridge, Massachusetts, July 1988, p. 10.

Economic studies have shown that tariff rebalancing is overwhelmingly in the public interest even if for certain narrowly defined interest groups it may not be e.g. those who make very few calls at present. This is why the second bulleted item above is usually considered an important aspect of tariff rebalancing.

Question 1: Is there a need for further tariff rebalancing in The Bahamas?

Question 2: Do you agree that the regulator should design a price regulation framework that enables tariff rebalancing? If you disagree, please state your reasons.

The regulation that enables tariff rebalancing is clearly in the public interest and indeed is necessary if liberalisation is to proceed on its merits.

Digicel is also of the view that present tariff structures may enable cherry-picking of business subscribers in the medium term by low cost wireless access providers such as is occurring today in some nearby jurisdictions with WiMAX and soon also similar wireless technologies. This would suggest that rebalancing should not involve increases in business access charges – rather the contrary – that average access revenues need to increase (the average of residential and business) while business access prices need to be reduced to avoid future cherry picking.

2.2 Bundling access and calls

Question 3: Are there benefits from introducing an option for monthly line rental at a lower price which excludes free local calls? If so, what type of plans for charged local calls would be most appropriate?

Where cross subsidies exist between usage services (which involve traffic sensitive costs) and fixed access (non traffic sensitive costs) there is great potential for competitive distortion and disadvantage to occur where other competitors can provide usage alone or usage and access possibly using different technologies. For this among other reasons usage and access pricing should not be bundled by regulatory obligation. If a firm wishes to bundle these services and it is not dominant in the provision of either of them or it has no anticompetitive implications, then it should be permitted to do so. Bundling should be a business choice and not a regulated one.

With liberalisation Digicel does not believe it is efficient that access and unrestricted local calls are bundled. It prevents the pricing mechanism from providing some control over usage costs.

¹⁰ Griffin, James M. and Thomas H. Mayor, "The Welfare Gains from Efficient Pricing of Telecommunications Services", *Journal of Law and Economics*, October 1987, pp. 465-87.

At least multiple bundles should be offered which entail specified limits to the amount of local calls that can be made as part of any particular bundle. Subscribers can then select the scheme that suits them best. The design of such schemes should be primarily left to the operators although there are clearly universal service issues with the lowest call volume scheme such that we would expect the authorities to want to be consulted about the scheme.¹¹

Digicel believes that it is in the Public Interest that some level of metering is introduced for local calls. The pressures on universal service and the need for additional tariff rebalancing also support this recommendation. It will make it viable for self select schemes to be designed and offered to the public bringing substantial advantages and quite possibly with subsidies.

2.3 Incidence of charging

Especially in countries with a substantial number of lower income earners the CPP (calling party pays) model in regard to calls to mobiles has result in much higher mobile penetrations rates than the RPP (receiving party pays) model. Many such subscriber opt for the prepay options offered by MNOs. The economics of this are only starting to come to light now but it seems that mobile networks invest heavily in universal service (especially through subsidised handsets) and fund this through mobile termination revenues. There is now increasing evidence (both theoretical and empirical) from the new economic theory of two-sided markets that it is efficient for this to occur. There is also a suggestion that the power to set their own termination charge can result in mobile network operators (MNOs) setting a termination charge that is higher than is efficient.¹² This is in addition to the other very good reasons outlined in the consultation that on balance favour the CPP payment model over the RPP payment model.

Question 4: Should The Bahamas move to a caller-pays principle for all calls? If you disagree, please state your reasons.

Digicel believes a conversion to the CPP model for call to mobiles is in the Public Interest.

¹¹ Any level of bundling of services that involve traffic and non-traffic sensitive costs will typically require competitors to do likewise. To the extent that this pushes up entry costs it undermines incentives for new investment and competition.

¹² Efficient mobile termination charges need to be viewed in the context of the two-sided platform market literature and the ability of MNOs to enable network externalities to be internalised. An overview of this literature which began in 2001 with a paper by Rochet and Tirole is provided by Roberto Rosen, (2005), "Two-Sided Markets: A Tentative Survey", *Review of Network Economics*: Vol 4, (2).

3 FUTURE APPROACH TO RETAIL PRICE REGULATION

3.1 Is the current approach to retail price regulation effective?

Question 5: Do you agree that the historical approach to retail price regulation should be reformed in the newly liberalised environment? If you disagree, please state your reasons.

