

Ultra Fast Broadband – ISPANZ Response

This document summarizes responses from the ISPANZ membership regarding products and services they would like to see delivered over the new fibre network being built under the supervision of Crown Fibre Holdings Ltd. It is intended to provide guidance to CFH as they work through this important project to ensure that the final solution delivered fits the need of the marketplace and most importantly, the end user.

ISPANZ has chosen to comment only on internet services as they are delivered today by ISPs. We are aware that there are a range of other services which may be delivered over the new network, the providers of which may have vastly different requirements to those outlined below. This is not to say that we disregard these requirements (indeed, some of these future providers may be ISPANZ members) – rather, we consider that the shape of these services is not yet defined well enough to enable useful comment at this stage. We would certainly welcome the opportunity to comment on this as the picture becomes clearer.

We would like to thank Crown Fibre Holdings for the opportunity to comment, and re-iterate that we are extremely enthusiastic to be involved in this process as it develops. We see this document as the first step in an ongoing discussion, rather than a final submission on the issue.

Feedback is presented as a one-page summary, followed by verbatim responses from the membership to questions posed.

Summary

Speeds

There is general agreement that any product offering less than 10 Mbps CIR / 100Mbps PIR would not be desired by the market – services delivered over copper already offer the options in this space at (presumably) a more attractive price point.

The consensus is that a range of 10Mbps/100Mbps/1000Mbps options will be required. A few respondents saw a requirement for asymmetrical service, but general agreement was that this doesn't need to be mandated.

Lit vs Dark Fibre

It appears that most ISPANZ members would prefer to purchase a Layer 2 service today, primarily because they do not have the infrastructure which would allow them to offer services dark fibre at this time. However, it is clear there is already demand for open access to dark fibre from many providers, and there will be more in the future.

There should also be a clear delineation between Layer 2 and Layer 3 services, and wholesale providers must not be allowed to encroach into the Layer 3 space – ISPANZ are very conscious of the past here, and we wish to ensure that wholesale providers remain just that.

Standards

Concerns were raised by many respondents over the operational viability of dealing with multiple LFCs across different regions. There is a clearly communicated desire for standardisation of service elements. In particular:

- OSS/BSS systems – to provide fair and equitable access for all ISPs, regardless of size. Crown Fibre has indicated there will be a single operational support platform aggregating and standardising all the individual fibre providers on a national basis – this would certainly ISPANZ preference.
- Technical elements – will ISPs need to purchase different equipment to gain access to different LFCs?

Interconnect/Peering

Several respondents raised questions over the cost of setting up and maintaining POIs to multiple LFCs. The requirement for ISPs is that there should not be significant barriers to providing service through multiple LFCs. Will there be common peering points / transit hubs where all wholesale providers and access seekers interact? How does CFH envision this will work?

Ongoing Support / Maintenance

Respondents have raised concerns over the ability of those building the network to maintain and operate it in the longer term. General consensus is that we will require at least business hours (preferably 24/7) access to local (NZ based) support resource with appropriate response times based on the urgency of the fault or request.



INTERNET SERVICE PROVIDERS
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Current State vs Future State

ISPANZ members were also asked whether a 'future state' solution that mirrored the 'current state' from a product perspective would be an acceptable end game. Feedback very strongly indicated that this would not be an acceptable outcome. Given the budget, resource and time being spent on this project, members would expect to see some improvement on the status quo. Specifically, respondents would like to see improved speeds and ease of access for small and large providers.

Responses from ISPANZ Membership

Actual responses from the membership follow – ISP names have been removed.

<p>1. In general, what kind of wholesale products would you like to purchase from carriers on a new fibre network? What is on your 'wish' list? What is on your 'must have' list?</p>
<p><i>Must have dark fibre and layer-2 services. Must NOT have any layer-3, including route reflectors, multicast RPs, etc, and must not include voice or video services. Must have the ability to use our own CPE regardless of "lit" status</i></p>
<p><i>We can see several types of services required:</i></p> <p><i>(1) Low cost "best efforts" rate service; 100 Mbps EIR, but low CIR. PIR >= 100 Mbps. Basic frame service; no special layer 2 transparency or QoS requirements. Should meet MEF EVPL service delivery profiles. Intended for Internet access.</i></p> <p><i>(2) EVPL services with larger guaranteed CIR, layer 2 transparency (allowing layer 2 networks to interconnect and run L2 protocols such as spanning tree, GVRP etc), gigabit EIR/PIR. Intended for more advanced "business" type services.</i></p> <p><i>(3) MEF E-Tree options for multicast delivery, PPPoE etc. Guaranteed downstream bandwidth sufficient for 4+ channels of HD television, both unicast and multicast.</i></p> <p><i>(4) Point-to-point dark fibre.</i></p>
<ul style="list-style-type: none"> • <i>Connection from Handover Links or POI to the end customer with a range of access speeds and symmetrical/asymmetrical options with zero contention.</i> • <i>Dedicated and contention connections with CIR/PIR</i> • <i>Point to point and Point to multipoint services</i> • <i>Dark fibre</i>
<p><i>10/100/1000Mbit symmetrical access and dark fibre</i></p>
<p><i>Consumer Asymmetrical 10 – 100Mb, Business 10Mb – Gb+ including symmetrical. Layer 2 at a minimum, also dark fibre options. Dedicated circuit option back to hand over point in addition to contended circuit. Single operational support platform aggregating and standardising all the individual fibre providers on a national basis.</i></p>
<p><i>Our view is that the current "copper world" environment that offers a ladder of investment is working therefore there should not be an attempt to "change what's not broken". Therefore the default product offered by Local Fibre Co's should be dark fibre. This will provide service providers with the option of investing in access networks themselves, as with UCLL, as well as providing competition at the wholesale/layer 2 market. LFC's should be free to compete at the wholesale level, but this should be on the basis of open competition, and this should not be the LFCs primary business.</i></p>

