

National Broadband Deployment Approach: New Zealand

WIK Conference

***National Strategies for Ultrabroadband Infrastructure
Deployment: Experiences and Challenges***

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Acknowledgement and Disclaimer

- Any views expressed in this presentation are my own, and are not necessarily shared by the New Zealand Commerce Commission.
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- I am solely responsible for the contents.

Introduction

- **AIM:** An overview of broadband in NZ, with particular focus on the Govt initiative to accelerate roll out of Fibre-to-the-Premises (FTTP) Ultra-Fast Broadband (UFB) network (100/50Mbps) to 75% New Zealanders.

- **Structure:**
 - (i) Overview of NZ Market
 - (ii) Developments facilitating Broadband Market from 2004-Present
 - (ii) Recent Performance of NZ Broadband Market
 - (iii) Govt UFB Investment Initiative
 - Objective, Ownership Structure, Financing Arrangements, Services Supplied, Regulatory/Governance Arrangements
 - (iv) Rural Broadband
 - (v) Willingness to Pay?
 - (vi) Private v Public Investment in Broadband
 - (vii) Future Challenges

1. Overview of NZ Market

- **New Zealand. Key Statistics:**

- Population approx 4.3 million

- 2008/09 Telecommunications Industry revenue over \$6bn (€3.19bn), Investment \$1.69bn (€ 0.9bn) Telecom New Zealand invested \$1.21bn (€0.64bn)

- Fixed Line Market

- 1.87 million fixed lines, \$2.82bn (€1.50bn) revenues in 2008/09

- Telecom New Zealand nationwide fixed line network , 76% revenues 2008/09

- TelstraClear competing cable access network Wellington and Christchurch

- Five smaller fixed line operators (including Vodafone) with core networks

- Mobile Market

- 4.7 million mobile connections, \$1.92bn (€1bn) mobile retail revenue in 2008/2009

- Until recently Telecom CDMA network vs Vodafone GSM network

- 2009, Telecom launched 3G GSM network & new entrant 2degrees

- Summary

- NZ small country with limited intermodal competition.

- Only in 2009 that 3 MNOs compete using same technology

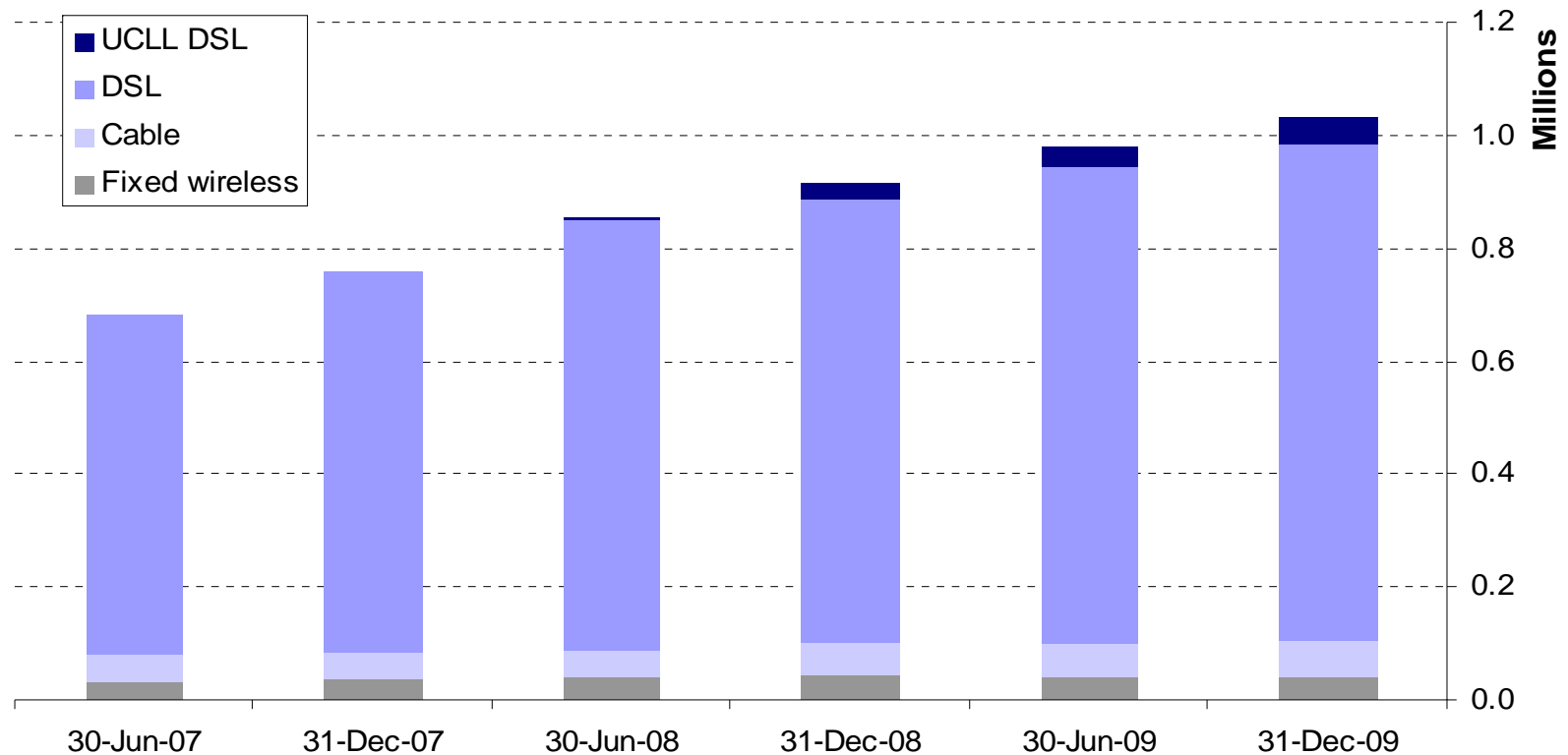
2. Developments Facilitating Broadband in NZ