Digicel agrees that it is vital that discretionary control of prices should not be a feature of the Bahamian liberalised telecommunications section. In markets where there is thought to be an enduring problem with dominance which cannot be addressed by any other means than price control, a price cap mechanism is the accepted way of doing it, although even here much needs to be done to bind the authorities to the regulatory contract they agree.

3.2 Objectives of proposed price regulation

Question 6: Do you agree with the objectives proposed for price control regulation? If you disagree, please state your reasons.

Digicel agrees with the objectives proposed although we believe there has been an important omission which is that regulation should provide for private investment and the competitive process to prevent inefficient prices before considering a regulated solution.

Question 7: Do you agree with the Government's view that wholesale price regulation alone may not be sufficient to protect consumer interests in the present and near future?

Digicel agrees that some level of retail price regulation is likely to be in the Public Interest in the Bahamas. However, with new relatively low and falling cost access technologies, the growth of triple play cable TV in the Caribbean, we believe that retail price controls should be very limited. Digicel believes exceptions to this should be rare since aggressive price regulation is not only a proxy for competition; it is also a substitute for it as it discourages private investment by competitors.

3.3 Form of Regulation – Rate of Return versus Price Caps

Question 8: Do you agree with the proposal to adopt price cap regulation? If you disagree, please state your reasons.

Price cap regulation is clearly superior to rate of return regulation. However, along with the 'usual' price cap contract Digicel believes that contingency contracts should also be drawn up to

prevent the contract principles being undermined by unforeseen and unforeseeable events that occur after the price cap begins. The history of price capping suggests that they rarely work adequately as incentive mechanisms due to the authorities' inability to commit to them.

3.4 Interim Pricing Framework

Question 9: Do you agree with the proposal to introduce an Interim Pricing Framework in the short term? If you disagree, please state your reasons.

Question 10: What principles should underpin any Interim Pricing Framework for retail price regulation and on the nature of the interim arrangements?

Digicel is not in agreement with the proposed interim price controls. We believe they are cumbersome and not suitable for a period of transition to competition. Digicel suggests that a simpler price cap mechanism based on revenue weight prices which addresses the need for tariff rebalancing (lower business access charges and it seems somewhat higher residential access charges) should be preferred. The reference points would be existing prices and inflation and efficiency adjustments to the 2005 NERA access cost estimates.

Sub-caps can be placed on access to see to it that tariff rebalancing occurs. Where the authorities wish to prevent the pace of price rise in any service sub-cap can be used. This approach will not be as bureaucratic and will allow the regulated company some flexibility during the transition period.¹³

None of the regulators in the countries identified in the consultation have to date done very much more than this; they have not for example determined the incumbent's profitability or the efficiency with which it provides the services that are price capped.

3.5 Special Offers or Discounts

Question 11: Do you agree with the proposed regulation of special offers and discounts? If you disagree, please state your reasons.

Services that are potentially competitive in their supply should not as a rule be included in a price cap. If however services are included in the price cap which are potentially or actually subject to competition, such as for reasons of tariff rebalancing, then discounting practices that are designed to frustrate or damage the competitive process would normally be captured by ex

¹³ As a general rule Digicel does not believe it is good regulatory practice to require regulators to expressly "approve" things before the regulated firm can do them. Rules can and should be established and knowing these firms can choose their own strategies.

post competition law. In the absence of such a law equivalent ex ante rules can be fairly easily developed.

Digicel does not see the need for regulatory approval of discounts. If the service is subject to competition in supply and there are competition concerns, then the service would not normally be suitable for inclusion in a price cap. What is more, Digicel does not support regulatory rules that are not based on sound economic analysis that shows the practice to be anticompetitive.

4 DESIGN OF PRICE CAP REGIME

Question 12: Do you agree with the proposed form of the price cap shown above? Do you have views based on experience with price cap regimes on the application of a price cap with this broad form?

Digicel agrees that incentive based price caps are the appropriate way to regulate retail monopolised services. In practice there are very few retail markets in telecommunications that will remain monopolised following liberalisation and given a proper legal and regulatory framework; quite possible in the medium to long term none will exist. For this reason Digicel considers retail price controls in telecommunication will very soon be an anachronism although we appreciate they may be in the public interest for a limited number of services during the transition period following liberalisation. Rather, we see that price caps are increasing confined to monopolised sectors of utility industries like electricity and water.

4.1 How is the starting price set, and X factor

Question 13: Do you agree with the use of a 'building blocks' regime to determine starting prices under the price cap?

Question 16: Do you agree with the use of an X-factor to reflect expected productivity gains over the period?

