Ultra Fast Broadband update

John Greenhough
Chief Technology Officer

CommsDay Summit: 27 July 2011
Topics for today:

• Deployment update
• Rollout schedule
• Retail Service Provider engagement
• Driving productivity for end users
• Building demand
• Summary
**UFB: Driving Productivity**

- World Bank suggests investment in Broadband has high flow-through to nationwide productivity:
  - 10% increase in telecommunications penetration via Broadband:
    - expected to increase economic growth by 1.2% to 1.4%.

- Indirect / induced benefits: 1.71x capex boost into GDP

Source: Studies of US, Germany and UK, Raul Katz, Professor at Columbia Business School

![Graph showing economic growth impact of Broadband investments](http://www.worldbank.org/)

NZ Broadband vs peers: OECD

Broadband subscriptions per 100 inhabitants

NZ mid-field on broadband penetration vs OECD peers, but slightly ahead of Australia

NZ Broadband vs peers: Akamai

NZ well behind leaders on Internet speeds, but also slightly ahead of Australia

Status of deployment and partners

• **Whangarei:**
  - ~40km already deployed
  - Beta trial customers connected in June 2011
  - ~10 schools targeted this year

• **Central North Island:**
  - Hamilton, Tauranga, Wanganui July 2011
  - Service activation: Q4 2011

• **Christchurch:**
  - Deployment expected to commence Q4 2011

• **Auckland, Wellington & other locations:**
  - Initial deployment to commence Q4 2011
UFB deployment underway:

25,000km of fibre:
- ~40km laid so far
- 8 year build to 2019
- Priority users by 2015
- Mixture aerial & underground
- Air-blown fibre flexibility
- Proactive & timely community engagement
- Safety ethos

Images: Northpower
Local deployment planning: example

- Priority users in focus
- Chorus & Enable footprints will convert to UFB
- Deployment plans published as agreed
- Local stakeholder engagement involving RSPs

Frankton / Hamilton Lake area

Hamilton: Te Rapa area

Source: UltraFast Broadband Limited
Entity coverage:

Rapid increase in premise coverage expected – both priority (Business, Schools, Health) and non-priority

Source: CFH
UFB deployment – underground

Underground deployment – preferred deployment for greenfields & areas without poles

Images: Northpower Fibre, Whangarei
UFB deployment – aerial

Aerial deployment – low cost, low visual impact in areas with existing poles

Images: Northpower Fibre, Whangarei
Alternative deployment:
Kelson trial

Images: Mini- & micro-trenching trial; Chorus / Downer NZ / Marais Lucas, Wellington region Feb 2011. Credits: CFH, Chorus
# Re-cap: UFB Product Structure

## Layer 1
**Dark Fibre**
- Point-to-point
- Point-to-multipoint (from 2020)
- Non-building access points

## Layer 2
### Downstream
- From 30Mbps
- From 2.5 Mbit/s CIR

### Upstream
- From 10Mbps
- From 2.5 Mbit/s CIR

## Quality of Service:
- CIR (from 2.5 Mbps)
- EIR

## Ports:
- 1 x Video (RF), 1 x Wi-Fi (optional)
- 4 x Ethernet
- 2 x Phone

## Service Level Agreements:
Availability, repair time, connect time, Layer 2 traffic

## Redundancy / Resilience products

## Wholesale products include:
- 30/10 Mbps
- 100/50 Mbps
- 100/100 Mbps
- 1G/1Gbps
- 10G/10 Gbps
- Entry Level Consumer
- Premium Consumer
- Small to Medium Business
- Big Business
- Enterprise

---

Crown Fibre Holdings

July 2011
## Product and Price: Residential

<table>
<thead>
<tr>
<th></th>
<th>Copper</th>
<th>Fibre</th>
<th>Improvement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>POTS (voice) + ADSL2+</td>
<td>UFB 100/50</td>
<td></td>
</tr>
<tr>
<td>Telephony</td>
<td>1 line</td>
<td>2 lines</td>
<td>+100%</td>
</tr>
<tr>
<td>Committed Data (CIR)</td>
<td>45 Kbps</td>
<td>2,500 Kbps</td>
<td>&gt;60 times</td>
</tr>
<tr>
<td>Upstream Data</td>
<td>850 Kbps</td>
<td>50,000 Kbps</td>
<td>&gt;60 times</td>
</tr>
<tr>
<td>Downstream Data</td>
<td>10-13 Mbps</td>
<td>100 Mbps</td>
<td>10-7 times</td>
</tr>
<tr>
<td>Wholesale Price</td>
<td>~$60</td>
<td>$55</td>
<td></td>
</tr>
</tbody>
</table>

- UFB offers vastly superior product for lower wholesale price
- Retail prices set by Retail Service Providers but will reflect wholesale input costs

Note: Wholesale prices per month ex GST.
How long does it really take?