2009	Sub Loop decision	Govt proposed FTTP network & Regional Broadband Initiative
2008	Operational Separation Undertakings agreed between Telecom and Government 31 March 2008: <ul style="list-style-type: none"> ➤ FTTN build, 10-20 Mbps to 80% of New Zealanders by Dec 2011. ➤ 3,600 new cabinets & 2,500 km of new fibre. ➤ Total Investment of NZ\$1.4bn (€0.74bn) by Chorus. 	
2007	Unbundled local loop & Bitstream service decision	
2006	Telecommunications Act reform	Commission regulatory powers enhanced. Key features: <ul style="list-style-type: none"> ➤ Telecom operationally separated 3 units –Access (Chorus), Wholesale & Retail ➤ introduction of unbundled copper & sub loop regulation; ➤ removal of speed constraint on bitstream service; ➤ backhaul services regulation.
2005	NZ slipped behind OECD peers in broadband. Telecom not met wholesale targets.	Govt stocktake of sector
2004	Minister accepted Commission recommendation not to unbundle local loop. Telecom agreed to achieve wholesale targets. Bitstream service regulated with capped upstream speed 128 kbps.	
2001	Telecommunications Act 2001	

3. Snapshot of NZ Broadband Market

Impact of Regulatory Developments on Broadband

- March 2008, competitors supplying unbundled local loop-based DSL services.
- Improved OECD ranking:
 - Dec 2006, broadband ranking 22nd.
 - Dec 2008, broadband ranking 18th.
- Increased fixed broadband services, 684,500 in June 2007 to 1.03m by December 2009