Digicel's view is that it is unlikely to be in the Public Interest for the URCA to try to implement the exhaustive price cap program in the Bahamas. Digicel does not believe the authorities or their consultants attempt to undertake the work required to do this. Among other things, it seems likely to require that the value of the regulatory asset base be established and for the regulator to know the company's efficient operating costs. Both are large tasks beyond the capacity of many regulators.

None of the regulators in the countries identified in the consultation have done this and indeed most would admit that they do not have the financial resources or the highly experienced specialised economists who could do it. They have not for example determined the incumbent's profitability or the efficiency with which it provides the services that are price capped. In fact all

of them face institutional constraints which would prevent them from running a full price cap as outlined in the consultation on its merits.¹⁴ At one point the Consultation refers to the approach taken by the UK Office of Fair Trading (OFT) when investigating pay TV. The OFT has over 600 full time staff including a large number of economic experts.

The URCA may well be much better placed in terms of economic expertise than other regulators in the region, but in Digicel's experience complex regulations of this type in very small jurisdictions inevitably impose much higher risk of regulatory error. Even if a small regulator has the regulatory expertise to complete these tasks there would likely be only 1, 2, or 3 people closely involved in the work. In jurisdictions with much larger regulators and a rich history of undertaking complex economic work, many more experts are involved, multiple reviews are performed and this greatly reduces the error and misjudgement rate. Considering also that appeal systems in very small countries are typically not economic to use since regulated firms do not have the revenues for appeals to be commercially viable¹⁵ (notwithstanding the general institutional shortcomings of appeal bodies in small countries), Digicel is convinced that a simpler and less work intensive and hands on approach will greatly reduce regulatory risk and is likely to lead to a greater level of investment in telecoms in the Bahamas. In Digicel's view the Public Interest in the Bahamas would be served better if a less ambitious approach to regulation was adopted; not the sort of detailed price capping that the consultation envisages.

Without knowing the economic value of the regulated asset base and the firm's efficient operating costs and indeed its profitability¹⁶, imposing price level adjustments going in is untenable. A pragmatic alternative is based around relative productivity changes with the economy. This information would be the main basis for determining the value the 'X' in relation to input price inflation (IPI):

$$(1) \quad \Delta P = \Delta IPI - X, \quad \text{where}$$

$$(2) \quad X = \Delta TFP_{BTC} - \Delta TFP_{Bahamas} + Z, \quad \text{and}$$

¹⁴ See the seminal paper by Brian Levy and Pablo Spiller, (1994), "The institutional foundations of regulatory commitment: A comparative analysis of telecommunications regulation". *Journal of law, economics, and organisation*, 10, 2: pp. 201-246.

¹⁵ We note that it is usual for the appeal costs of the regulator and the appellant to be largely paid by the appellant. If the appellant wins the regulator may have to pay its costs but as it is itself largely funded by a tax on the appellant, the appellant eventually pays.

¹⁶ For an insight into the scale of the task see, OXERA, "Assessing profitability in competition policy analysis". Economic Discussion Paper 6, July 2003. A report prepared for the Office of Fair Trading.

$$(3) \quad Z = \Delta P \text{ Inputs}_{Bahamas} - \Delta P \text{ Inputs}_{BTC}$$

What would be needed is the total factor productivity (TFP) growth rate, which is the difference between the growth rate of the operator's outputs and the growth rate of its inputs.

The pragmatic solution is for prices going in to be those currently charged where X is set according to an estimate of productivity differential between typical telecommunications network operators and the economy in general.

4.2 Form of indexation

Question 14: Do you agree with the use of CPI within the price control formula? If you disagree, please state your reasons.

Question 15: Do you agree with the proposed use of the prior year's inflation rate as measured in the All Bahamas Price Index? If you disagree, please state your reasons.

Digicel suggests that some sort of input price index would be best, but CPI may be satisfactory where a pragmatic approach is used. The inflation rate from the last recorded period should be used as an estimate of the future rate. Digicel believes that experience favours a 6 monthly period rather than the inflation rate recorded for a full year.

4.3 Duration of price control periods

Question 17: What price control period do you think should be used? Do you believe that the appropriate price control period is affected by the proposed phasing in of competition in The Bahamas?

Retail price controls in telecommunications should gradually disappear following liberalisation. Price controls involving real price reductions should be reserved for services that would involve monopolised provision past the medium term in the absence of price controls but given a prohibition on anticompetitive conduct and the prevention of mergers and acquisitions that would have a similar result. In Digicel's view there are few if any such services in telecommunications. Thus, we believe that retail price control should be seen as a temporary phenomenon where most such controls are largely precautionary.