2. What would be your minimum requirements for such a service?
<i>As above</i>
<i>More or less as per 1/. We have relatively little use in the short term for options other than option (1) above, other than variations in link speed and CIR, however we would not rule these out in the (potentially near) future.</i>
<ul style="list-style-type: none"> • <i>B2B interfaces with network or LFCs</i> • <i>Network monitoring services through managed portal or SNMP</i> • <i>Minimum specifications on jitter, packet loss etc</i> • <i>Service levels and support, at least business hours if not 24/7</i>
<i>10/100/1000 symmetrical with good CIR, and low barrier to entry, economic handover points, QOS across the network.</i>
<i>As above</i>
<i>Minimum requirement is that the unbundled fibre product be able to support both point-to-point and point-to-multipoint (PON) architectures, and that consistent operational procedures are in place for the unbundling of the fibre</i>

3. What is the minimum end-user link speed you would purchase on such a network? 10Mbps? 50Mbps? 100Mbps? Do you see a requirement for symmetrical/asymmetrical options?
<i>100Mbps. If this is to be a next-gen fibre service, I can't see the requirement for asymmetrical bandwidth – this would be a throwback to legacy infrastructures and pricing models.</i>
<i>100 Mbps PIR minimum, string preference for gigabit. Frankly, we don't understand why anyone would mandate 100 Mbps optics when gigabit optics are cheaper, reliable and readily available.</i>
<i>Similarly, we believe there is no technical reason to mandate significantly asymmetric services. The reality is that Ethernet-based technologies are inherently symmetric, and this should be reflected in the service offerings on the UFB networks. Even with GPON, the upstream burst rate is 1 Gbps; access to upstream burst is simply a matter of managing EIR. We expect that a network with a heavy domestic use component will carry more downstream traffic than upstream, so even in those few cases where the network is genuinely asymmetric, this should not be a basis for mandating asymmetric bandwidth profiles.</i>
<i>At least 10MB. Practically anything less is more than likely cost effective to be delivered by copper. The ability will need to be given for a range of symmetrical/asymmetrical options regarding access bandwidth into the POI. GB connections also to be available with CIR/PIR</i>
<i>10/100/1000Mbit symmetrical, it costs more to shape to smaller so why bother</i>
<i>minimum 10Mb and symmetrical requirement for business.</i>
<i>Not relevant in a dark fibre world</i>

4. Irrespective of price, would you prefer to purchase a dark fibre wholesale product, or a lit fibre (layer 2) wholesale product?
<i>Dark fibre</i>
<i>We have a preference for lit networks to be used. However, dark fibre provides an option for non-Ethernet services, services that do not rely on the function of third-party equipment and services with guaranteed bandwidth requirements beyond what can be provided on a network with potentially multiple aggregation points.</i>
<i>Preference is Layer 2 as there needs to be an operational component of the layer 2 network from a LFC. This makes it more cost effective for an ISP with POI to purchase this service. If access seekers are after dark fibre, the expertise is required to lite that up.</i>
<i>Prefer Layer2 with an option of dark fibre also available, or else dark fibre at LLU prices.</i>
<i>We definitely want dark fibre in some places. . I expect we may need layer 2 in some areas depending on geography.</i>
<i>Dark fibre</i>