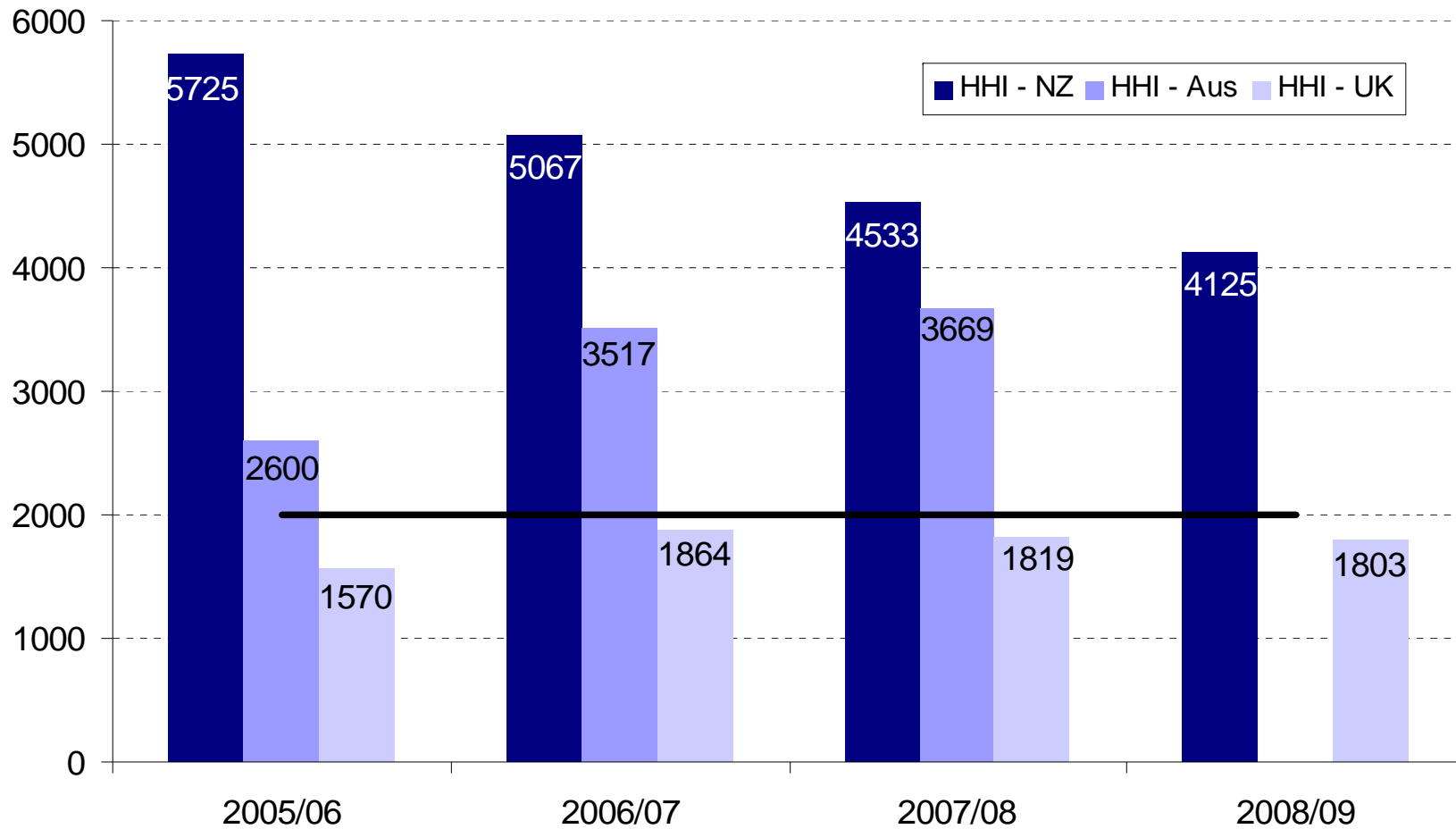


3. Snapshot of NZ Broadband Market

Copper	Cable	Mobile Wireless	Fibre
<ul style="list-style-type: none"> • 76 Exchanges Unbundled • 55,000 of 1.32m (4%) urban lines unbundled • December 2009, Chorus 1426 new cabinets connect to 268,000 customers, with average speeds 13Mbps 	<p>TelstraClear announced July 2009 a \$10m upgrade of HFC network to DOCSIS 3.0.</p>	<ul style="list-style-type: none"> • Investment in HSPA wireless technologies: <ul style="list-style-type: none"> ➤ Vodafone 2006 ➤ Telecom 2009 • Wireless broadband market in NZ still in infancy compared with Australia. 	<ul style="list-style-type: none"> • Existing access and backhaul fibre investors. • Local councils (Christchurch City Council), entrepreneurs (InspireNet, FX Networks) and utility providers (Vector, Northpower, Unison)

3. Snapshot of NZ Broadband Market

HH Index for Fixed-Line Broadband Services



4. Ultra Fast Broadband (UFB) in NZ

Objective

To accelerate roll-out of UFB (i.e. 100Mbps/50mbps) to 75% New Zealanders over 10 years concentrating in the first 6 years priority to business, schools, health services plus greenfield developments and certain tranches of residential areas

UFB Funding Plan

- Nov 2008, National Government elected – election promise to build a UFB network.
- March 2009, NZ Govt Broadband Investment Initiative announced. (See www.med.govt.nz)
- UFB critical for growth of NZ economy. Proposed \$1.5bn (€0.79bn) Govt funding.
- Estimated cost UFB network NZ\$3-6bn (€1.58-3.16bn).
- Expectation funding matched by private sector investor/s chosen through tenders.

