

**New Zealand Government
Broadband Investment Initiative
Draft proposal for comment**

Kordia Group Response

APRIL 2009

Introduction

1. This submission is made on behalf of the Kordia Group ("Kordia").
2. Kordia welcomes the opportunity discuss this submission.
3. No part of this submission is confidential.
4. Kordia is a leading provider of broadcast and telecommunications networks and customised network services.
5. Kordia is of an ideal scale, positioned with resource, partnerships and infrastructure to embrace advances in technology, media and telecommunications.
6. Kordia's contact person for the purpose of this submission is:

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7. For convenience, the relevant paragraphs from the Draft Proposal are repeated here with Kordia's comments inserted following the relevant paragraph.

Summary

- 8. Overall, we believe that the government’s proposal is a step in the right direction towards achieving its objective of increasing the availability and use of ultra-fast broadband. We are aware that the draft proposal is only the first step in a complex process, and many issues have yet to be considered in detail. Some of the relevant issues are economic in nature, and it is clear that economic issues will be as important as technological and practical ones in achieving the government’s broadband objectives. Uptake of ultra-fast broadband will only occur on a large scale if the benefits to many end users outweigh the retail market prices they face, and if provision of the relevant services is profitable (at least in the long run) for broadband retailers, wholesalers, and the Local Fibre Companies (LFCs).**

- 9. To some extent, uptake of ultra-fast broadband depends on factors that are currently uncertain, in particular the willingness of consumers to pay for higher speed, the development of valuable new applications that make use of the additional speed and the viability of the business plan for retail service providers. Therefore, the government’s investment, and that of the private partners, is not without risk. However, the success of the proposal will partly depend on its detailed design and implementation. In that respect, the economic incentives that the proposal creates are crucial.**

- 10. The next phase (leading up to the RFP) will require consideration and resolution of some key issues. It will be important, to significantly improve the prospect of Government achieving its goals, to consult again on those issues. While a goal to get early successes is understandable, the complexity of the issues and this process is such that there is significant risk of failure of the initiative due to the proposed short time lines for each phase, including the initial phases. Overseas experience – both good and bad - such as in Singapore, Australia and the UK, shows the importance of “getting it right” from the start. Planning the overall approach carefully is critical. This cannot be done quickly without marked risk.**

Commentary

11. Para 31. The rationale underlying the government's proposed investment approach is that, where public funding is invested in telecommunications infrastructure, the government should direct that investment to areas where the market is not likely to deliver on commercial terms¹.
12. **Kordia Comments:** There is today significant market delivery of infrastructure that is capable of supporting ultra fast broadband today, including in the access networks. The challenge for Kordia and other companies that want to buy dark fibre is access to the infrastructure at a price (and service level) that enables cost effective delivery of ultra fast broadband at prices that businesses and consumers will be able to afford.
13. Para 32. When the focus is on investment in a fibre-optic telecommunications network, the most significant capital investment is in the roll-out of the passive network infrastructure.
14. **Kordia comments:** The cost of connecting the customers, and rewiring where required, should not be underestimated. There will also be costs associated with the lighting of the fibre and the provision of network operations, inter and intra regional backhaul and international connectivity. It is important that these additional costs are properly understood and accounted for in assessing the total commercial proposition and affordability for end users.

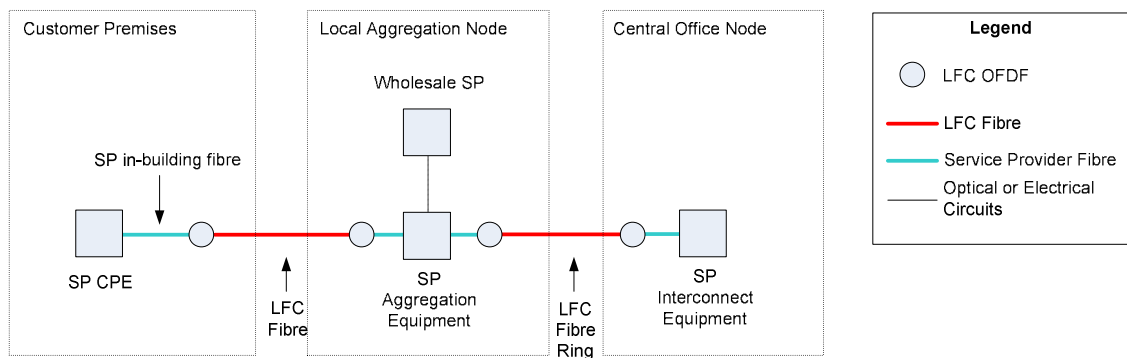
¹ See, for example, *Developments in Fibre Technologies and Investment*, OECD Directorate for Science, Technology and Industry, Committee for Information, Computer and Communications Policy, 2008 for discussion.

15. Para 34. "Dark fibre" refers to fibre optic cable which has been laid in the ground (or on poles) but which has not yet been made active. Fibre is made active by adding optical electronics at each end, to provide a working service. ISPs and other telecommunications providers can purchase access to dark fibre, add their own electronics, and then use it to provide a retail service. This is referred to as "lighting" the fibre. In very simple terms, this is the most "raw" access to the underlying infrastructure, and provides the best competition outcomes because the wholesale customer has full control and flexibility and has the ability to innovate in downstream services. However, there may be benefits from the provider itself lighting some fibres and providing a managed wholesale "bitstream" type of service, to enable improved economies for its wholesale clients.
16. **Kordia Comments:** We do not think that LFCs should be prohibited from selling wholesale bitstream access services, because in some cases they will be in the best position to do so. However, we believe that rigorous non-discrimination and equivalence terms must be applied, so that LFCs are required to offer access to dark fibre to wholesale aggregators on the same terms as they supply it to themselves for the purposes of providing bitstream services to retailers. There is considerable room for gaming and debate about what constitutes appropriate non-discrimination and equivalence. This is demonstrated below when we deal with open access. Therefore, a comprehensive approach to defining equivalence and non-discrimination is required, including consultation on the issue. In order to make this transparent, some form of information disclosure by the LFCs or monitoring by the CFIC will be required.
17. One issue that does exist with the LFCs offering a bitstream access service is that due to the investment from the government, they are in effect receiving a subsidy for the optical and aggregation electronics, which would give them an advantage over their competitors. This is one of the issues to deal with when determining the approach to equivalence and non-discrimination for bitstream sales by the LFC.
18. Para 35. The government's approach will encourage the development of a widespread wholesale market for the provision of "dark fibre" network access services. The government investment will be in fibre networks that will operate only at the wholesale level, selling "dark fibre"-based services enabling telecommunications providers to design and specify their own downstream services. This approach will

