

11 August 2006

COMMERCE COMMISSION SUBMISSION:

To the: **Finance and Expenditure Select Committee**

On the: **Telecommunications Amendment Bill 2006.**

Introduction

This submission is from the Commerce Commission. The Commission was established under the Commerce Act 1986 ('the Commerce Act'). The Commission is an independent quasi-judicial body with responsibility for enforcement and regulatory control under a number of general and specific regulatory regimes set out in the Commerce Act, Fair Trading Act 1986 ('the Fair Trading Act'), Electricity Industry Reform Act 1998, Telecommunications Act 2001 ('the Telecommunications Act'), the Dairy Industry Restructuring Act 2001 and the Credit Contracts and Consumer Finance Act 2003 ('the the Credit Contracts and Consumer Finance Act').

The Commission is an independent crown entity and is governed by the Crown Entities Act 2004. It is not subject to direction from Government in carrying out its enforcement and regulatory control activities. The Commission has a quasi-judicial role when undertaking its adjudicative function. The Commission does not advise the Government on general policy matters, except when required to report to Ministers under relevant legislation. It performs its enforcement and regulatory control functions within the relevant statutory frameworks.

The purpose of the Commission is to promote dynamic and responsive markets so that New Zealanders benefit from competitive prices, better quality and greater choice. This purpose definition represents the Commission's summarised view of its various statutory responsibilities, according to the specific purpose of each piece of legislation.

In fulfilling its purpose the Commission's functions cover enforcement (investigations, litigation, and the provision of information to the public) and regulatory control (adjudication and reports to Ministers).

The Commission has a range of responsibilities including implementing key parts of the Telecommunications Act 2001 and its amendments. Under the current Act these include:

- Making determinations on disputes over access to any of the designated and specified services listed in Schedule 1 of the Act;
- Making determinations on disputes over price between the access seeker and the access provider for designated services only;

- Conducting pricing reviews of its determinations for designated services if requested to do so by a party to a particular determination;
- Undertaking costing and monitoring activities relating to the Telecommunications Service Obligations (“TSO”) and determining how these costs will be allocated to other industry players;
- Conducting investigations into the desirability of regulating additional services or amending the regulation of services where considered necessary, and making recommendations to the Minister of Communications; and
- Deciding whether to approve telecommunications access codes which have been submitted to the Commission by the Telecommunications Carriers’ Forum.

The Commission currently comprises six Members appointed by the Governor-General under section 9 of the Commerce Act, including the Chair, Deputy Chair and the Telecommunications Commissioner. There are also two Associate Commissioners appointed by the Minister of Commerce under section 11 of the Commerce Act and a Cease and Desist Commissioners (also appointed under section 9), with separate roles and powers.

The Telecommunications Amendment Bill proposes to expand the Commission’s functions and powers to include:

- implementing the accounting separation and information disclosure regime;
- making standard terms determinations for regulated services;
- developing industry codes where industry fails to do so; and
- providing for a wider range of enforcement tools.

The Commission wishes to appear before the Committee to speak to its submission.

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Section A:

General

The Ministry of Economic Development consulted with the Commission on implementation issues under the proposed telecommunications package as outlined in the Cabinet Paper released on 3 May 2006.

The package and the resulting Bill materially alter the Commission's role as the sector regulator. In particular, the Commission will lead the development of industry-wide standard offerings for an expanded range of access services, will be given powers of enforcement in respect of regulatory breaches, and will assume sector monitoring powers. These changes will require careful implementation by the Commission to ensure that the objectives of the legislation are met and the transition to the new regime is facilitated.

This submission proposes several changes to the Bill, which the Commission believes will enhance its implementation and reduce the scope for uncertainty of regulatory outcomes. Those changes are discussed in the general terms below and in more detail in Section B.

1 Access Pricing

The new and revised access services provided for in the Bill are the fully unbundled copper local loop service and the unbundled bitstream access service, along with complementary co-location and backhaul services.

The bitstream service in the Bill is a naked DSL service (bitstream without Telecom's PSTN). However, parties can apply for a variant of the service bundled with Telecom's PSTN service (bitstream with PSTN). All references in the Commission's submission to bitstream refer to the naked DSL service unless otherwise stated.

Competitors will be able to use the local loop and bitstream services to provide broadband voice and data products to residential and business consumers.

The resulting competitive dynamic should lead to a wider range of retail broadband offerings and to pricing pressure on market participants.

The Commission expects that in most instances, competitors will rely in the first instance on bitstream access as a market entry strategy rather than unbundled loops. Bitstream is an existing and well-understood wholesale product in the New Zealand market in comparison with unbundled loops. In addition, bitstream will be attractive to a wider range of competitors because of its lower capital requirements and the lower risk profile arising from the ability to use bitstream on a customer-by-customer basis without the need to achieve the economies of scale required for a multi-customer DSLAM investment.

At the same time, superior long-term welfare outcomes will arise where competitors are encouraged to move beyond reliance on bitstream, once they have achieved a sufficient level of customer uptake to make their own investments in DSLAMs and therefore to migrate from bitstream to unbundled loops. For this reason, the Cabinet Paper notes that the relativity between the unbundled loop and bitstream prices will be important to provide appropriate incentives for migration over time from bitstream to unbundled loops, leading to greater investment by access seekers in their own network facilities.

Access prices for these services must therefore be carefully set to allow Telecom to recover the efficient costs of its network investments, while at the same time providing incentives for entry by competitors and for a progressive shift to deeper levels of infrastructure competition, over time.

The Bill addresses these issues through the pricing principles for the access services. The unbundled loop service is to be priced on the basis of efficient forward-looking costs, while the bitstream services will be priced by the imputation of a retail price and the subtraction of the avoidable retail costs. In setting each price, the Commission will be directed to consider the relativities between them.

The Commission's view is that changes should be made to these pricing mechanisms to improve their workability and to reduce uncertainty as to their implementation.

In summary, the Commission proposes that:

- the unbundled loop service should be priced at efficient forward-looking costs (as proposed in the Bill);
- the bitstream service should be priced by adding to the unbundled loop price the additional costs of supplying the network elements and the functionality required for the bitstream service (to replace the retail-minus pricing principle).

The beneficial outcomes the Commission would expect if these changes are adopted would be:

- Telecom will recover the efficient costs of providing both the unbundled loop and bitstream services and will thereby retain appropriate incentives to maintain the access network and to continue to invest in network upgrades;
- Telecom's competitors will be able to make rational choices between the two services for market entry, based on a comparison of the cost differentials and the additional flexibility afforded by the loop service;
- The Commission will monitor the ongoing development of the broadband market and will respond to improved competitive conditions by adjusting the pricing relativities between the two access services to encourage competitors to make greater infrastructure investments, over time.