UFB Principles

- Making significant contribution to growth
- Not crowding out private sector investment
- Avoid entrenching or lining pockets existing suppliers
- Avoid excessive duplication
- Focus on new infrastructure investment vs preservation of legacy assets
- Ensuring affordable broadband

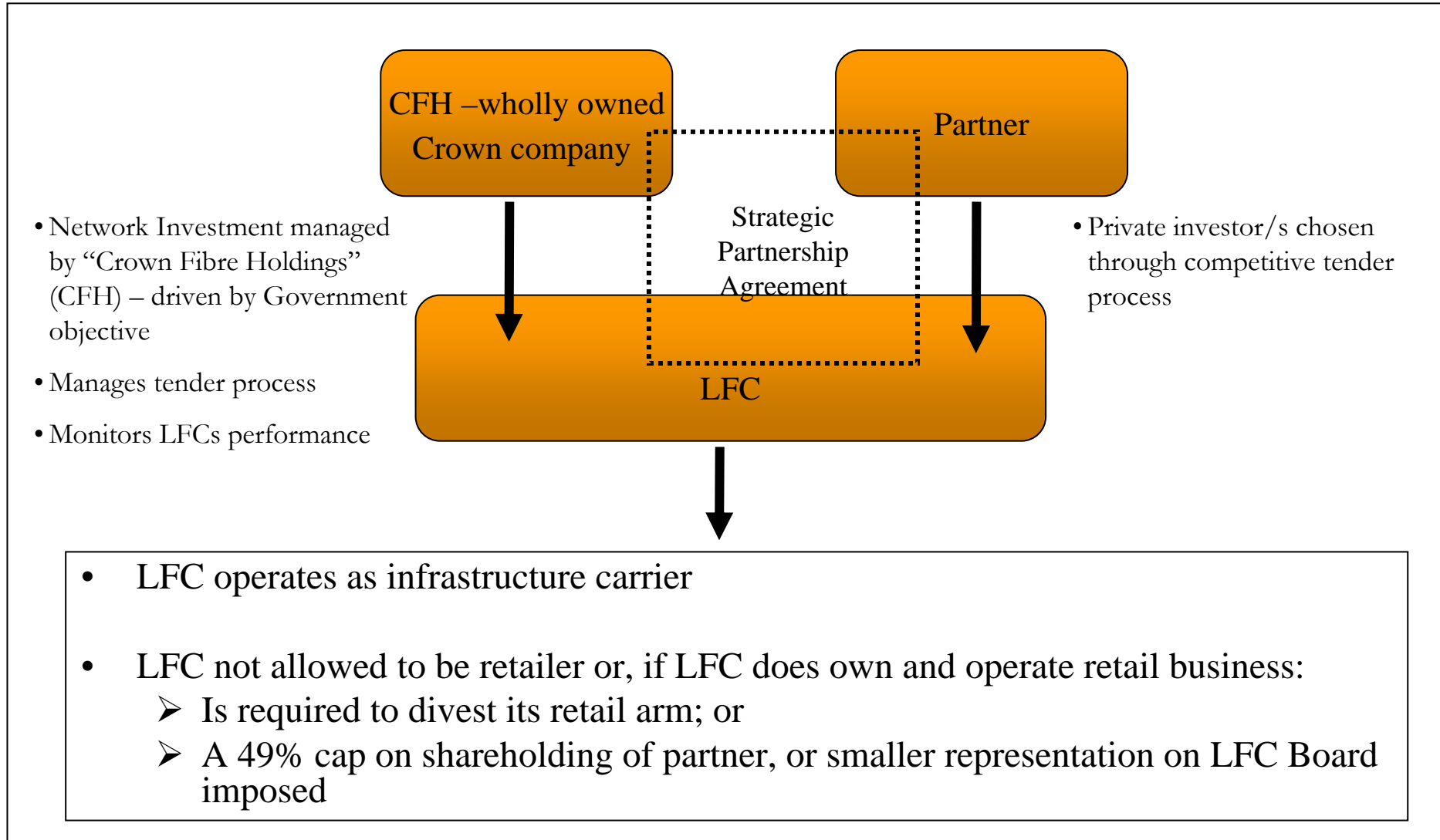
Acknowledged tension between principles – most controversial avoiding access duplication.