ensure that all decisions regarding active network technology options are left to private sector investors.

19. **Kordia Comments:** Kordia proposes a mixed architecture for LFC deployments, where xPON is used in residential areas and Active Ethernet Fibre is used in Business and public service areas. In this context, Active Ethernet Fibre refers to passive or 'dark' fibre that is lit by the Service Provider's active equipment. Because the GBII paper proposes focusing on the business and the public section for the initial period, Kordia's proposed architecture focuses on AEF only.

20. The figure below shows the proposed architecture.



21. In this proposal the LFC would run fibre between the Customer premises (to an agreed termination point), and a local fibre aggregation node and provide fibre access to about 10,000-15,000 premises, from each local aggregation node. The LFC would provide 'Telehousing' facilities at this local aggregation node, to accommodate their own access fibre termination equipment. The local aggregation node will also accommodate service provider termination and/or aggregation equipment. In addition to telehousing rack space, the local aggregation node will also provide power and ventilation services to service providers. At the local aggregation node, a service provider would have the option of installing its own aggregation equipment or using some other wholesale service provider to provide aggregation and/or backhaul to the LFC 'central office' node.

22. The local aggregation nodes would be connected via a passive fibre network (i.e. ring) to the LFC central office node that would aggregate approximately 10-15 local aggregation nodes. The purpose of this fibre ring is to enable service providers to build their own metro rings if they require. Ideally, the passive ring would connect multiple other local aggregation nodes back to the central office to enable this. The fibres between the local aggregation nodes and the central node are intended for aggregated local backhaul and therefore lesser in number than the sum of all access fibres across the entire central office reach area.

23. The local aggregation nodes and the central office node would be in neutral locations to provide access and /or handover facilities to all parties. When a Service Provider requires a connection to a specific customer location, the LFC will run a fibre from their nearest pit into the customer location, if one does not already exist.

24. The premise of this architecture is that it provides the service provider the maximum control and flexibility over the customer service, which enables innovation and a lower cost to the consumer. The key advantage of this approach over an xPON approach for business is that it allows a service provider to provide scalable and flexible services to a small number of business customers initially, without the significant investment of xPON OLT equipment at each node.

25. Para 36. By keeping the fibre company out of retailing, it will have no incentives to act anti-competitively, and there will therefore be no need for initial price regulation of its services. In fact there will be considerable initial incentives for LFCs to keep the fibre rental prices low to facilitate use by downstream providers.

26. **Kordia Comments:** The government's proposal will create a particular market structure. The LFCs will sell access to dark fibre to retailers who will add active equipment and other services such as international connectivity and customer support to provide a complete service to end users. Other wholesale broadband aggregators may buy dark fibre access from the LFCs and sell wholesale bitstream services to a number of smaller retailers. The LFCs themselves may compete in the wholesale

broadband market by directly providing bitstream services to retailers. The cost of active fibre equipment and the resulting economies of scale may mean that smaller retailers are unable to justify investing in this equipment themselves, and some aggregation at the wholesale level may be required to make retailing economically viable, unless there is some consolidation of the number of competitors in the retail broadband market.

27. In many ways, there are strong analogies between the market structure that the government is proposing to create and the current structure of the electricity industry in New Zealand. Providers of Internet content and applications are analogous to electricity generators, and require access to a transmission network to deliver their product to consumers². The LFCs are similar to the regional electricity distribution networks, and economies of scale mean that it will not be viable to have overlapping fibre access networks in competition with each other. However, unlike electricity distributors, the LFCs will face some competition from alternative technologies using copper-based and wireless access networks, although these networks will not provide the same speed and quality of service as the fibre access network.
28. With this analogy in mind, many of the lessons that have been learned in the electricity market in New Zealand can be applied to ultra-fast broadband. In particular, separation of access provision and retail, as the government has proposed, is an important step for ensuring as much competition as possible in retail, given the economies of scale that exist at the network level. If the LFCs were able to participate in the retail market, they may be able to leverage their market power at the network level to dominate the retail market, to the detriment of consumers.
29. However, even with this separation, it is important to realise that the LFCs will have market power in the provision of wholesale ultra-fast broadband services (either dark fibre access or bitstream services). Like electricity, the 'natural' structure of the industry is to have a single provider at the network level, and this is a source of market power.
30. As mentioned above, the LFCs will face some competition from existing technologies, however if ultra-fast broadband is a commercial success in the sense that consumers

² Unlike electricity, these upstream providers are unlikely to also be retailers.

value it highly, then this competition will be blunted, because consumers will not view the existing technologies as very good substitutes for ultra-fast broadband. The fewer close substitutes, the greater a firm's market power, everything else equal.

