
Submission

New Zealand's Digital Pathway: A Fast Broadband Future Broadband Investment Fund: Draft Criteria and Proposed Process

Respondent Information

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About Ericsson

Ericsson is the world's leading provider of technology and services to telecom operators. The market leader in 2G and 3G mobile technologies, Ericsson supplies communications services and manages networks that serve more than 195 million subscribers. The company's portfolio comprises mobile and fixed network infrastructure and broadband and multimedia solutions for operators, enterprises and developers. The Sony Ericsson joint venture provides consumers with feature-rich personal mobile devices.

Ericsson is advancing its vision of 'communication for all' through innovation, technology, and sustainable business solutions. Working in 175 countries, more than 70,000 employees generated revenue of USD 27.9 billion (SEK 188 billion) in 2007. Founded in 1876 and headquartered in Stockholm, Sweden, Ericsson is listed on the Stockholm and NASDAQ stock exchanges.

Broadband is the fastest growing telecoms service in history and its uptake has only really been limited by supply. Ericsson expects annual fixed traffic volumes to rocket from 50 million Terabytes in 2007 to 350 million Terabytes by 2012, as demand grows for broadband services like IPTV, music downloads and online gaming.

Ericsson's aim is to help operators create and maintain a broadband mass market – and deliver the desired digital society benefits – by delivering broadband connectivity everywhere, for everyone, accessible from any device.

We have had a presence in New Zealand for over 100 years and are pleased to provide this submission to the Broadband Investment Fund Draft Criteria.

Submission Point 1: Timing

While Ericsson has no specific disagreement with the proposed time schedule, we would note that new Zealanders are not likely to see any broadband deployments resulting from the fund until Quarter 4 of 2009. While this may be a realistic period over which to evaluate and mobilize such a process, the ensuing uncertainty may serve to defer investments already in the planning stages. We would therefore recommend that the criteria for the distribution of funds are clearly defined and published as quickly as practicable.

Submission Point 2: Process

Noted without comment.

Submission Point 3: Eligibility Criteria

General

We understand that the intention of the Broadband Investment Fund is to foster competition and investment in telecommunications. It is our belief that any such intervention needs to:

- Balance the competitive outcomes against the imperative of strong commercial viability.
- Create an early mass-market of attractive services and devices based on open industry standards. The growth of mobile communications is a good example of such a market. '

Further, it is Ericsson's belief that, alongside fibre networks, cable and mobile broadband technologies, including LTE (the evolution of today's GSM / WCDMA networks), will provide the necessary platforms for facilities-based competition.

Open Access Fibre

The draft criteria have a requirement for open access to the duct and dark fibre levels. We understand that the intent of this criterion is to foster competition. Ericsson would have a concern that this requirement limits the returns on what is a significant network investment to utility levels. Our international experience is that:

- A requirement for Open access at the passive network level increases the complexity of the network design. This has run-on impacts in the need for higher Capital Expenditure. It will also lead to higher and / or duplicated Operational Costs
- A competitive industry offering a rich range of services and price packages can be achieved by requiring open wholesale access at layer 2 of the ISO model (typically Ethernet transport). This also allows better returns for the company deploying the passive plant.
- A likely (and undesirable) outcome of open access at the passive physical (fibre) layer is the use of non-standard protocols and features which will lock-in subscribers to that active operator, and reduce the opportunities for subscribers to churn to more cost-effective operators. The consequence is a reduction in competition presumably the opposite of the desired outcome.

We refer you to a recent report by Analysys Mason for the UK Broadband Stakeholder Group¹ which details a number of case studies of fibre networks and identifies key success factors for the success of government interventions.

New Fibre Deployment Techniques

In 'Greenfield' developments there is little cost difference between installing fibre lines and copper lines. In fact, in several countries Telco line deployments are primarily fibre-based in greenfields so as to avoid the need to unbundle services for competitor access.