A detailed explanation of the reasons for the Commission's view and the suggested alternative pricing approach is contained in Appendix 1 to this submission.

2 *Broadband Markets and Bitstream*

The Commission expects that take-up of the unbundled loop service will occur primarily in CBDs and surrounding metropolitan areas where economies of scope and scale will be sufficient to support competitive entry.

The economics of the entry decision are such that competitors will typically, in the first instance, use the bitstream service to build their customer base. Bitstream will also be the likely entry point of choice for areas outside the CBDs and metropolitan areas where there is limited customer demand for high-speed services but insufficient scale to support the competitor investment required for an unbundled loop service.

To address both these needs, it is important at the outset that the bitstream service is available nationally regardless of differing competitive conditions in CBD/metropolitan and non-metropolitan areas.

The Bill provides for the unbundled loop service to be available nationally, whereas the availability of the bitstream service would potentially be restricted to geographic areas where there is only limited rather than effective broadband competition.

The practical problem with this approach is that there will be a period of uncertainty as to where the regulated bitstream service will be available until the Commission has reviewed the state of competition in key markets. That uncertainty will slow bitstream uptake and therefore delay the availability of benefits to consumers.

The solution the Commission proposes is that the bitstream service should initially be unconditionally available everywhere. Competitors will be able to choose between the bitstream and unbundled loop alternatives in all parts of the country from the outset.

If this approach is adopted, the Commission expects that there will be continuing rapid uptake of bitstream in all areas, but particularly in major urban centres. Uptake of unbundled loops will start slowly, primarily in high density areas, and will accelerate as bitstream users achieve the necessary economies of scale to move their retail customers to unbundled loops.

In the longer term, as competition matures in high density areas, there may be less justification for maintaining the bitstream access option in those areas. The Commission therefore proposes that after an initial period of three years, when the bitstream service would be available nationally in parallel with the unbundled loop service, the Commission would examine competitive conditions in high density areas and decide whether or not the continuing availability of bitstream should be restricted.

The Commission does note that the availability of a national bitstream service may, in the short term, affect the incentives of facilities-based entrants. While it is important to preserve the incentives for local loop by-pass investments, the Commission believes that

it is unlikely that there will be widespread deployment of such alternative infrastructure in the next three years.

The combination of assured access for bitstream for a three year period, with a review at that point of the competitive intensity in key markets, will underpin the incentives for bitstream users to migrate to unbundled loops as soon as that shift can be economically justified.

3 *Accounting Separation*

The Commission notes that the Cabinet paper adopted an accounting separation regime in order to minimise the risk of anti-competitive behaviour such as discrimination by Telecom between its retail businesses and its wholesale customers and also to facilitate the determination by the Commission of access prices through improved transparency of Telecom's costs.

The primary objective of an accounting separation regime is to improve the financial and economic transparency of regulated activities. Accounting separation will require Telecom to identify its assets, liabilities, costs and revenues relating to its regulated activities as distinct from its non-regulated activities.

Telecom will be required to prepare and publicly disclose this information in accordance with requirements set by the Commission.

Section 69C of the Bill describes the accounting separation regime. The Commission will be required to compel Telecom to prepare and disclose information about the operation and behaviour of its wholesale and retail business activities as if those activities were operated as independent or unrelated companies.

The Commission understands the intention is that, notwithstanding the breadth of this wording (which on its face could include a wide range of non-regulated activities), the Commission should confine the scope of the mandatory disclosures to information relevant to the regulated services. The Commission notes in this respect that section 69E(1)(h) would allow the Commission to grant exemption from any of the disclosure requirements. Reliance on the exemption power would however require significant consultation with the industry on the scope of the exemption and would drive a level of complexity into the process that the Commission believes could be minimised.

The Commission's preference would be to deal directly with the issue by suitable wording that would confine the scope of section 69C to disclosure of information about the operation and behaviour of Telecom's wholesale and retail business activities as related to the regulated services. The Commission acknowledges that there will continue to be a need to decide how common costs between regulated and non-regulated activities are to be allocated.

This approach will provide greater clarity from the outset, while allowing the Commission to focus its attention on any remaining issues as to the relevance of particular information for the regulated services.

4 *Transition Provisions*

The Commission notes that, except for the provisions relating to the TSO amendments, the Bill does not outline any principles which address the relationship between the proposed changes to the regulated services and any existing work that the Commission is required to undertake in relation to those services prior to the enactment of the Bill. It is highly likely that prior to the enactment of the proposed changes:

- the Commission will have applications for determinations for designated or specified services or investigations underway under Schedule 3 of the Act; or
- parties may be intending to make applications for determination for designated or specified services.

For example, the Commission is currently reviewing competition in the mobile market to determine whether there is sufficient reason to commence an investigation under Schedule 3. Should such an investigation be initiated it will commence prior to the end of 2006 and is unlikely to be complete before the Bill is enacted. As the Bill includes changes to Schedule 3 and introduces Registered Undertakings in lieu of regulation, as part of the Schedule 3A process, all parties will be seeking certainty as to whether the current provisions of the Act will continue to apply or whether consideration will also have to be given to the Bill when enacted.

The Commission believes that it would be appropriate to include transitional arrangements in the Bill in order to provide clarity that any workstreams, which the Commission may have commenced prior to enactment (and, in particular, those relating to investigations into applications for determination in relation to designated and specified services), are conducted by applying the provisions that were in force prior to the enactment of the Bill.

The Bill does contain a transitional provision in clause 62, but it is restricted to Telecommunications Service Obligation (TSO) determinations. This clause provides:

Despite the amendments made to the Telecommunications Act 2001 by this Act, the Telecommunications Act continues to apply as if those amendments had not been made in respect of any TSO determinations that were commenced before the commencement of this Act.

The Commission submits that clause 62 should be expanded to cover access determinations and Schedule 3 investigations that, in either case, were commenced before the effective date of the amendments to the Act.

Section B: Submission on Specific Clauses and Provisions

Issue 1: *Implementing a pricing methodology in respect of the unbundled bitstream access service ('UBS') and the unbundled copper local loop (LLU) consistent with the preservation of incentives to move along the "Ladder of Investment" by anchoring the UBS price on the LLU price*

Clause of the Proposed Bill

Clause 56 – Schedule 1 –part 2:
New designated access services: Additional matters in relation to Telecom's bitstream access service and Telecom's unbundled copper local loop network, ("the Services") and the pricing principle for the designated access service of Telecom's bitstream access

Reasons for concern

With the availability of both unbundled loops and bitstream as alternative access services, the prices of the two services should bear an appropriate relationship so that there are incentives for competitors to make efficient investment decisions and to move from bitstream to unbundled loops.