31. Para 38. This approach will also minimise market distortion from government involvement. The new network is intended to provide a service to the telecommunications industry, rather than compete directly with it. The new network will provide dark fibre services to any ISP or telecommunications service provider, and will be operating as an infrastructure 'utility' at the passive level of the market. The aim is to provide a new fibre platform upon which service providers can develop their own services and create unique, innovative offerings.

32. **Kordia Comments:** The draft proposal also does not appear to have given much consideration to the retail economics of providing ultra-fast broadband. To some extent this depends on the willingness of end-users to pay for the additional speed, and the development of valuable applications that make use of it, which are factors largely outside the government's control. However, there are two important factors that policy may be able to influence – the cost of international bandwidth, and access to premium content.

33. First, access to international bandwidth is crucial for providing any kind of Internet service. The vast majority of the websites and online content accessed by New Zealanders are located overseas. Therefore, the international bandwidth available to each user is as important as the bandwidth of the connection between them and their ISP in determining the quality of the user's experience. To obtain the full benefits of a FTTP network, users will need to be allocated significantly more international bandwidth than they are currently. A careful comparison of the costs of international bandwidth against the willingness to pay of end-users for higher speeds needs to be made in order to determine what levels of international bandwidth costs can be profitable for retailers. To the extent that there is limited competition in markets for the provision of international bandwidth and this is leading to high prices, this issue could be addressed either by regulation or by investment to relieve the supply constraint.

34. Second, in the case of home users at least, much of the willingness to pay for higher speed is likely to come from using the high speed connection as a conduit for serving premium entertainment content, such as first-run movies and live sports. This is likely to be the main source of consumer value from higher speeds in the near future, if and until new applications are developed.
35. However, the current market structure, with few content providers and many broadband retailers, means that most of the economic surplus created by using ultra-fast broadband to supply premium content will be captured by the content providers. Thus the willingness of consumers to pay for premium content largely cannot be used to recover the costs of the fibre network.
36. In effect, access to premium content is likely to be a bottleneck service that is necessary for retailers to compete in the ultra-fast broadband market (just like access to the fibre network itself will also be a bottleneck in that market). This is because households will likely view ultra-fast broadband and premium content as complements that have significant value together, but that ultra-fast broadband alone is not significantly more valuable than existing broadband services.
37. Para 42. There will be no government commitment or guarantees regarding the rate of return that partners will receive.
38. **Kordia Comments:** Investment in LFCs is subject to uptake risk and to regulatory risk; there will also be some development (project) risk. Bids by potential private partners will need to either explicitly state or implicitly embed an acceptable rate of return as compensation for these risks. The CFIC will then underwrite the project to be undertaken with the chosen partner(s).
39. To the extent that risk can be mitigated, the public purse (managed by the CFIC) will be better off. We believe that uptake risk could be managed by diverting some of the public investment towards the demand side, in particular by working with local government to aggregate demand, and by giving a small uptake subsidy in low-income neighbourhoods or for small businesses. The LFCs could also be instructed to prioritise investment in areas where such demand side stimulation had occurred.

40. Regulatory risk is best addressed by being as explicit as possible about what the future rules of the game are likely to be. As discussed, we consider that regional disaggregation of LFCs combined with information disclosure would be very valuable. In addition, it may be useful to signal that the input methodologies work currently under way at the Commerce Commission could be applied to regulation of LFCs once profitability reached certain specified thresholds. The key point here is the need for certainty.
41. In addition there needs to be consideration of the government's options with the risk of failure, for example would the government exercise a step-in right to protect its investment should a fibre co fail?
42. Para 43. The CFIC will be required to achieve the initial goal of making fibre available to priority users such as businesses, schools and health services, plus green field developments and certain tranches of residential areas, within the first six years, and a secondary goal of making fibre available to 75% of the population within ten years.
- 43. Kordia Comments:** The challenge in realising the economic benefits is that there will be delay in reaching the mass market (SME and consumer) to obtain scale of economic benefits (compare with the adoption curve for mobile telephones). The delay in reaching the mass market will also affect the commercial viability of the local fibre cos.
44. Para 47. All LFCs will be required to adhere to common technical and commercial standards in key areas such as open access, equivalence and interconnection (in particular, interconnection at neutral points of presence³).

³ The phrase "neutral points of presence" refers to physical interconnection points which are open to any network provider. The aim will be to ensure that the networks built by the different LFCs will interconnect with all other network providers, and with each other, to exchange data traffic.

45. **Kordia Comments:** Kordia considers that achievement of the government’s objectives will require not only seed support of alternate dark fibre infrastructure and alignment of appropriate standards, but also an appropriate operational framework to coalesce these investments into a telecommunications fabric that can be leveraged locally and nationally.
46. Standards are a very important issue. They will be required to ensure cost efficient deployments. For example standards will be required for access to the dark fibre, POI support infrastructure, access and security of the POIs etc.
47. In addition IP Interconnection will need to be addressed to ensure that the LFC model enables and ensures IP Interconnection on appropriate terms between providers. There is a danger that standards and design will cause market distortion as appropriate IP Interconnection cannot be achieved. IP Interconnection issues not being handled in the TCF that need to be addressed to make the LFC model viable include:
- (a) The need to review all layers of interconnection, including the transport and service layers. As reports such as the 2008 ERG report on IP Interconnection and the 2008 WIK-Consult report to the EU (“The Future of IP Interconnection”) show, it is essential to deal with interconnection at all levels;
 - (b) There are a number of issues that the TCF cannot deal with due to Commerce Act or other considerations. One is pricing. This is one of the most challenging areas to resolve, with the migration from legacy PSTN (with its largely CPNP model) to a model suitable for the IP world (taking into account the Internet’s largely transit based, and bill and keep based, approach).
48. These issues illustrate the criticality of the next phases, including the period leading up to the RFP.
49. That next phase (leading up to the RFP) will require consideration and resolution of some key issues. It will be important, to significantly improve the prospect of Government achieving its goals, to consult again on the issues to be resolved in that phase. While a goal to get early successes is understandable, the complexity of the issues and this process is such that there is significant risk of failure of the initiative due to the proposed short time lines for each phase, including the initial phases. Overseas experience – both good and bad - such as in Singapore, Australia and the UK, shows the importance of “getting it right” from the start. Planning the overall approach carefully is critical. This cannot be done quickly without marked risk.