4. UFB in NZ - Outstanding Issues

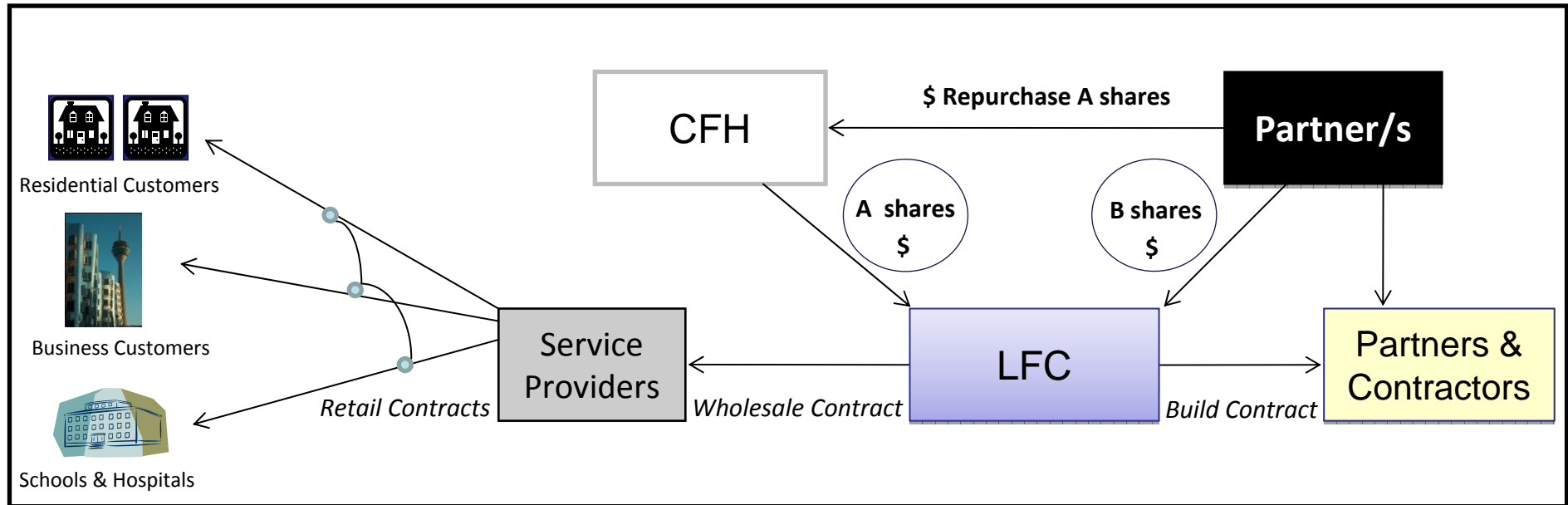
Other issues:

- **Demand Initiative** – government to encourage public sector, particularly health and education, to use fibre network
 - **Complementary Measures** – facilitating access to poles and passive infrastructure such as ducts to build UFB
 - **Rural Broadband Initiative** – deals with remaining population
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- Demand-side analysis, in terms of consumer willingness to pay for UFB services, not addressed.