**Downloads:** (minutes)

- HKBN 1/1 Gbps: 0.6
- UFB 100/50 Mbps: 6.4
- TCL Warp 25/2 Mbps: 25.5
- TNZ ADSL2 13/0.8 Mbps: 48.9

**Uploads:** (hours)

- HKBN 1/1 Gbps: 0.1
- UFB 100/50 Mbps: 1.6
- TCL Warp 25/2 Mbps: 8.4
- TNZ ADSL2 13/0.8 Mbps: 93.4

- 3750 photos
- 1875 songs
- DVD 4.7GB

- Avatar 3D BluRay 1080p HD: 14GB

Note: Example assumes maximum EIR with 10% congestion; UFB 100/50 with 2.5M CIR.

Note: Example assumes each product is at maximum available CIR.

Genuine UFB speeds will greatly improve user experience.
**Product and price: Business**

- UFB offers businesses symmetric services for much less than current prices
- Will enable:
  - cloud computing,
  - improved WAN mgt (particularly WAN tails in smaller towns),
  - IP telephony / unified comms etc.
- Much wider access for Councils, Businesses, Health providers etc.

Note: Wholesale prices per month ex GST.
UFB productivity benefit:

Symmetric UFB products will reduce dependence on local hardware:

- Back up
- Business continuity / disaster recovery
- Extending Remote Working
- Coordination across multiple sites
Retail Service Provider engagement

- **January:** First draft Wholesale Services Agreement (WSA) released
- **April:** Industry workshop chaired by TCF
- **May:** Definitive UFB partnering agreements
- **June:** Further WSA version released
- **July:**
  - Consultation workshops on General Terms chaired by TCF
  - Draft Supporting Documents (Ops Manual, Service Descriptions, pricing detail) released
- **August:** Further consultation on Supporting Documents.
- **Late August:** Target for completion of WSA and v1.0 Supporting Documents

While a “Reference Offer” wholesale agreement is still being agreed, a number of RSPs have already concluded agreements to sell UFB services.
Retail plans emerging:

Example: *Uber Group, Whangarei:*

- Established wireless broadband provider
- Delivering broadband over Northpower fibre since 2010
- New retail plans announced 21\textsuperscript{st} July:
  - 50Mbps symmetric with 150GB data cap: $99 including GST
  - 50Mbps symmetric with 250GB data cap: $199 including GST
  - Offered to both residential and business customers
  - Free local calling
  - 12 month term
  - Available on Northpower UFB
Critical Success Factors for RSPs:

- Provide services “on net” where possible
- Keep contention ratios low
- Make data caps substantial – appropriate for UFB speeds
- Provide a high quality service, as fairly easy to switch
- Support local peering & caching, especially in smaller towns
- Bundle & package ancillary services to be a “one stop shop”
UFB allows RSP to innovate & manage solution

Low contention, “private cloud” offers most likely to succeed
UFB usage: Case Study
UFB productivity benefit:

• Cloud computing
• Higher speed WAN tails
• IP Video Conferencing
• Export-oriented (ERP, sales & marketing)
• Supply chain improvement, cost reduction
• Centralising IT Reducing Cost

CFH / TUANZ survey: 80%+ of surveyed businesses intend to take up UFB within 1 year of availability

Source: CFH / TUANZ, Dec 2010
UFB: Driving Productivity: Auckland/BOP (BERL)

Auckland / BOP report expects economic gains, timely roll-out, adoption and uptake of UFB

Source: BERL, Auckland & Bay of Plenty Councils, July 2011.
Demand side initiatives:

- Identifying and aggregating demand
- Tail substitution – DSL to UFB
- Co-marketing between RSPs & LFCs
- Developing usage case studies
- Exploring concept for mobile UFB Experience Centre
- Researching innovative usage / apps using UFB
- Seeding community hubs
- Building local ICT capability
- Seeking role models & advocates in usage

CFH and UFB deployment partners are building a number of demand side initiatives
Digital leadership in action

**Digital Leadership Forum**: Example of digital leadership initiative

**Purpose**: Brings together local stakeholders on demand & supply side to realise UFB benefits

**Objectives**: To develop & execute a strategy to realise local economic development goals using UFB

**Opportunities for TLAs to**:
- Assist & accelerate deployment
- Communicate UFB
- Map areas of highest demand
- Source local case studies
- Lead by example, as fibre users

Many cities & towns have local initiatives underway to make the most of UFB, RBI and local fibre builds
Community Awareness Workshops:

**Purpose:**
- Education and information sharing
- Demand stimulation
- Focus on both connection and usage - case studies
- Local point of contact for more info

**Audience:**
- Free
- Key influencers by sector. End users.
- Business, health, schools, residential

**Information:**
- Deployment timetable and process
- Local Retail Service Providers
- How to get connected

Image: Experience Centre / Spyglass NZ. Not for re-use
Summary:

- UFB deployment underway & will gain pace
- New open access industry structure
- Simple product structure
- Low Wholesale fibre prices
- RSPs innovating
- Productivity benefits for end users
- Demand building
Questions?

- Thank you
- For further questions, please feel free to email Anna Verboeket: anna.verboeket <AT> crownfibre.govt.nz