50. By way of example only, what constitutes “open access” (which is a pivotal requirement for Government) is a complex issue that should be resolved and included in the RFP. Leaving this until later will cause confusion, and an adverse negotiating position for Government and/or the CFIC. Not dealing with the issue at all will allow the LFCs to cause adverse outcomes, especially where one of the investors is a vertically integrated provider. (We deal elsewhere with the problems faced by vertically integrated providers being investors). One person’s “open access” is another person’s “walled garden”.

51. To demonstrate the complexities as to open access, and therefore the importance to resolve what is meant by open access, we enclose, at the end of this submission, a paper on open access definition and approach, prepared by BT Global Services, an organisation that has had to deal with this issue in the many countries in which it operates.

52. In summary, careful planning and “getting it right” from the start will substantially enhance the prospect of the initiative succeeding. Our observations about open access apply to other issues as well. It will be important to consult the parties as to these major issues.

Profit allocation

53. Para 66. “A” shares, to be held by the CFIC, may entail:
 - a. concessionary equity rights – in particular, the government’s shareholding may be subject to a lower rate of return than that of the partner; and
 - b. after 10 years, “A” shares will revert to normal shares.

54. **Kordia Comments:** The government's proposal to invest is a recognition that a commercial business case does not exist today for the roll out of fibre with the commercial model the government is seeking. For the private investors to get a commercial rate of return and for the cost of the services provided to be affordable, the government may need to consider a significantly longer period than 10 years in which it gets either a nil or a lower rate of return than the private investor, and that the length of the period will vary region by region.

55. Para 56. Eligibility of vertically integrated providers.

56. **Kordia Comments:** There is a particular difficulty in regard to vertically integrated providers investing in LFCs, which is not adequately met by having only a minority of directors (and voting power) appointed by that investor. The vertically integrated investor can turn the LFC to its advantage by other methods, bypassing the relatively rudimentary control mechanism of the Board having majority voting outside that investor's hands. For example, as investor, it can make and implement controls and decisions which drive a position favourable to the investor. It can do so formally, and also in various informal and practical day to day ways. There can be issues for example as to how assets, know-how, etc, contributed by the investor are to be handled, especially where they continue to be operated in the investor's own non-IFC business.

57. Assuming vertically integrated operators can invest, it would be necessary to develop a sophisticated regime which goes as far as possible to reduce the ability of the investor to game, influence and control. That the CFIC appoints other directors provides significant protection. However, it will be difficult to avoid adverse investor activity. So much so that it is arguable that vertically integrated operators should not be allowed to invest. If however they can invest, we recommend that, with advice from experts on shareholder agreements, Government develops a sufficiently comprehensive regime to reduce the risk.

Selection process and criteria

Process

58. Para 72. It is proposed that the CFIC issues a request for proposals (RFPs), with a three month period for preparation and submission of proposals. This would be followed by a short period of negotiation where required. An alternative would be to operate a two-stage process involving expressions of interest and a RFP.

59. **Kordia Comments:** As we understand the process, the CFIC will request tenders from private partners to provide the required services in some or all of the target regions set out in the draft proposal. Once partner(s) are chosen and an LFC established in a region, it is unlikely that the LFC will face direct competition in the ultra-fast broadband market in that region. Since there will be no competition 'in' the market, the competition 'for' the market is particularly important for achieving a good outcome for end-users.

60. In particular, the tender process needs to be designed to encourage competition among potential investment partners within different regions. An important outcome will be to have investment partners competing to provide service in regions, rather than dividing the regions and the CFIC only receiving a single offer in each.

61. In general, we believe that significantly more consideration needs to be given to the detailed design of the tender process. The total government subsidy is large, and it is important that end-users receive value for this money. Initiative failure or underperformance could have a very considerable negative effect on the economy, the sector, and Government's broader goals of economic benefits via this nation-building initiative. Careful consideration needs to be given to the criteria that are used to evaluate the investment proposals, combining clarity and certainty, with flexibility to enable CFIC to deal with complex bid situations.

62. Para 78. The criteria the CFIC must apply when selecting proposals will be as follows:

Selection criteria

The proposal that is likely to best achieve the government's objective, taking into account:

1. the "additionality" of the proposal, defined as:
 - i. the number of potential end-users⁴ able to benefit from new fibre who cannot readily access⁵ existing fibre⁶; plus
 - ii. the number of potential end-users able to benefit from new fibre who, while able to access existing fibre, cannot do so on competitive terms⁷;

2. proposed capital structure:
 - i. amount of new capital invested by the partner;
 - ii. amount of capital sought from the CFIC; and
 - iii. proposed shareholding;

3. commercial viability of the proposal and assessment of the business case;
4. ability of proposed network topology to support unbundled fibre access⁸;
5. track-record of the partner; and
6. the CFIC's target of achieving a roughly proportionate spread of the available government funds across regions, and its ability to be flexible regarding the time span across which it spends the funding.

⁴ This includes any residential, commercial, health, education or other government end-user.

⁵ For these purposes, "readily access" means being able to obtain a fibre connection, as part of a current retail or wholesale offering.