4. Ownership Structure of UFB Investment

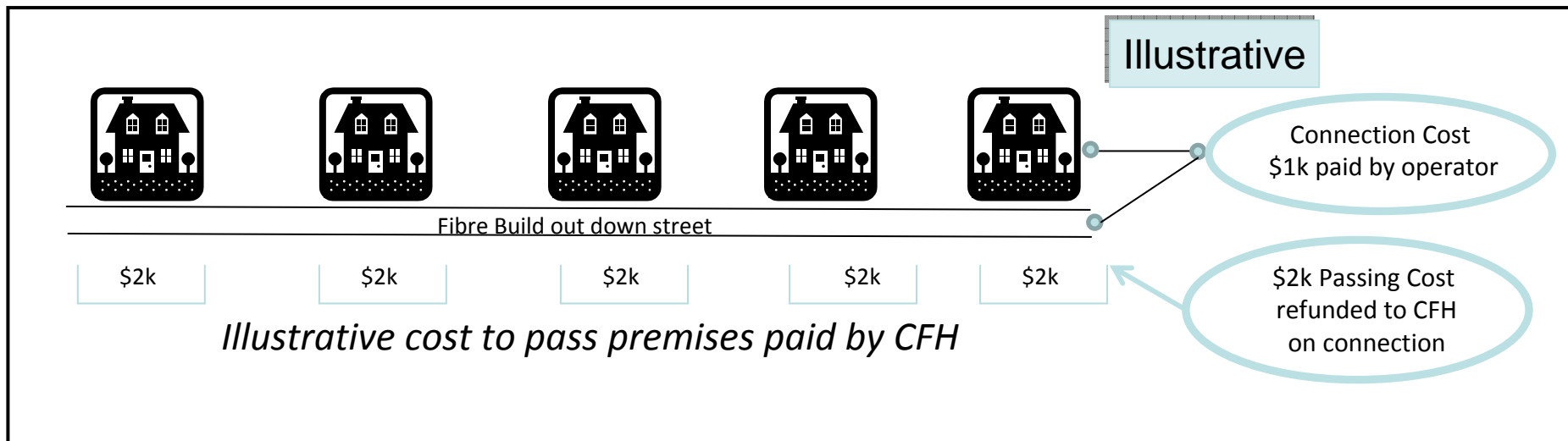


4. Funding & Control of UFB Investment



- Government, CFH, Partner shareholders in LFC
- Funding Model - **10 year concession period:**
 - CFH funds “communal” infrastructure: issued **A** voting shares, no dividends
 - Partner - funds connection to end user costs: issued **B** non-voting 100% distribution shares. Partner receives **A** shares when refunding CFH for “passing” costs on an end user basis
 - Government Share, no voting rights or dividends, but has veto power
- After Year 10 – A and B shares converted to ordinary shares. Government Share does not convert.

4. Funding and Control of UFB Investment (2)



- **Traditional Model, Private Operator faces all Penetration risk**
 - \$10k passing and \$1k connection to be funded (\$11k) funded by one customer
- **UFB model, Operator only has passing cost on connection of end user**
 - \$2k passing costs and \$1k connection (\$3k) funded by one customer
 - Home Fibre Access Price can be lower

4. Services Supplied by UFB Network

Supply of Services:

- Open access wholesale-only business model.
- Mandated supply of Layer 1 dark fibre.
- In contrast to Australia, optional supply of Layer 2 service. Layer 2 service expected to be similar to Ofcom's "ALA" service.
- Aim to incentivise partners to co-invest in Layer 2 bitstream services with LFC (not part of Govt funding)

4. Regulatory/Governance Regime for UFB

No Explicit Regulation

- Consumer interest protected by Govt's Share which entrenches Open Access obligations
- Limited concern about anti-competitive behaviour LFC
- Telecommunications and Commerce Act still applies
- Proposal for Commission to Monitor and Enforce Open Access Obligations