The pricing principles contained in the Bill for the two services do not provide the Commission with sufficient powers to ensure that the appropriate relativities can be achieved or maintained over time.

In other countries where the regulator has flexibility in selecting the pricing methodology, it is possible to rapidly adjust prices for UBS and LLU services in response to market monitoring. The access regime proposed in the Bill does not provide this flexibility. The Commission cannot readily change the pricing methodology or the resulting prices should it be determined that the way of calculating and setting price is not having the intended effect on the market (or has had the intended effect and is no longer required to promote further competition).

The Commission is concerned that without a more explicit and responsive pricing mechanism, it will be difficult to establish and maintain appropriate relativities between the two services.

If the proposed pricing principles are altered in the manner suggested below, the Commission expects that it will be able to set prices for LLU and UBS that allow Telecom to recover its efficient costs; – access seekers have appropriate incentives to migrate along the value chain; and appropriate investment incentives for Telecom and access seekers are preserved.

The Commission’s experience to date with the current bitstream service is that the retail-minus pricing approach for this service is difficult to administer. If unchanged, it will become increasingly complex to administer as the variety of retail broadband services continues to grow.

The Commission’s proposal would do away with retail-minus pricing for the unbundled bitstream service and replace it with a form of cost-based pricing.

Recommended amendments

- 1 Removal of the “Additional matter” from both the LLU and UBS service descriptions respectively – and addressing relativity within the pricing principle itself. The additional matters currently provide:

Additional matter- Telecom’s unbundled bitstream access

The Commission must consider relativity between this service and Telecom’s unbundled copper local loop service

Additional matter – unbundled copper local loop network

The Commission must consider relativity between this service and Telecom’s unbundled bitstream access

- 2 Amendment of the UBS Pricing Principle so that it enables the Commission to have regard to all of the following matters in determining the wholesale price:
- a) *the price determined by the Commission (if any) for Telecom's unbundled copper local loops:*
 - b) *an updated calculation of that price if the Commission considers it to be necessary because of a change in circumstances:*
 - c) *if paragraphs (a) and (b) do not apply, the price for Telecom's unbundled copper local loops determined by benchmarking against prices for similar loops in comparable countries that use a forward-looking cost-based pricing method:*
 - d) *the additional costs for the supply of Telecom's unbundled bitstream service, calculated initially through benchmarking, and, if a final price determination is required by the parties, through cost modeling.*
 - e) *the incentives on the access seeker to migrate from Telecom's unbundled bitstream service or similar services to Telecom's unbundled copper local loops.*
 - f) *any other matter that the Commission considers to be relevant to the setting of the price.*

How this addresses the concerns Attached as appendix one to this submission is a background paper on pricing which compares the risks of the proposed retail-minus approach embodied in the Bill with those of the cost-based mechanism recommended above. It outlines the key insights and regulatory practices from European countries and demonstrates why the Commission considers that the option above carries fewer risks and is more likely to further the promotion of competition in broadband markets for the long-term benefit of end users.

In summary, the Commission's proposal is to anchor the pricing of the access services on a cost-based LLU price and to build up prices for bitstream by adding an appropriate margin covering the additional efficient costs of providing those services. In this way, the LLU and UBS prices will, at all times, be linked and access seekers will face a transparent cost-reflective choice to move from bitstream to unbundled loops.

Issue 2***National availability of the bitstream service.*****Clause of the Proposed Bill**

Clause 56 – Schedule 1 Part 2 new designated access services: Conditions - Telecom’s unbundled bitstream access (UBS).

Section of the Act

Market condition in the UBS service description to be included in Schedule 1 which reads:

That either---

*(a) Telecom faces limited, or is likely to face lessened, competition in a relevant market; or
(b) Telecom does not face limited, or is not likely to face lessened, competition in a relevant market, and the Commission has decided to require Telecom's unbundled bitstream access to be wholesaled in that market*

Reasons for concern

While we generally support the use of such a test, market entry may depend on the availability of the lower rungs of the “Ladder of Investment”.

The Commission believes that industry will require certainty about the availability of each rung on the “Ladder of Investment” and the requirements to progressively migrate up it. UBS is likely to be an important element in the investment plans of providers pending a business decision to roll-out LLU.

In the early days of the regime, a high degree of predictability in the availability of regulated services is desirable. To avoid uncertainty during this time assured availability of bitstream is therefore desirable.

The Commission notes that when the market is more competitive, consideration of a market condition would likely be appropriate.

Recommended amendment That the competition condition for unbundled bitstream, take effect three years from the passage of the Bill.

That a consequential amendment is made to new sections 30C and 30K to clarify that in respect of a standard terms determination, the Commission may

investigate whether the applicable conditions in relation to the service are met either at the time that the standard terms determination process is initiated by the Commission or at the time it prepares a draft standard terms determination.

How this addresses the concerns The proposed amendment allows access seekers to rely on the availability of UBS nationally for a three-year period. Once that initial period of access is passed, if monitoring shows that there is an effective level of competition in discrete geographical areas, the Commission would review the determination under section 30R and decide whether to withdraw the bitstream service in those areas. Telecommunications service providers would consider this in their business planning. This approach supports the position outlined in the Cabinet paper, (at page 37), which states:

“ ... the amended UBS should be operational from mid to late 2007, better meeting the Government’s shorter term goal of rapidly improving broadband resultsin the longer term, the availability of UBS may be reduced to ensure competition in low-density areas only”.