⁶ "Existing fibre" includes the fibre extensions Telecom is required to deploy pursuant to its Operational Separation Undertakings (<http://www.chorus.co.nz/enhancing-the-broadband-network>). As a requirement of the Operational Separation Undertakings, Telecom will be ensuring that 60% of existing PSTN lines will be capable of 20Mbps, 84% will be capable of 10Mbps, and 89% will be capable of 5Mbps, by 31 December 2011.

63. **Kordia Comments:** The selection criteria given in the draft proposal (para 78) are vague, and do not put any emphasis on pricing, which as we have argued will be crucial for promoting actual usage of the new networks. The government also expects that the regional approach described in its proposal will lead to a nationally cohesive network. How this will happen is not that clear in the proposal – the adoption of uniform technical standards is not identified as an assessment criterion for proposals. The government also expects that the network will include neutral points of presence with common interconnection standards and requirements. As we have learnt from the LLU process there needs to be a high level of detail specified in advance to ensure that the collocations facilities and related services (power, air-conditioning etc) are available to and useable by access seekers. This comes back to the point noted above: there needs to be careful planning and design (with consultation with parties, which can improve outcomes). This takes time and the timelines are currently too tight, creating real risk for the Initiative.
64. With regard to an appropriate rate of return, the cost of capital depends on many things, but 10% is used for the TSO, which is a good starting point. The fibre cos aren't quite as risk free as the TSO but in the long run it looks like they will face little competition.

Pricing and regulatory matters

⁷ In general terms, it is expected that overbuild by an LFC can be avoided by accessing the existing fibre for the relevant network segments. However, where such access cannot be gained, then some overbuild may be necessary. The intention is that, in that case, the overbuild will count towards the "additionality".

⁸ Some network topologies (for example Point-to-Point optical networking) support more favourable competition outcomes than others (for example xPON) due to the ability to unbundle individual fibres, and so will be treated more favourably in the assessment process.

65. Para 88. There will be no restrictions or requirements on pricing of any services provided by LFCs. Pricing will be determined by commercial decisions of the LFCs' Boards.
66. **Kordia Comments:** Pricing is key to uptake of ultra-fast broadband and the achievement of the government's objectives. End users must value the service more than the final retail price, retailers must have sufficient margin between the retail price and the dark fibre or bitstream access price, as well as all their other service provisioning costs (e.g. International bandwidth) to cover them a sufficient return, and the LFCs must earn sufficient returns on their fibre investments.
67. As discussed above, competition in the retail market is likely to be relatively intense, given the large number of Internet service providers in operation currently, and given that the LFCs will not be able to operate in the retail market. The key concern is therefore the prices charged by the LFCs, rather than the markup imposed by retailers. There will potentially be two types of price, one for access to dark fibre, and one for wholesale bitstream services.
68. In terms of these prices, the draft proposal states (para 36) that LFCs will have strong incentives to set low prices to encourage use of fibre. In terms of profit maximisation, it is not clear why this is the case. Even if the costs of an LFC are largely fixed (i.e. do not depend on the number of end-users connected), maximising profit (which equals maximising revenue when costs are fixed) does not equate to maximising usage. Instead, profit-maximising LFCs will consider the willingness to pay of consumers (the level and elasticity of demand), and will set prices that extract the maximum amount of revenue possible, given the competition that they face from alternative technologies.
69. In addition, it is unlikely that the costs of an LFC will be fixed and not vary with the number of end-users connected. Instead, LFCs are likely to roll out their networks over time, connecting more end-users as demand grows. When considering whether to connect a new end user, LFCs may therefore consider both the additional revenues and additional costs associated with that end user.

70. It is therefore not clear that LFCs will indeed have an incentive to maximise usage. We also note that the objectives of the LFCs and CFIC in the draft proposal are framed in terms of 'availability' rather than actual usage or uptake of ultra-fast broadband. Unless an LFC can engage in perfect price discrimination and set individual prices for access to each end user, a profit-maximising LFC will not have an incentive to set prices such that every end user whose premises is passed by their fibre network will wish to join (if costs are fixed). It is therefore possible to end up with a network that is highly available, but not fully used.
71. Additional concerns arise in respect of the prices for wholesale bitstream access, if the LFCs provide such services. As noted above, the LFCs will not be the only players in this market. Other wholesale aggregators may wish to buy access to dark fibre and resell bitstream services to smaller retailers. The LFCs may therefore be in a position of both selling dark fibre access to wholesale aggregators, and competing in the wholesale market themselves.
72. In this case, similar concerns to the reasons why it is undesirable for the LFCs to compete in the retail market arise. In addition, from a retailer's point of view, buying access to dark fibre or buying bitstream access are substitutes to some extent. It is therefore important that the relative price between these two services reflects differences in related costs.
73. Para 89. The LFCs, like any other company, will be subject to the existing regulatory regime. This comprises the Telecommunications Act 2001 and the Commerce Act 1986 (Part 4 in particular).

Rationale

The rationale of this approach is that:

- LFCs will have incentives to price commercially (to ensure uptake of services and cashflow);
- LFCs' requirement to operate on an open access basis, and not to provide retail services, minimises incentives to operate anti-competitively;
- Schedule 3 of the Telecommunications Act 2001 provides for the Commerce Commission to investigate whether certain services should be subject to regulation under that Act. Part 4 of the Commerce Act 1986 provides for regulation of excessive prices in situations where there is no competition and the benefits of regulation substantially exceed the costs. This legislation could be

called on in the event of any anti-competitive or monopolistic conduct. In both cases, the government may not act without a Commerce Commission recommendation to regulate, and government agreement is required to introduce any new regulation; and

- there will be no “regulatory holiday” for the LFCs – that would require legislation and would be inconsistent with the government’s overall approach to competition policy and law.