5. As a minimum requirement, is it acceptable to you that wholesale providers on the new network deliver a product set to the industry that mirrors the status quo? (that is: it will be as operationally viable as wholesale products delivered now)
<i>No. This is an opportunity to create a next-gen network infrastructure and being able to replicate what is there at the moment is not a sensible option. What "is there" at the moment generally includes elements of layer-3 which are ABSOLUTELY NOT acceptable. The business model for fibre providers WILL change and will be stripped back to layer-1 and layer-2 – I think we need to start as we mean to continue.</i>
<i>No. Wholesale providers need to be providing network services that: (3) are bandwidth-rich; that is the constrained-bandwidth models currently available are completely abandoned. Core bandwidth on modern switched networks is cheap, and the cost increment between "low" (<= 10 Mbps) and "high" (>= 100 Mbps) on the home run is negligible. Thus there is no reason whatsoever to accept a wholesale service capable of bursting to 100 Mbps and beyond 99+% of the time. In fact, the only real constraint to bandwidth should be the amount bandwidth purchased by access seekers at the NNI. (2) Are easy to purchase, interface and configure. The cost of access should allow for smaller players to access wholesale services without artificial barriers to entry, such as up front bond payments, large installation fees, large NNI rentals, complex, compulsory OSS/BSS systems to interface into etc. (3) Are competitive for both small and large players. While we recognise that economies of scale will exist for large players, these should not be artificial, e.g. no volume discounting etc. In short, we are looking for a significant change in attitude from the wholesale supply system from one focussed on large players trying to sell each other the minimum usable service, to one focussed on all players doing the best they reasonably can and the best price that can be sustainably offered. This is utterly essential to drive take-up and innovation.</i>
<i>The LFC's need to offer the access only to enable integrators and Retail SP to offer services. The operational viability comes with the ability to access networks or areas previously in accessible physically and financially. This can only be achieved through LFC collaboration.</i>
<i>If the ambition of building fibre is to replicate services in the market now we may as well just give up.</i>

What's the point in investing 1.5billion to get a product with 32kbit CIR ?

I would expect improvement of the current operation set up as we not have legacy system/process constraints

Competition should exist at the wholesale layer as it does today, therefore we would expect a range of wholesale products to exist.

6. Do you have any further concerns or requirements you would like to express at this time?

Dark fibre should be the foremost consideration in this exercise – this will encourage a vibrant wholesale model and encourage service differentiation. Dark fibre service pricing MUST be transparent, realistic, and allow a service provider to build competing layer-2 services. Layer-2 support capability is something that should be asked of every LFC – most do not do this currently, and therefore it is from my perspective a very difficult sell to say that they are capable of operating a layer-2 network infrastructure. The obvious answer is to outsource this type of support, but presumably larger (international) players will be favoured for this type of requirement and this would see the profits of this network investment diluted to overseas interests.

We wish to re-iterate the point about barriers to entry. In particular, we are concerned that such barriers may be erected by stealth, for example by mandating the use of complex OSS/BSS systems that are expensive to develop and operate, or by technical requirements that exceed those that are actually necessary to operate the service.

Note that the TCF currently has a group looking at OSS/BSS standards.

We are concerned that this forum, traditionally representative of larger players, may (intentionally or otherwise) persuade CFH to mandate OSS/BSS standards that are unpalatable to smaller ISPs. This must be avoided.

CFH must mandate that there be a light-weight option for access seekers with low transaction volumes.

Similarly, we believe that 1 Gbps NNI access must be available to smaller players; CFH must not mandate 10 Gbps or above NNI in the short-medium term.

Finally, a technical point. We expect the layer-2 networks to be designed and built to provide service-switched rather than mac-switched services. This means that the "big flat VLAN" model currently employed by many existing Layer 2 networks should not be used, except in an E-Tree, model, where traffic flows in defined directions. The "big flat VLAN" model breaks down when MAC tables fill, or there is asymmetric routing and MAC tables entries time out, causing unexpected packet flooding.

E-Tree models will need to be carefully considered for purposes other than multicasting.

The view is that the LFC's will provide "Options" for connectivity and thus provides an alternative to other network operators in the area (Predominantly Telecom/Telstra/FX/Inspire/CCNL etc). A concern is how much is it likely to cost to a have POI to that LFC and will the price be regulated based on the CFH funding of this. In addition, what will the standards be in place for the LFC's? For example, if I were to buy connectivity from one LFC in TGA and one LFC in another part of the country, will the same connection devices be used, same installations standards, same technical and networks standards? Based on the funding, will price be regulated for access also?

There needs to be clear standards in place with B2B interfaces with continuity nationwide. At best, a central registry would be the best approach to ensure the customer impact is minimised when switching and ensuring all services are identified in prequalification before any switching occurs.

Is there going to be a national backhaul provider? How are the LFC's going to integrate together to allow service providers to access multiple LFC's?

If these providers produce layer 2 products and are not allowed to sell direct to end users, what defines a wholesale partner, and what stops them just randomly making large corporates into partners and selling direct?

Be good to ensure there are not insane barriers to entry such as Telecom Wholesales 100k underwrite

Need to make sure that LFCs cannot become retailers in other LFC areas, otherwise we simply have a cartel of lines companies/retailers

For customers to benefit it is essential to see competition in the access layer market so we would expect to see the new fibre network wholesalers to be different from the current wholesalers of access.