Appendix 1

BROADBAND REGULATION AND PRICING PRINCIPLES

APPLICABLE FOR UBS AND LLU

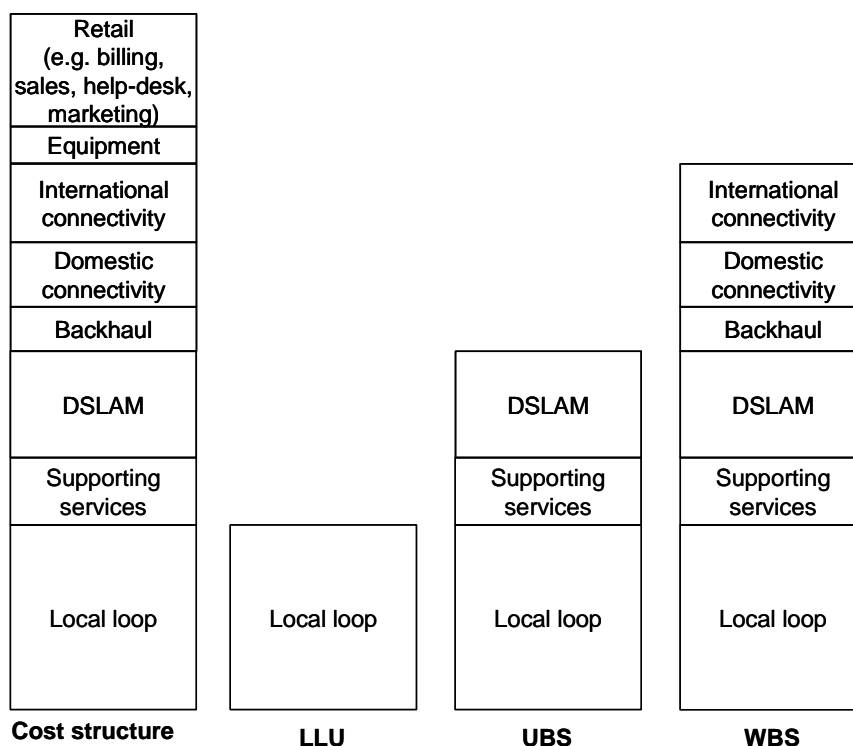
Introduction

1. The changes to the regulatory regime envisioned by the Government in the Telecommunications Bill have far reaching implications for the investment incentives of Telecom and its competitors, as well as for the development of competition.
2. The Government's broadband package is articulated around the ladder of investment notion. With the addition of access products along the broadband value chain, access regulation will support market entry at progressively deeper levels of Telecom's fixed network. Pricing decisions for each access product will be required in such a way as to simultaneously achieve two objectives: to achieve an efficient price as a surrogate for a competitive market price; and to create incentives for entrants to move up the value chain over time.
3. Against this background, this paper seeks to assess two options regarding the pricing principles applicable to UBS (a naked DSL service) and LLU. The first option is the approach outlined in the Cabinet Paper and the Telecommunications Amendment Bill. It essentially consists of a retail minus regime for UBS and cost-based prices for LLU. The second option is the approach developed by the Commission. The Commission's approach takes due consideration of the specificities of the structure of the Telecommunications Act and seeks to bring greater coherence to the regulation of UBS and LLU. This tighter alignment contributes to preserving the investment incentives of both Telecom and its competitors. It is also consistent with the 'Ladder of Investment' approach.
4. The paper argues that the Commission's proposed approach is preferable to the pricing method included in the Telecommunications Amendment Bill. The Commission's option carries fewer risks and is more likely to deliver on the Government's objectives and, in particular, to promote competition for the long term benefits of end-users.
5. This paper first sets out the broadband value chain. It then spells out the nature of competition in the telecommunications sector, distinguishing between facility-based and service-based competition. The notion of the "Ladder of Investment" is then built on and the underpinning attributes of regulation are explained. The next section pulls together key insights and regulatory practices from selected European countries. Finally, the Telecommunications Amendment Bill approach and the Commission's proposed alternative approach for UBS and LLU pricing are assessed in two separate sections.

The Broadband Value Chain

6. The figure below provides a simplified representation of the broadband access value-chain and underlying cost structure. The Bill will create an additional entry point along the supply chain, i.e. at the local loop level. ISPs will have two main access products from which to build their own retail products: unbundled local loops (LLU) and the UBS (including the bitstream with PSTN variant)

Figure 1: Broadband Value Chain, Cost Structure and Access Products



Note: diagram not to scale.

7. From a cost perspective, the essential difference between these two modes of entry is the additional functionalities that must be provided by entrants with LLU-based entry rather than provided by Telecom for bitstream. The additional costs are primarily the DSLAM costs.¹ The third regulated access product, wholesale broadband services (WBS), is the resale of Telecom's retail broadband products. It therefore does not allow competitors to differentiate their services.
8. In order to promote efficient investment and entry decisions, the (relative) prices of the LLU and UBS services must reflect cost differences between the two products. Assume,

¹ Backhaul beyond the first data switch is a separate regulated services that support the provision of services based on LLU and UBS so the cost are not recovered directly through the UBS or LLU but through separate charges.

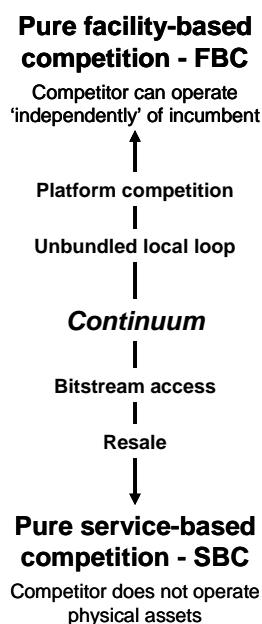
for instance, that the UBS price relative to the LLU price is set such that the gap between the two is not sufficient to recover the incremental costs per port (i.e the DSLAM costs and the costs of supporting services). Access-based competition will be skewed towards bitstream as it will not make economic sense for ISPs to take up the LLU service from a strict cost perspective. Obviously, there may be additional strategic factors that are relevant to the decision by an entrant to roll out LLU but the paper focuses essentially on cost considerations and pricing relativity.²

9. Further, if the bitstream service is priced at a level that does not allow the recovery of efficiently incurred cost and a return commensurate with risks, it may have adverse consequences on the investment incentives of the incumbent.
10. Thus, not only the absolute levels but the relative prices of access products are important for the preservation of investment incentives for both Telecom and its competitors.

Competition in Telecommunications: Services-Based Competition vs. Facility-Based Competition

11. Competition in telecommunications can take on many forms along a continuum between two extremes: pure services-based competition (SBC) and pure facility-based competition (FBC) (see Figure 2 below).

Figure 2: The Different Forms of Competition in Telecommunications



² For instance, if Telecom were to delay its ADSL2+ roll out or competitors were to identify a different business case to support their own ADSL2+ roll out in locations where Telecom decides not to upgrade. In those scenarios, competitors may, despite an inappropriate price differential, have a strong incentive to take unbundled loops to install their own ADSL2+ DSLAMs rather than take the lower functionality ADSL bitstream on offer.