74. **Kordia Comments:** In the draft proposal, the government has some concern that the LFCs could engage in anti-competitive conduct (e.g. para 36), and the paper proposes a way to address this through the restriction on retail market participation. However, there is a difference between market power obtained through anti-competitive conduct, and market power arising from the ‘natural’ structure of the industry. The government’s proposal will likely create several regional natural monopolies that may ultimately face limited competition from alternative technologies. Aside from the threat of regulation under the Commerce Act or Telecommunications Act (a weak threat as we note below), we question whether there is enough constraint on the pricing behaviour of the LFCs. This is particularly important given that the government is effectively subsidising these potential monopolies into existence.

75. Perhaps more importantly, by not clearly establishing the regulatory regime in advance of the time when such issues of market power exist, the government is subjecting the LFCs to asymmetric regulatory risk. As noted above, it is not certain that the fibre investment will be profitable. However, if it is profitable, it may be difficult to distinguish this good outcome from the result of exercise of market power by the LFCs. Therefore, if the investment is profitable, the LFCs may become regulated, and these profits will not be realised. Anticipating this risk in advance, private investors may be unwilling to invest, or may require a higher return on their investment.

76. We therefore believe it would be valuable for the government to give more certainty regarding the regulatory process from the outset. There are two possibilities that we believe deserve serious consideration.

77. Firstly, the Telecommunications Act should be amended to make it clear that the Commission is able to take action *before* a service is available (in particular, it can commence a Schedule 3 investigation and then consider an application for a determination before a service commences). That is exactly what the Australian Government has proposed should happen in relation to its recently announced and radically changed ultra-fast broadband package. It has recognised this problem and proposes to amend the legislation to allow ACCC to regulate before the FTTP service is available.
78. In this way, Government is not required to take specific regulatory steps now. Rather, it can give the Commission the ability to consider what to do, depending on how matters develop.
79. Note however that this should not rule out the Government taking more assertive regulatory action now rather than leaving this to be handled later by the Commission, if it decides it is appropriate to do so. As noted above, it may well be in the interests of investors in LFCs to have regulatory certainty before proceeding further, as happened in Singapore for example. We are only suggesting giving the proposed powers to the Commission if Government is reluctant to take or enable earlier regulatory steps. We consider Government's objectives (and investors' needs) are best met by establishing a clear regulatory framework now.
80. Importantly, enabling the Commission to move before the services commence will provide the minimal realistic way of regulating price and non-price terms. The key difficulty is the time the process takes. First, the Commission undertakes a Schedule 3 review to determine whether or not to add the services provided by the LFCs to Schedule 1. The Minister then considers whether to accept the recommendation. Then the determination process starts. Only from the time when a determination is made will regulated access be available. Typically this process will take 2 to 5 years, with 2 years being unlikely based on history. Mobile termination, leading to acceptance of Telecom and Vodafone undertakings, took around 4 years. Mobile roaming is still at the Schedule 3 phase over 2 years after the investigation commenced. Neither of these got to subsequent steps such as consideration of an application for a determination (which can typically take most of a year).
81. If a Schedule 3 investigation does not commence until after the service is available, there is, realistically, virtually no regulatory response available, particularly in the key

initial years of the service. Yet the LFC generally will have bottleneck control with incentives to leverage off that bottleneck, as noted above.

82. The discussion paper notes the availability of Commerce Act remedies. However ex post remedies such as Section 36 face even more time delay (0867 and data tails are taking over 7 years to resolve) and there are the well-known limitations on the ability of the Commerce Act (especially section 36) to respond in anti-competitive situations. The Commerce Act is largely ineffectual in its ability to deal with the issues raised by this initiative. Regulation of the services provided by LFCs, under Part 4 of the Act, is a most unlikely scenario, particularly given existing regulation in the form of the Telecommunications Act.
83. The second option to consider is for the LFCs to be subject to 'information disclosure' regulation under the Commerce Amendment Act 2008. This is a relatively light-handed regulation that would simply seek to collect specified information about the LFCs' operations but does not impose direct controls on pricing or other activities. However, it would signal that the government is concerned about potential market power issues, and (if properly designed) would provide a sound basis for the assessment of market power.
84. In addition, information disclosure would make it possible to benchmark the performance of regional LFCs against each other, as is currently done for electricity distribution networks. This can create some indirect competition between the LFCs even when they do not directly supply the same geographic markets.

Demand-side initiatives

85. **Kordia Comments:** The intervention and the stated objectives of CFIC and the LFCs are aimed at maximising the availability of fibre. While this is clearly necessary for increased uptake, it is not sufficient. An alternative approach would be to subsidise uptake directly, or seek to stimulate and co-ordinate demand more generally, and allow the resulting demand stimulation to bring forth fully commercial supply.
86. This alternative demand side option, and the proposed CFIC intervention, both carry some risk of subsidising activity that would have been undertaken anyway.

87. By intervening on the supply side of the market, the government has avoided the need to address a potentially difficult co-ordination problem associated with the need to aggregate sufficient demand in a locality to induce commercial supply. This problem is not insoluble, as regional initiatives such as the work of Venture Southland have shown.
88. Moreover, if demand side initiatives had instead been used, the risk of under-utilisation of installed fibre would be greatly mitigated.
89. Given the current state of play, and the apparent momentum behind the CFIC initiative, it may be infeasible to switch intervention strategies. However, it would be feasible, and potentially valuable from the perspective of an uptake objective, to blend some demand side interventions into the current proposal, for example by allocating some funds towards demand stimulation in low-income neighbourhoods and/or for small businesses.
90. Para 90. In order to stimulate take-up of services offered over the new fibre networks, the government will continue to facilitate the readiness of all public sector agencies, and in particular the health and education sectors, to take full advantage of fibre network services.
91. **Kordia Comment:** The government should ensure that its syndicated procurement models do not result in the public sector agencies being unavailable to the service providers that use the local fibre cos. The purchasing power of public sector agencies is a major demand-side consideration, as the discussion paper notes. Agencies locked into syndicated procurement or other supply agreements will not create additional demand for the LFCs' services.
92. With SSC currently going to the market to seek replacements for the GSN, this is an immediate issue. The solution is to require agencies (or encourage them where Government is not able to compel an agency) to only enter supply agreements, including syndicated procurement agreements, which provide for the ability to go back to the market when the LFC service becomes available. We suggest that Government

notifies SSC at the earliest opportunity to ensure suitable wording is included in supply agreements.