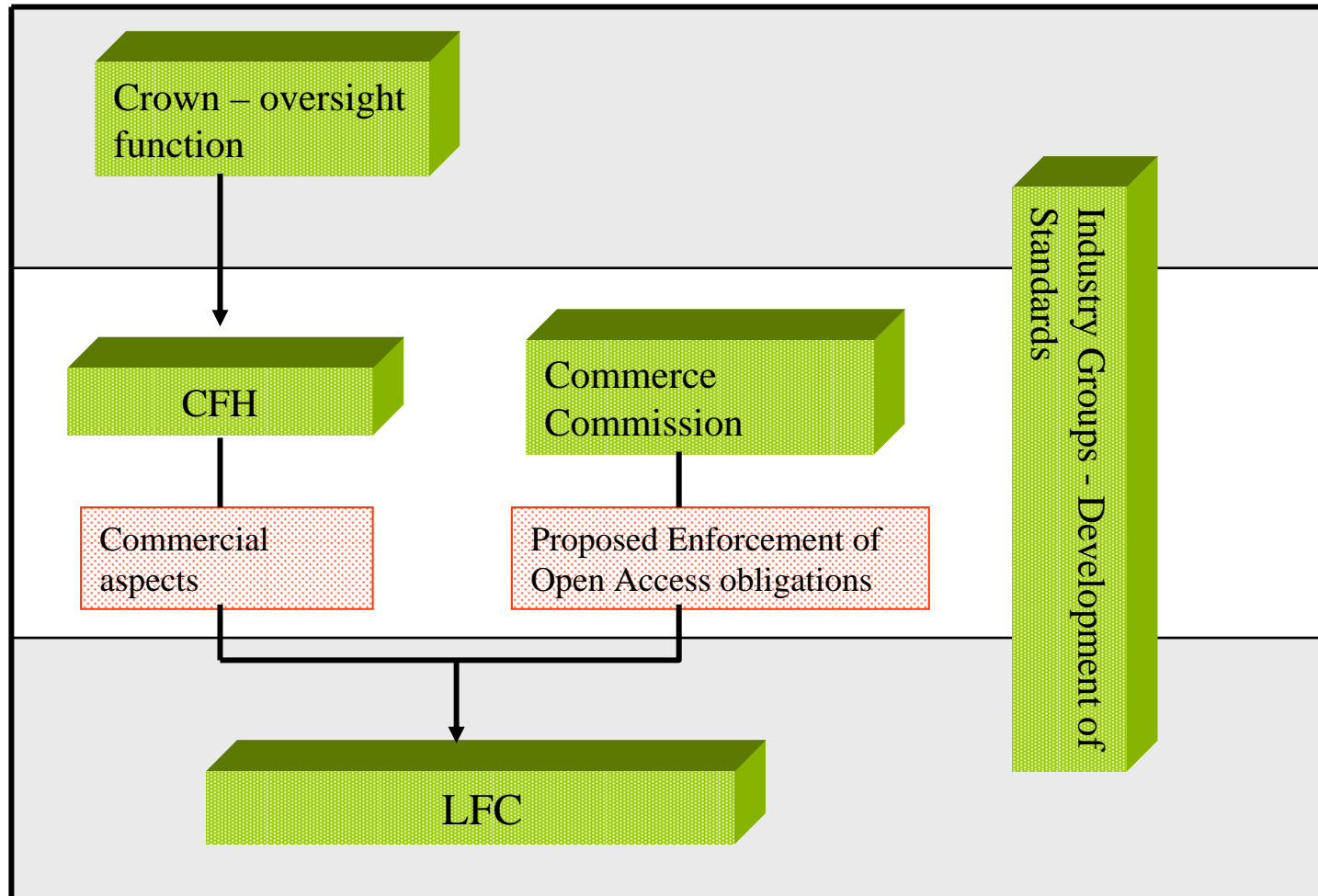
Deed of Undertakings

- Behavioural undertakings proposed, established by Deed of Undertaking between LFC and Government.
- Upfront rules to provide certainty to investors. Key aspects:
 - LFC must operate consistently with open access guiding principles:
 - Any-to-any connectivity
 - Any network technology
 - Low cost to change providers
 - Equality of access
 - LFC must abide by the equivalence and non-discrimination requirements

Pricing

Pricing commercially negotiated

4. UFB - Overall Governance Structure



4. UFB - Partner Selection Process

- ITP Formal invitation to participate closed 29 January 2010.
- 33 proposals received from 18 parties and consortia:
 - Telecom NZ
 - Axia Net Media – International Fibre Operator
 - Regional Fibre Group – 18 community-owned fibre companies' (Includes electricity lines businesses e.g. Vector, Unison)
- 14 electricity lines companies submitted bids
- 2 nationwide responses
- Due diligence and evaluation target date 30 June 2010
- Negotiation to final agreement target date 30 Sept 2010

5. Regional Broadband Initiative (RBI)

RBI objectives

- improve coverage of fast broadband so 97% of NZ households and enterprises can access broadband services of 5 Mbps or better, and the remaining 3% at least 1 Mbps
- connect 97% of schools to fibre at speeds of at least 100 Mbps, with the remaining 3% at speeds of 10 Mbps

- Complements UFB Initiative. Targets remaining 25% of New Zealanders.
- Grant rather than co-investment model. Approx NZ\$300m (€160m) in grants over 6 years
- Competitive tender process – Expressions of Interests then Requests for Proposals – based on 19 regions
- Bidders must meet minimum requirements, building open access infrastructure that facilitates broadband service via a variety of access technologies