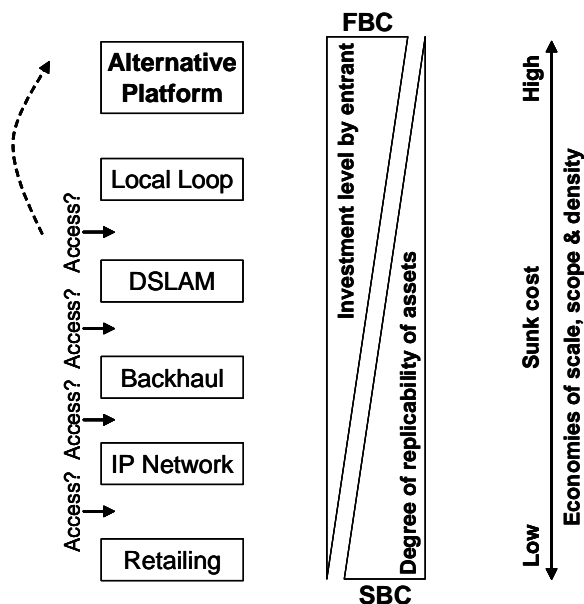
12. FBC is generally seen as superior to SBC. Its main advantages: stronger incentives for productive efficiency across the value chain; increased service variety and choice for customers - product differentiation; pricing innovation and sustainable competition. Furthermore, as FBC takes a stronger foothold, access regulation can be lifted and focused on remaining economic bottlenecks.
13. Some facility-based or platform competition to Telecom's fixed broadband services is already provided by cable, satellite, fixed wireless, and increasingly by mobile broadband. Local loop unbundling will be available nationally and is a step towards FBC at the deepest level possible for DSL and other copper-based services. The two forms of competition are not necessarily opposed or substitutable. Rather, SBC is necessary for and complementary to FBC. For instance, economics (e.g. economies of scale and of density) may dictate that in some geographic areas only very limited FBC can be expected while in others, competition between different technologies can be achievable.
14. The nature of access regulation may affect the balance between FBC and SBC and hence the investment incentives of the incumbent and entrants as well as competition. For example, an access price set too high relative to costs can deter efficient downstream competitors without encouraging efficient investment. On the other hand, an access price set too low can distort entry signals, mute the investment incentives of the regulated firm and risk crowding out investment in competing facilities.

Promoting Facility-Based Competition via the Ladder of Investment Approach

15. The level and terms at which access may be granted can affect the balance between FBC and SBC. A ladder of investment strategy is depicted as a regulatory approach to access regulation consistent with the investment incentives of both the incumbent and its competitors.³ It is essentially a mechanism designed to encourage FBC at the deepest level for assets which are replicable.
16. The figure below provides a simplified representation of the supply chain for the supply of DSL broadband. Under a ladder approach, competitors are encouraged progressively to make investment in assets which are less and less replicable (i.e. more risky or difficult). Entrants are incentivised to do so through access regulation. The regulator allows entrants to compete with the incumbent at different points on the spectrum between SBC and FBC. During the initial phase, entrants can build their customer base and undertake minor, easily replicable, investments. As their revenues grow and they accumulate assets, they are assumed to climb the ladder and undertake more risky and substantial investments involving sunk costs (i.e. they move from bitstream-based operator to LLU-based operator).

³ See Cave, M. (2006), "Encouraging infrastructure competition via the ladder of investment, *Telecommunications Policy*, 30, pp. 223-37 and Cave, M. and Vogelsang, I. (2003), "How access pricing and entry interact, *Telecommunications Policy*, 27, pp. 717-27.

Figure 3: Ladder of Investment for the Provision of Broadband



17. The ladder of investment notion rests on the concept of replicability. The extent to which an asset is replicable depends on a large range of factors, including the significance of economies of scale, scope, density and sunk costs.
18. Implementing a ladder-type approach requires the regulator to regulate access in a dynamic fashion in order to incentivise competitors to replicate assets. To do so, the regulator must have:
- a degree of flexibility to adjust the main regulatory levers, pricing and access requirements (e.g. sunset clauses) over time; and
 - pricing principles that are consistent with one another and that allow both the absolute and the relative level between access products to be adjusted in light of competitive conditions and the extent of replication.
19. In this context, the role of the regulator is to encourage entrants to progress along the ladder by setting access conditions and prices at appropriate levels. As far as investment is concerned, competitors are encouraged, and have the opportunity to invest, while the incumbent faces additional competitive pressures that in turn may spur further investment.
20. Having a good understanding of the cost structure and the degree of replicability of the various components of the supply chain, and the relative cost differential, is an essential requirement for the ladder approach. The approach does not imply that access products are priced below cost. Rather, it implies that the price-cost differential of access products (or equivalently non-price access conditions and/or prices) may evolve over time in response to changing competitive conditions. For instance, the price of bitstream may initially be set close to cost to encourage uptake at this level. After some time, the price

of this access product may increase to incentivise entrants to compete with the incumbent based on unbundled loops. Once competitive conditions (e.g. there is greater competition between the incumbent and LLU-based operators) have materially changed, price control on the lower rungs can be eased, e.g. mandating access only may be sufficient. Likewise, as FBC expands deeper in the network hierarchy, regulation can be rolled back and focused on remaining bottlenecks.

21. Although the argument for ensuring pricing relativity between access products could be expanded to the wholesale broadband service (WBS) and hence, according to the ladder approach, an active policy to move entrants from wholesale to bitstream would be warranted, it does not seem applicable to the market realities. Telecom's competitors have in many cases already moved up and are located at the bitstream level in the ladder.⁴
22. Regulatory intervention will have to be calibrated to account for likely geographic differences in the extent to which assets can be replicated. For instance, conditions of replicability may be radically different between a concentrated and highly populated urban area where economies of scale/density may be quickly exhausted and a rural/provincial area with more scattered population.
23. Flexibility and adaptability of regulatory intervention are paramount for promoting infrastructure-based competition via the ladder of investment. They are required to ensure that the economic space between different rungs is such that competitors can replicate the equivalent service of the incumbent and hence have an incentive to undertake investments. As entrants move up, their reliance on the incumbent network and bitstream products decrease. The corollary of increased facility-based competition is that some access regulation can be withdrawn.

Learning from the European Experience

24. In Europe, the ladder of investment approach, as applied to broadband regulation, has attracted significant attention.⁵ The experiences of European countries with local loop and wholesale broadband access regulation provide useful insights on pricing principles.
25. The new European regulatory framework for regulating electronic communications (which is currently under review) came into force in 2003, five years after the full liberalization of national markets and the unbundling of the local loop.⁶ Under the EU regime, national regulatory authorities (NRAs) can impose *ex ante* regulation on operators with significant market power (SMP). An operator may be found to have SMP in a market where three criteria are met: (a) presence of high and non-transitory entry barriers; (b) no tendency towards competition (in the absence of regulation); and (c) insufficiency of competition law provisions to address the matter of concern. *Ex ante*

⁴ It is for this reason that this paper does not specifically look at the issue of pricing relativity between WBS and other regulated products.

⁵ See ERG, *Broadband market competition report*, May 2005.

⁶ For more details on the EU framework, see e.g. Nihoul, P. and Rodford, P. (2004), *EU Electronic Communications Law*, Oxford: Oxford University Press.

regulation can only be imposed on a pre-defined list of relevant markets (additional markets may be added by NRAs subject to approval by the EC) and the approach is technologically neutral.