93. Para 92. The government has made a commitment that \$150 million of the total \$1.5 billion broadband investment will be spent on making schools broadband ready. The initial \$34 million tranche of this funding will be spent on upgrading the internal networks of some schools.

94. **Kordia Comment:** Key to the success of this will be the interconnection of service providers with the local fibre cos.

Complementary measures

Environmental and access issues

95. Para 97. Existing infrastructure (above and below ground) can be a valuable part of future fibre deployment, and its availability can reduce the cost of network deployment. Deployment and use of such infrastructure is governed by several pieces of legislation (for example the Resource Management Act 1991, the Telecommunications Act 2001, the Electricity Act 1992 and the Local Government Act 2002) and regulations. It is proposed that the Ministry of Economic Development, in consultation with the Ministry for the Environment, the Department of Internal Affairs and The Treasury should be directed to report back on how best to facilitate access to, and use of:

- a. fibre optic cable deployment on telephone and electricity poles;
- b. local authority-owned passive infrastructure such as ducts;
- c. micro-trenching; and
- d. fibre optic cable “drops” from the street-side into customer premises.

96. **Kordia Comments:** Kordia strongly supports this initiative. In addition to the focus on fibre, officials should also look at how best to facilitate access for ultra fast wireless services, which will use the fibre infrastructure for backhaul.

97. There can be a substantial reduction in the cost of achieving Government's goals if the proposed Departmental review considers access to passive infrastructure (such as ducts) in addition to local authority infrastructure. The UK regulator, Ofcom, and the Australian Government have each recognised the importance of access to other service providers' ducts. This is a key component in Ofcom's approach, as part of its ongoing NGN Access review. Additionally, the Australian Government, in its recent announcements, has proposed to allow access to other service providers' ducts.
98. Ducts will not always be suitable for additional fibre. However, the position may not be as incumbents claim: there may be substantial infrastructure that can be used in this way. Ofcom has undertaken an independent review of available ducting, and the Australian Government intends to do a similar review.
99. Service Providers that are required to provide access to infrastructure such as ducts will be recompensed their costs and profit, as is proposed in Australia and the UK. So, taking this approach is not unfair or unreasonable. The countervailing benefits are considerable. The use of existing infrastructure substantially reduces the cost of delivering the FTTP solution. It allows more parties to put in competitive bids (otherwise only the incumbent's bid would be realistically viable). The business case, and positive outcomes for the Government plans, is challenging enough as it is without access to service provider ducts.
100. It appears that Government is already considering mandated access to some forms of infrastructure (namely, telephone and power poles, as in (a) above). It would be appropriate to take a technology-neutral approach and allow access to all forms of passive infrastructure not just phone and power poles.
101. If however, (a) above does not, contrary to our understanding, refer to third party access to poles, then, for the reasons noted above in relation to ducts, Government should mandate third party access to poles. For example, if third parties get access to lines companies' poles, on the basis that the lines companies are properly paid for that access. FTTP bidders generally would be able to put in lower bids. Telco-based providers could use lines company infrastructure and lines companies can use telco infrastructure such as ducts, for example. This encourages competition, when competition may not realistically exist, and reduce cost of delivering the LFC services.

102. In combination, this could make a substantial difference to outcomes of the Broadband Initiative (and may even make the difference between success and failure).

Rural broadband

103. Para 99. In pre-election statements, the government indicated that a rural broadband initiative equating to \$48 million would be adopted, in addition to the \$1.5 billion initiative.

Kordia Comments: Kordia considers that rural areas are a greater priority for improved broadband services than some urban areas. This is because many rural areas lack access to services that are already available in larger centres. In fact it could be argued that the more remote and underserved the community, the greater the benefits of broadband as it provides the opportunity for education, health and employment. A critical part of improving the service delivery in rural areas is the availability of cost effective backhaul services, which will improve the commercial viability of network deployments by access providers. Kordia notes that \$48m for the remaining 25% of the population is an extremely disproportionate allocation of funding, particularly when two of the most significant contributors to our economy, agriculture and tourism, are located in rural areas. The government may be expecting that infrastructure from the urban centres deployed by the LFCs may creep out into rural NZ, but it is not clear how or why this would happen. Kordia is Keen to work with MED and others to develop solutions for rural New Zealand that can significantly improve the availability and uptake of high speed broadband.

Risks

Telecom is required to make investments that it would not otherwise make, given the changed environment

104. Para 112. Services able to be delivered over fibre are superior to those over ADSL2+ and VDSL2, and there is a risk that the value of Telecom's investment may be eroded as customers move to the fibre network. As such, Telecom may not have made this investment had it known the environment would change.
105. **Kordia Comments:** Overseas jurisdictions have looked at a mandatory cutting of the copper network as a means to drive the uptake of new fibre based services and improve the commercial viability of the new networks. As the government has not proposed a mandatory cutting of the copper to drive uptake on to the fibre networks, the co-existence of the copper based infrastructure, whilst slowing the uptake of fibre, will provide competitive pressure on the fibre cos. However the superiority of fibre access will not be discernable unless backhaul, aggregation, switching (peering) and international bandwidth constraints are addressed.
106. Para 113. However, the government can help mitigate this risk. Telecom will be able to participate in the contestable process and so is able to access the government investment. In addition, Telecom will be able to access dark fibre on the new network. It is also able to seek a review of its Operational Separation Undertakings.
107. **Kordia comments:** Kordia and others have invested in reliance on the current regulatory environment, in particular the operational separation undertakings. Any move to relax the requirement on Telecom to act in accordance with the equivalence undertakings will distort the incentives that Telecom now has to serve its customers. We consider that the equivalence undertakings provide an important underpinning to competition and they should therefore not be relaxed.