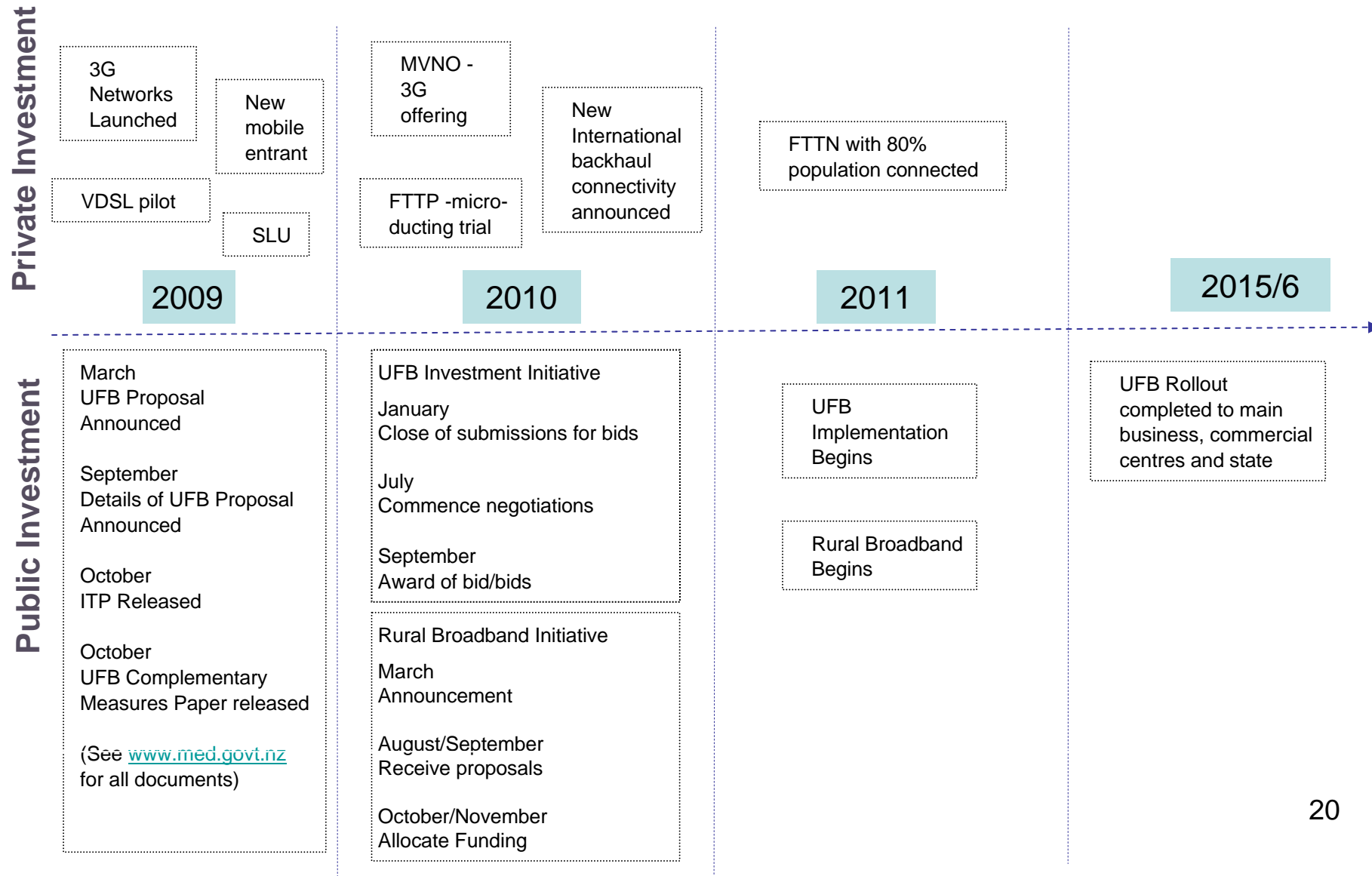
6. Willingness to Pay for UFB Fibre-Based Services?

- How much are NZ consumers willing to pay for UFB FTTP services?
- 25% Non-Telecom DSL customers (40% market) on 256/128kbps.
- TelstraClear Cable Service 25/2Mbps (120GB cap) \$230/mth (€121) & Triple Play \$300/mth (€157).
- InSpireNet provide retail consumer broadband with fibre (<http://www.inspire.net.nz>) and wholesale bitstream access in New Zealand.

MetroLan Fibre-Based Service 100Mbit/s	
Cap	Price
10GB	\$135/mth (€71)
20GB	\$155/mth (€81)
50GB	\$195/mth (€102)
100GB	\$270/mth (€142)
200GB	\$345/mth (€181)

Bitstream FS-FS (7.6Mbps)		Bitstream 256/128kbps	
Cap	Price	Cap	Price
5GB	\$67.50/mth (€35.50)	1GB	\$32.50/mth (€17.30)
20GB	\$72.50/mth (€40.50)	5GB	\$37.50/mth (€19.95)
50GB	\$127.50/mth (€67)	10 GB	\$47.50/mth (€25.20)
100GB	\$202.50/mth (€107)		

7. Private & Public Broadband Investment Timelines



8. Looking Ahead: Some of the Challenges

- The ITP Process
 - Nationwide Supplier or Multiple Suppliers?
 - Telecom's response – Structural Separation?
 - Will a utility company be the new access network supplier? (see <http://www.fibretothedoort.co.nz/>)
- FTTP interaction with existing Copper/FTTN, Mobile, and Cable access networks?
 - Inefficient Duplication? Crowding out private sector investment?
 - Asymmetric Regulation – Enforceable Undertakings FTTP vs More Prescriptive Existing Regulations; Telecom's Operational Separation Undertakings?
 - Pricing?
 - Traffic Migration?
 - Will more prescriptive regulation eventually be required?
- Compatibility of regulated bitstream and fibre bitstream services? Interconnection issues?
- Willingness to pay for fibre-based services?
- Unlocking other parts of the value chain
 - Could content barriers limit IPTV and demand for fibre-based solutions?

NZ last to unbundle amongst OECD countries, but one of the first to implement a nationwide fibre rollout? Watch this space!