26. Once a NRA has established that a firm has significant market power in a relevant market, it can impose specific obligations on the regulated firm to the extent it deems proportionate and appropriate, choosing from the following remedies: transparency; non-discrimination; accounting separation and cost accounting systems; mandated access and price controls (including cost orientation).⁷
27. A notable feature of the EU legal framework is that it neither imposes specific pricing principles to be used for each relevant market nor requires NRAs to choose from a predefined set of pricing principles or methodologies where price control obligations are imposed. Thus, NRAs have some discretion over the choice of cost basis, standard and form of control they consider best suits. Further, as specific pricing principles are not embedded in the legislation, the pricing principle applicable to a particular access product can be altered over time by the regulator.
28. As part of the strategic review of the telecommunications sector that led to BT's voluntary operational separation, Ofcom adopted the explicit objective to promote competition between competing infrastructures as deep in the network as possible through access-based competition.⁸ In practice, this means granting access to enduring economic bottlenecks (i.e, parts of the network where effective and sustainable facility-based competition are unlikely in the short to medium term). As in France (see below), promoting LLU and bitstream access is seen as complementary to each other, as the location of economic bottlenecks in the network hierarchy is likely to vary geographically. Where LLU is unlikely to constitute a cost-effective option (e.g. low density population areas), the bitstream product allows competition in the provision of broadband services.
29. Since the introduction of unbundling, UK LLU prices have been set at a cost-oriented level. With regards to the pricing principle applicable to bitstream, two periods can be identified. Initially, the bitstream service, along with the broadband resale service (a voluntary offer by BT), were set on a retail minus basis. Following concerns of margin squeeze by BT at the retail level, which led to the slow up-take of the bitstream product, Ofcom set a "no margin squeeze rule" in 2004. This was essentially a retail minus rule between the bitstream service and resale service that effectively prohibited BT from lowering the margin between these two products beyond a minimum set by Ofcom. This measure gave a major boost to the uptake of bitstream. Ofcom was closely involved in enforcing and monitoring BT's compliance with this obligation.

⁷ See ERG, *Revised ERG common position on the approach to appropriate remedies in the ECNS regulatory framework*, May 2006, for an extensive discussion of regulatory remedies.

⁸ See Ofcom, *Final Statement on the Strategic Review of Telecommunications, and undertakings in lieu of reference under the Enterprise Act 2002*, Statement.

30. An important change took place with Ofcom's June 2005 Statement on Broadband Regulation (itself a component of BT's undertakings) in which the regulator articulated a more active policy towards LLU uptake.⁹ As part of its undertakings BT committed to:
- not changing the margin between LLU and bitstream until 1.5M loops have been unbundled; and
 - not reducing the retail prices until 1.5M loops have been unbundled and then by no more than 3% up until the earlier of 1 April 2007 or the completion of the wholesale broadband market review.
31. Having encouraged bitstream uptake through the "no margin squeeze rule", Ofcom policy since 2005 explicitly aims at incentivising operators to move up the ladder. The revised regulation consists essentially of ensuring sufficient margins to LLU-based operators for a certain period of time. It is *de facto* designed to ensure that competitors can replicate BT's tariffs (LLU to bitstream and bitstream to retail).
32. In Italy a similar move away from retail minus regulation for bitstream has taken place recently. While LLU prices have always been set at cost-oriented level, a retail minus pricing principle was initially applicable to bitstream. The retail minus control included the explicit objective to ensure that Telecom Italia's competitors were able to replicate each of the incumbent's retail tariffs based on the corresponding wholesale product.¹⁰ Telecom Italia had to submit to the regulator, AGCOM, each proposed retail price change and resulting wholesale price modification for approval. The assessment of replicability of the incumbent offers and the calculation of the 'minuses' or margins to deduct from the incumbent retail offers were a difficult and resource-intensive process.¹¹
33. In light of those difficulties, AGCOM decided to move to cost-orientation as the pricing principle applicable for bitstream at the beginning of 2006. More specifically, AGCOM justified this change by arguing that cost orientation: (a) was relatively simpler to implement compared to retail minus especially given the increasing complexity of retail offers (e.g. bundle of products, triple play offers) that render the computation of 'minuses' complex and imprecise; and (b) sends the right *make or buy* signal for investment in infrastructure at the local loop level (i.e. is consistent with a ladder of investment-type of argument) contrary to a retail minus approach that may lead to a distortion of investment incentives.¹²
34. In Ireland, the regulator, ComReg recently finalized the price control mechanism for bitstream. It has designed a retail minus type of control for the regulation of eircom's bitstream products with the aim of providing predictability and transparency while preventing price squeezes.¹³ The retail minus control/test is to be applied on an *ex ante* basis, i.e. with an imputation requirement. To assess margins, a very detailed and complex framework with extensive information reporting obligations based on a

⁹ Ofcom, Broadband Regulation, Statement, June 2005.

¹⁰ See ERG, *Broadband market competition report – Annex*, May 2005.

¹¹ See ERG, *Broadband market competition report – Annex*, May 2005.

¹² See AGCOM Delibera n. 34/06/CONS, 16 February 2006 for further details.

¹³ See Comreg, Retail Minus Wholesale Price Control for the WBA Market, 13 January 2006.

discounted cash flow approach has been developed. The regulator is to ensure eircom's compliance with the terms of the price control through statements of compliance prepared by eircom for each retail price and corresponding wholesale price change. It is worth noting that the analysis underpinning ComReg's retail minus approach does not include a discussion of the relationship between bitstream and LLU regulation.

35. Finally, the case of France, one of the leading European countries in terms of broadband penetration, innovative services and up-take of LLU, offers interesting insights that are consistent with those of the UK. The French regulator, ARCEP, is actively promoting the uptake of LLU as it considers that LLU-based broadband retail offers by competitors constitute the most sustainable form of competition and provide most benefits to end users.¹⁴ Bitstream regulation aims at:

- providing a geographical complement for LLU-based operators to supply a national service; while
- not cannibalizing the uptake of LLU where LLU is available and cost effective.

36. In other words, it seeks to incentivise investment by operators at the deepest level it considers achievable in the medium term on a wide-scale basis, i.e. LLU. In terms of pricing principles, this objective is achieved through:

- a strict cost orientation of LLU prices; and
- the cost orientation of bitstream prices and a ban on margin squeeze or foreclosure tariffs between the LLU and bitstream prices.¹⁵

37. Therefore, an LLU-based competitor must be able to replicate the bitstream tariff of the incumbent. The latter is assessed by the regulator, based on a model of the additional costs incurred by a reasonably efficient operator beyond LLU.