ENDS

Appendix: BT Global Services Paper - November 2008

1.1 Open Access to Broadband Infrastructure

1.1.1 Introduction

1. There is currently considerable debate in the communications sector on creating the right conditions for investment in and optimum use of broadband infrastructure. Core networks are already based on broadband infrastructure in most countries, and typically co-exist with multiple competing networks. Now operators in many countries operators have begun investment, or have at least announced plans for investment, in fibre access networks. It is widely recognised that new fibre access network investment is risky, and that it is unlikely that there will be scope to build competing fibre access networks, even if there may be limited competition between technological solutions (i.e. cable television versus fixed telecommunications versus mobile access networks). In some cases, governments are prepared to offer funding for fibre network build-out, but stipulate that the resultant network should be made available on an open access basis. However, there is no common agreement on what "open access" means in this context.

1.1.2 Background

2. Within the European Communications Regulatory Framework, the current **Directive 2002/19/EC** on access to, and interconnection of, electronic communications networks and associated facilities (**Access Directive**) contains a legal definition of "access" which is as follows: *"access means the making available of facilities and/or services, to another undertaking, under defined conditions, on either an exclusive or non-exclusive basis, for the purpose of providing electronic communications services. It covers, inter alia: access to network elements and associated facilities, which may involve the connection of equipment, by fixed or non-fixed means (in particular this includes access to the local loop and to facilities and services necessary to provide services over the local loop), access to physical infrastructure including buildings, ducts and masts; access to relevant software systems including operational support systems, access to number translation or systems offering equivalent functionality, access to fixed and mobile networks, in particular for roaming, access to conditional access systems for digital television services; access to virtual network services."*
3. More recently, the OECD paper "Broadband Growth and Policies in OECD Countries" written for the Seoul Ministerial meeting on the future of the internet economy (June 2008) says:

The term "open access" refers to an arrangement where network providers offer capacity or access to all market participants under the same terms and conditions. Operators of open access networks must allow competitive access to the network on non-discriminatory terms.

4. In a separate paper on fibre investment (Developments in fibre Technologies and Investment, DSTI/ICCP/CISP(2007)4/FINAL) the OECD also concluded :-

The business models for fibre-based networks depend on high upfront investments in infrastructure. Penetration rate and capital expenditure are the main factors, which influence the profitability of the model and the risk that an investor will need to face. The penetration rate influences the cost structure of a network owner and will in turn affect pricing to a large extent so as to raise questions as to whether, in a given market, facilities-based competition will emerge. The impact of penetration rates on the monthly price for an all-fibre network is such that it is unlikely there will be multiple networks to guarantee a competitive market.

1.1.3 Role of Open Access

5. There is a consensus, therefore, that fibre access networks will be subject to higher risk than core networks, and are much less likely to be duplicated. Network providers will be likely to have market power, and an obligation to provide wholesale services so that other operators can provide retail services in competition with the access network owner.
6. Indeed it is observable that vigorous retail competition stimulates the market, and increases the overall level of usage of the underlying infrastructure. The provision of retail services to end users at the same time as wholesale services to competitors is likely to be the best guarantee of achieving a return on the network investment.
7. To ensure sustainable competition, it will be critical that the wholesale services provided should be offered to all on the same terms and conditions, provisioned to all using the same processes, whether the customer is a competitor or a downstream arm of the network operator.
8. Therefore "open access" arrangements need to embrace the concept of equivalence between all those service providers who make use of the infrastructure.
9. Defining at just what level of the network "open access" should be provided is best determined in a technology neutral manner. One possible way of capturing that definition is to borrow from the principle that "*regulation should promote competition between competing infrastructures as deep in the network as such competition was likely to be effective and sustainable*"⁹ as used by Ofcom in their Strategic Review of Telecommunications, 2005. Where it is not economical to duplicate infrastructure, wholesale services should be provided. These services are designed to facilitate

⁹ Ofcom, "Final statements on the Strategic Review of Telecommunications and undertakings in lieu of a reference under the Enterprise Act 2002", 22 September 2005 para 1.5

competition rather than to facilitate the building of competing infrastructure. For this reason they should take the form of active elements (i.e. bitstream services) rather than passive network infrastructure elements (such as access to duct or to segments of dark fibre).

10. Determining just where the economic point of access to the network is, will to some degree be dependent on the market being served. The residential consumer market has distinctly different characteristics to the business enterprise market. Residential consumers are typically grouped together forming a mass market. By contrast, connectivity demand from enterprises (and possibly also the residential demand for very high bandwidth) is likely to be geographically dispersed, so can only be economically addressed through active wholesale services such as Ethernet.

1.1.4

Definition of open access

11. The foregoing leads to the following definition:

- a. **The term "open access" refers to an arrangement whereby a communications network provider, who enjoys a position of dominance or market power within a defined market, is required to provide actively managed transmission capacity to all market participants, including capacity for use within the provider's own group, on equivalent terms and conditions, at the lowest point in the network which will sustain competition.**
- b. **Exceptionally, where networks are based wholly on new build funded by the public, "open access" may require provision by the network owner of passive elements (duct space, dark fibre) on a non discriminatory basis.**

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