Vector - North Shore City Network A Broadband Challenge Project

- Connecting schools, councils, & libraries on Auckland's North Shore
 - 26000 students connected at true broadband speeds
- Ericsson Air-blown fibre
 - Rapid Roll-out
 - Fewer fusion points
 - Less disruption
- Vector can separate build costs from the cost of connecting users

In areas where there are existing access networks, it is commonly observed that fibre deployment is uneconomic. While it is true that there is an up-front capital cost which needs to be incurred before customer revenues can be realized, there are several mitigating factors which deserve deeper consideration. These include:

- The use of new deployment techniques including sonar-guided directional drilling, narrow trenching, air-blown fibre micro-ducting.
- The use of Overhead fibre cables. While less desirable from an aesthetic perspective, overhead cabling provide a cost-effective means for rapid fibre

deployments. It should be noted that modern fibre cables are densely packed and overhead cable can nowadays have quite slim form-factors.

These techniques can **significantly** decrease the cost of fibre deployment compared to traditional trenching. Furthermore, they can defer the fibre investment until customers are acquired and allow for quick deployment with less environmental and traffic impact than conventional techniques.

While we appreciate the need for public consultation on specific civil works projects, it is our perception that currently the deployment of new fibre build techniques in New Zealand is inhibited by disparate council administration and restrictive engineering practices.

In short, the current processes and constraints maintained by local government represent one of the larger parts of the cost of deploying these networks, far outweighing the cost of equipment and cables. National initiatives which streamline the processes for local government approvals, and the national acceptance of new and more cost-effective civil works techniques, will make a dramatic difference to the cost of these networks builds, greatly increasing the likelihood that they will be built.

Broadband Delivery via Mobile Networks

Wireless technology has evolved to a point where it now represents a viable means of delivering broadband services thus providing a competitive alternative to the fixed fibre and copper access networks. In particular High-speed packet access (HSPA), a derivation of 3GSM, the world's most prolific mobile technology standard, is becoming a significant standard. With over 400 HSPA devices available today, it is a true mass-market offering which is now being deployed in lower frequency bands (850, 900 MHz) to enable better in-building coverage and longer reach for rural services. Today HSPA delivers peak data speeds of 14.4Mbps

¹ 'Models for efficient and effective public sector intervention in next generation broadband access networks', Analysys Mason 2008. http://www.broadbanduk.org/component/option,com_docman/task,doc_view/gid,1008/Itemid,63/

on the downlink (today's commercially available devices support 7.2Mbps) and 1.7Mbps on the uplink. Further HSPA evolution will improve data rates to 42Mbps on the downlink and up to 12Mbps on the uplink.

The evolution of the radio access network continues with long-term evolution (LTE), which will provide more than 100Mbps on the downlink and more than 50Mbps on the uplink. The technology allows for speeds of 300Mbps and possibly higher, and Ericsson has already demonstrated peak rates of about 160Mbps.

Both Vodafone and Telecom have announced HSPA deployments in New Zealand.

Telstra NextG

3G HSPA @ 850 MHz

- Superior Rural and in-building coverage
- Covers 99 per cent of the Australian population
- Built in 10 months (6400 base stations)
- Over 40 devices, including handsets and data cards capable of 7.2Mbps peak rated download speeds
- ARPU differential of A\$20 over 2G subscribers
- Growing mobile services revenue, subscribers and average revenue per user (ARPU) at world leading levels.

Ericsson would recommend that the Broadband Investment Fund acknowledge 3G HSPA as a credible and critical means of delivering broadband services. In practical terms this means that New Zealand regulation on mobile frequency allocation should harmonise with accepted global standards. This will reduce the total cost of broadband implementation, allow New Zealand users to benefit from a wide portfolio of attractive devices, and the ability to use these devices within a wide global footprint. It will also enable tourists in-bound to New Zealand to use their existing devices.

Conclusion

Ericsson commends the establishment of a focused initiative to foster widespread broadband growth. It is critical that the Broadband Investment Fund not become a disincentive for investments which are already in planning. Nor should it preclude risk-taking investors from achieving returns above utility margins.

To this end we recommend:

- Investigating new fibre build techniques such as low-profile overhead cables, narrow-trenching, and directional drilling which are not uniformly accepted by regional and local authorities.
- Recognising that evolved 3G Mobile technologies can be used to provide facilities-based broadband competition at high speeds to a large number of urban and rural users. In practical terms this means that New Zealand regulation on mobile frequency allocation (eg the UHF Television band when / if available) should harmonise with accepted mass-market global standards.
- Revising the criterion around mandatory Open Access to the Ethernet (Layer 2) level. This will help to improve potential returns and will not stymie either wholesale or facilities-based competition given the likely presence of 3G Mobile Broadband services.

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