In theory the price capping approach is most suited to a 5 year period but with full liberalisation almost upon us Digicel cannot see any retail services which we can be fairly sure would still be monopolised in 5 years time given the caveats we outline in our introduction.

For the first price cap set by an authority there is a higher risk of significant error. Especially in the two to three years following liberalisation, the regulated firm's business environment and

that of its competitors can be expected to change fairly rapidly. There is also a greater risk that X will have been set at an inappropriate level due to forecasting errors.

Thus, where price capping is being introduced for the first time, Digicel respectfully submits that the first price cap should be set for 12 -24 months.

4.4 External (exogenous cost factor)

Question 18: Should a Z factor be included? If a Z factor is included what are some of the exogenous occurrences that should be considered?

Digicel considers it is especially important in small economies that the 'Z' factor is included in any price cap mechanism.

4.5 Quality of service

Question 19: Do you agree that quality control incentives should be built into price control regulation? What are the relevant key performance indicators (KPIs) that you consider could be utilised for monitoring quality?

At a network level one might expect quality of service tends to be a function of the technology, busy hour capacity and busy hour pricing. Digicel notes that in regard to price capping, however, there is recent evidence suggesting that price caps improve and do not degrade service quality.¹⁷

In practice, quality of service is a competitive parameter and one which Digicel has used very effectively to enter new markets. Unless the service is clearly not going to be subject to competition in the near to medium term Digicel believes that quality of service should be left to competitors to decide on.

4.6 Carry over of Headroom

Question 20: Should operators be able to carry over out-performance in early years into the later years within the same price control period?

Digicel believe that a regime that provides for carryover headroom is generally preferred among regulatory experts. Usually price cap regulation prevents nominal price rises from occurring earlier than specified dates, and should a nominal price decline be required (i.e. $X > \text{inflation}$) then this must occur not later than the specified dates; e.g. in 6 months intervals after the start

¹⁷ C. Ai, S. Martinez, and D. Sappington, "Incentive Regulation and Telecommunications Service Quality", *Journal of Regulatory Economics*, 2004, 26 (3), pp. 263–285.

of the price cap. The price capped operator should be allowed to carry forward the potential for price increases that it did not realise in the preceding calendar year periods.

Digicel believes that if carry-over is thought to be potentially damaging to the development of competition by allowing strategic low pricing of services then arguably the service should not be price capped at all. Price capping is not the proper mechanism to prevent predatory discounting.

4.7 Information requirements

Question 21: Do you agree with the initial thinking on the provision of information for use in price control regulation?

Digicel wishes to reiterate that we believe the approach to price capping outlined in the consultation is rather ambitious given the regulatory resources available.

4.8 Baskets of services

Question 22: Do you agree with the views expressed above on the use of baskets of services in retail price control regulation? Do you have views on the appropriate form of the tariff baskets to be used?

Digicel does not generally support the use of multiple price control baskets. However, where tariff rebalancing is occurring it is possible to separate the two policy goals – price capping and tariff rebalancing – by having two baskets, one being a price cap basket that includes only services and elements that are thought not to be subject to competition in the medium and long term; the other a rebalancing basket typically containing many retail services. By having these two baskets, it keeps the two mechanisms separate, which on the face of it has the advantage of assisting in not confusing the two issues – price capping and tariff rebalancing.

One of the advantages of price capping is that it gives the regulated operator flexibility to adjust its prices individually as demand and supply factors change. Sub-caps should seek not to undermine this flexibility, and thus the use of sub-caps should be restricted to situations where there is a strong political dimension which needs to be addressed, e.g. the pace of line rental increases.

5 A NOTE ON THE BENCHMARKING ANNEX

Digicel generally supports the use of Benchmarking provided the following provisions are taken into consideration. Where a regulator relies heavily on international price comparisons to regulate or benchmark prices (wholesale or retail) circumspection and analysis is required. One reason for this is because of two main classes of difference that occur with cross-country prices:

1. Differences in the cost of providing the service.
2. Differences in the way prices are constructed that are not directly related to cost.

Where regulated prices are to be determined by benchmarking with other countries, the authorities need to analyse prices under these two headings in order to determine any adjustments that need to be made to the price level they regulate. Without undertaking such an analysis the use of benchmarking to set wholesale or retail prices is prone to substantial error. In other words prices are rarely if ever directly comparable between network operators in different countries. In order to benchmark prices the authorities need to make adjustments to take account of cost and non-cost factors that explain pricing differences.