38. The rationale put forward by ARCEP for the price mechanism adopted is to incentivise operators to roll-out LLU and to promote competing investment by ensuring that the margin between LLU and bitstream prices is sufficient while preventing anticompetitive practices by the incumbent.¹⁶

The main insights that can be drawn from this brief review of the European experience are:

- the European regulatory regime gives regulators more flexibility than is currently, or proposed to be available in New Zealand over the choice of applicable pricing principles;
- regulators have used this flexibility and have altered pricing principles over time to adapt regulation to changes in competitive conditions;

¹⁴ See ARCEP, Rapport public d'activité 2005, July 2006.

¹⁵ See ARCEP, La lettre de l'Autorité, N°50 mai-juin 2006, ARCEP, Décision n°05-0281.

¹⁶ ARCEP noted that annual CAPEX expenditure of LLU-based operators was between €100M and €150M, ARCEP, Décision n°05-0281.

- in countries where a retail minus pricing principle has been in place for bitstream, it has been accompanied by relatively strict compliance provisions and assessment by regulators, including *ex ante* imputation requirements to ensure that downstream competition is not stifled;
- cost-oriented bitstream prices are becoming more and more widespread in European countries as some of the countries (e.g. Italy and the UK) that initially adopted retail minus are moving towards cost-based prices or to an explicit control of margins between LLU and bitstream to address implementation difficulties and investment incentives issues;
- regulators have sought to ensure that LLU-based operators are able to replicate the bitstream offers and also in some cases the retail offers of incumbents; and
- being able to manage the margin between LLU and bitstream prices is critical to promote LLU uptake, to incentivise investment by entrants and hence to implement a ladder of investment strategy.

Telecommunication Amendment Bill's Approach to UBS and LLU Pricing

39. The Government policy objectives with regards to broadband can be summarized as follows:¹⁷

- the promotion of competition for the long term benefit of end users;
- increase broadband service uptake and the timely availability of cost-effective broadband services, including advanced broadband services; and
- a more competitive upstream market through notably the unbundling of the local loop and the introduction of a revised bitstream service description.

40. To achieve those objectives, the pricing principles retained in the Telecommunications Amendment Bill are retail minus for the UBS, and cost-based for ULL as detailed in the table below. The proposed pricing method also includes a specific provision directing the Commission to consider the relative price of the LLU compared to UBS when setting the UBS price and vice versa.

¹⁷ Cf. Telecommunication Amendment Bill, and Cabinet Policy Committee Paper, 3 May 2006.

**Table 1: Pricing Principles Applicable to UBS and LLU
Included in the Telecommunications Amendment Bill**

Service	Applicable pricing principle & additional matters
UBS	<p><u>Pricing Principle</u></p> <p>Initial: retail minus with benchmarked discount</p> <p>Final: retail minus with avoided costs saved or actual cost saved</p> <p><u>Additional matter:</u></p> <p>The Commission must consider relativity between UBS and LLU</p>
LLU	<p><u>Pricing Principle</u></p> <p>Initial: benchmark against countries that use a forward-looking cost-based pricing method</p> <p>Final: TSLRIC</p> <p><u>Additional matter:</u></p> <p>The Commission must consider relativity between LLU and UBS</p>

41. The Commission is of the view that the pricing method envisioned in the Bill can be improved to minimize implementation risks.
42. Before spelling out the implementation difficulties and risks associated with the proposed pricing method it is useful to restate the nature of retail minus price controls. In its simplest expression, under a retail-minus price control (a variant of the Baumol-Willig rule), the access price is derived by stripping out the relevant retail costs, i.e. non-access related cost items, leaving upstream profits unregulated. One of the often claimed advantages of retail minus is its theoretical simplicity. Further, since the returns generated at the wholesale level are not capped, this type of control is, in principle, neutral vis-à-vis the investment incentives of the access provider (provided of course that the minus factor is set at the appropriate level). It is also said that it promotes efficient retail competition as the retail market is, in theory, left to the most efficient firm although it does not prevent excessive prices nor encourage productive efficiency at the wholesale level by itself.
43. The issues and difficulties associated with the approach proposed can be classified in two related categories. First, there are issues specific to the implementation of the retail minus pricing principle for the UBS service. Second, and related, the pricing method raises specific concerns vis-à-vis the promotion of competition, investment incentives, and uptake of LLU.
44. The main implementation issues and conceptual difficulties of retail minus as applied to bitstream include:¹⁸
- *Definition of relevant retail price:*

¹⁸ For a more detailed and generic account of implementation issues associated with retail minus see e.g. IRG, “Principles of implementation and best practice regarding the implementation and use of retail minus pricing as applied to electronic communications activities”, 8 February, 2006, and ComReg, *Consultation on retail minus wholesale price control for the WBA market*, 19 August 2005.

With the increasing number of ADSL retail products, and in particular the multiplication of bundles (and anticipated multi-play offers), the derivation of a robust and economically meaningful imputed price (from which to deduct the discount to calculate the access price) presents serious challenges. This difficulty was illustrated during the UBS Determinations and was one of the main reasons put forward by the Italian regulator to abandon the retail minus pricing approach. It is likely to become more acute as the enhanced features of the bitstream service and its variants imply that it will increasingly display the feature of a platform that can be used to provide a very wide range of services (e.g. Voice over Broadband (VoIP), Internet Protocol Television (IPTV)).

- *Accounting for the different versions of the UBS service, i.e. bitstream with PSTN and naked DSL (bitstream without PSTN):*

The UBS service will be available in at least two versions: the so-called naked-DSL version and the version with PSTN. Making an adjustment for the naked-DSL version will be problematic under a retail minus control since naked-DSL does not have a retail equivalent.

- *Benchmarking of discount and/or calculation of avoided or actual cost saved:*

The retail costs of a service like broadband access are different from those of more mature services. In particular, customer acquisition costs are a significant cost component of broadband compared to other telecommunications services. This implies that a discount benchmarked against a wide range of retail services may underestimate the actual retail cost and hence lead to insufficient margins for ISPs to compete on a stand alone basis with the incumbent. Further, as other countries are moving away from retail minus for broadband services, the pool of countries to benchmark may become limited. In estimating the retail costs to derive the discount applicable, it is also worth noting that countries which use retail minus are also giving increasing weight to the cost of entrants or “hypothetically efficient competitors” where scale and scope effects are significant, in recognition of the high threshold imposed by using the incumbent costs or an avoidable cost standard.¹⁹

- *Removal of connectivity (i.e. international and domestic bandwidth) and backhaul costs:*

Bandwidth and backhaul costs are two significant cost components of broadband provision. Developing a robust methodology to remove those costs from the imputed retail price has constituted a difficult and contentious exercise in the UBS determination. The approach followed by the Commission is currently being challenged before the Courts by ihug and CallPlus. Also, the on-going use of the regression approach to remove those costs may be open to manipulation by the incumbent. The incumbent can load its costs onto these services.

- *Enabling retail competition and preventing price squeeze:*

¹⁹ For instance, in Ireland the regulator has indicated that the relevant benchmark for assessing retail costs is a ‘similarly efficient operator’, which is defined as an operator who has the same cost function as the incumbent but that may operate on a lower scale and may incur costs that the incumbent does not face. Similarly, when AGCOM assessed Telecom Italia’s compliance with the retail minus regime and the ability of competitors to replicate Telecom Italia’s offers, it considered the incumbent retail cost as well as the retail cost of competitors.

The existing retail minus mechanism in its current format does not prevent potential price squeezes by the incumbent. As explained above, in countries where retail minus is in place, it is generally complemented by additional safeguards, including imputation requirements, to ensure compliance with the control on an *ex ante* basis and to prevent gaming by the incumbent.

45. The use of the retail minus pricing principle for bitstream pricing raises important implementation and conceptual problems whose potential consequences should not be underestimated. As a result of these difficulties, the calculation of the various elements of the retail minus regime (i.e. imputed retail price and discount) are likely to become more imprecise and to be more time-consuming. In turn, this may increase the risk of regulatory errors, and hence: legal challenge. Equally important is the potentially adverse impact on the investment incentives of Telecom and its competitors if the resulting prices for the bitstream services are out-of-line with corresponding costs.
46. More fundamentally, the appropriateness of the pricing principle applicable to bitstream must also be looked at in relation to the pricing principle applicable to LLU. With the introduction of a new entry point along the broadband supply chain, the relative prices of access products are critical for preserving investment incentives and the promotion of competition.
47. The price differential or margin between the bitstream and LLU price must reflect, to some extent, the additional costs involved on top of LLU to offer a bitstream-equivalent. Where pricing relativities are important, a particular drawback of the retail minus pricing principle for bitstream is that it is likely to be a relatively imprecise exercise for the reasons stated above, and hence the margins between the bitstream price and LLU price may be out of line. To provide appropriate investment incentives to entrants while preserving the investment incentives of the incumbent, the regulator must have a degree of control over the absolute levels and the margin between the two access products. Further, flexibility is required to dynamically adjust regulation to market developments and to incentivise the incumbent's competitors.
48. For an entrant contemplating taking up the LLU product, and hence undertaking significant investment, a degree of predictability and certainty over the margin between the LLU and bitstream product is an important factor as the cases of the UK and France illustrate. However, through the retail price mechanism the incumbent can stifle the development of infrastructure-based competition at the deepest level since *de facto* it controls the margin between the two products. On the other hand, it may be that the resulting bitstream price relative to the LLU price is such that an entrant cannot replicate the bitstream offer of the incumbent, and hence has no incentive whatsoever to climb up. This could result in a situation where Telecom's competitors remain at the bitstream level of the supply chain. Consequently, LLU-based competition may not take-off and bitstream regulation would be perpetuated.
49. The very nature of the retail minus pricing principle means that the Commission cannot influence the relative prices and margins between access products, since by definition the bitstream price will depend on Telecom's retail pricing behavior whereas the LLU price

would be cost-based. That the pricing principles contained in the Bill directs the Commission to consider relativity between LLU and UBS when setting the price of each of these services does not adequately deal with the issue, as the descriptions for the two services are prescriptive as to which pricing approach is to be followed.

50. The pricing method included in the Telecommunications Amendment Bill for LLU and bitstream is not in line with evolving international best practice and is likely to be cumbersome to implement. Further, it does not provide the Commission with sufficient ability to manage the margin between the LLU and bitstream prices as well as the necessary flexibility to adjust those margins in response to changing competitive conditions. Failure to provide an appropriate margin between the LLU and bitstream services is likely to have adverse consequences for the up-take of LLU, the investment incentives of Telecom and its competitors, and ultimately for the promotion of competition.

An Alternative approach

51. The alternative approach builds on the arguments developed above. The approach seeks to bring greater coherence between the pricing principles applicable to UBS and LLU while taking into consideration the specificities of the Telecommunications Act and, in particular, the embedding of pricing principles and regulated services in the legislation.
52. More specifically, its underlying goal is to ensure that the pricing principles allow the implementation of regulation in a way consistent with the investment incentives of both the incumbent and competitors as well as with the promotion of competition.
53. To achieve the objective of increased broadband competition, the analysis highlights three key properties that the pricing principles should display:
- Enabling access prices to cover the cost of supply;
 - Ensuring that the relative prices of access products deliver appropriate investment and entry signals; and
 - Allowing flexibility and adaptability of regulatory intervention over time.
54. To this end, the pricing principle for bitstream should be anchored on a cost-based LLU price, with the addition of a margin that will allow recovery of the additional costs for the supply of UBS. Those efficient costs would be benchmarked at the initial pricing principle based on comparable margins in other comparable countries that regulate both LLU and bitstream, and would be determined by the Commission based on a detailed cost analysis at the final pricing principle. How the pricing principle for bitstream service will work is outlined in the table below.

Table 2: Pricing Principle for Bitstream under the Alternative Approach

Pricing Principle
Have regard to all of the following matters in determining the wholesale price:
a) the price determined by the Commission (if any) for Telecom's unbundled copper local loops:
b) an updated calculation of that price if the Commission considers it to be necessary because of a change in circumstances:
c) if paragraphs (a) and (b) do not apply, the price for Telecom's unbundled copper local loops determined by benchmarking against prices for similar loops in comparable countries that use a forward-looking cost-based pricing method:
d) the additional costs for the supply of unbundled bitstream service, calculated initially through benchmarking and, if a final price determination is required by the parties, through cost modeling
e) the incentives on the access seeker to migrate from Telecom's unbundled bitstream service or similar services to Telecom's unbundled copper local loops
f) any other matter that the Commission considers to be relevant to the setting of the price

55. If any party applies for bitstream with the PSTN service, additional adjustments would need to be made to the cost of the bitstream service where PSTN costs are recovered by Telecom from the retail customer.
56. The Commission is not proposing any changes to the pricing principle applicable to the LLU service, other than the omission of the additional matter.
57. The consistency of the proposed approach with the properties defined above is self-explanatory:
- (a), (b) and (c) relate to setting a cost-based price for Telecom's LLU service which, set appropriately, will allow cost recovery;
 - (d) ensures that the bitstream price charged by Telecom reflects underlying costs and, hence that the margin is not a variable controlled by Telecom. As a result, relative prices will send appropriate entry signals for LLU-based investment while allowing Telecom to recover its cost and preventing margin squeeze at this level; and
 - (e) and (f) relate to the flexibility and adaptability required to adjust regulation over time in order to incentivise operators to roll-out LLU and to promote competing investment as well as to shift the entry incentives from bitstream towards LLU where warranted by the level of competition.