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2 December 2014

STOCK EXCHANGE ANNOUNCEMENT

Chorus releases update of its FPP modelling data

Chorus has today provided an update on its work with world leading experts Analysys Mason to develop economic models that can be used to inform the Commerce Commission's Final Pricing Principle (FPP) processes.

This information updates the market on the previous presentation given on 7 October 2014.

Analysys Mason is a global telecommunications consultancy, and has assisted regulators in undertaking similar work for networks in Australia, Norway, Denmark, France and the Netherlands.

The modelling from Analysys Mason was submitted by Chorus to the Commerce Commission on 1 December 2014, in line with the Commission's published timetable.

"While the FPP exercise is a hypothetical exercise of considering the cost of a network provider replacing Chorus and building a network today, we have real world data about building a network today," said Mark Ratcliffe, CEO Chorus.

Chorus has drawn upon extensive data from its work over the last three years to deploy the UFB fibre network to about 400,000 urban end-users across 24 centres nationwide and connect more than 40,000 end-users.

This data has been complemented by Chorus' experience deploying more than 3,000 kilometres of fibre to bring better broadband to more than 75,000 rural end-users for the Rural Broadband Initiative.

"The nature of our business means that Chorus is well placed to provide real world, credible, New Zealand-based cost information and we believe it is valuable to provide this data into the FPP process.

"We have consistently said that once the NZ reality has been taken into account, that we do not expect the FPP to result in prices lower than the pre-benchmarking level of around $45, and we are providing our own model to the Commission as evidence to support this."

"We also note that in the real world market, pricing would of course be constrained by market realities including the need for Chorus to compete with other access networks

and technologies.

Chorus has made, and continues to make, extensive submissions on ongoing consultation documents from the Commission which can be found on the Commission's website.

A presentation summarising Chorus' models is attached as an update to the 7 October 2014 presentation.

At the Commerce Commission's request, Analysys Mason will provide a briefing at 10am on Thursday 4 December on its total service long run incremental cost (TSLRIC) UCLL and UBA models. The briefing will be webcast at www.chorus.co.nz/webcast.

ENDS

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Chorus network modelling

2 December 2014

Overview

> As requested by the Commerce Commission, Chorus submitted its TSLRIC models into the final pricing review processes for the copper local loop (UCLL / SLU) and broadband access (UBA) services:

- the models submitted to the Commission are an evolution of the versions explained to investors on 7 October 2014. Work has been done to identify more granular real world data on build costs and financial cost allocation. Chorus will continue to evolve these models and its views to inform the submission and conference process.
- the models were developed by Analysys Mason using Chorus' detailed nationwide network build information and expertise, including actual cost data from year 3 and 4 of Chorus' UFB and RBI rollouts, and taking into account preliminary views from the Commerce Commission (including some that Chorus does not agree with and will remain matters of submission).
- Analysys Mason has conducted similar modelling for regulators in countries such as Australia, Denmark, Norway, France and the Netherlands.
- Analysys Mason will provide a high level overview of the models on 4 December, however there is a separate process for detailed submissions on the models.

Analysys Mason UCLL/SLU model

The hybrid UCLL model estimates the cost of efficiently building a copper network in New Zealand today to deliver the regulated UCLL, SLU and UCLFS services, using an optimised replacement cost approach and assuming no re-use of assets. The model uses Chorus' actual asset count, with an optimisation adjustment

Analysys Mason UBA model

The UBA model estimates the cost of delivering the UBA service on Chorus' existing copper network. It estimates the cost of the electronics on a bottom-up basis, but uses Chorus' actual asset counts for civil works

The models submitted by Chorus continue to show…

The attractive entry-level UFB fibre pricing ($37.50 per month increasing to $42.50 by mid 2019) **does not** reflect the true cost of building a nationwide network.

70-80% of the costs are in the civils. Key parameters and data will generally be the same for a fibre modelling approach.

Rebalancing is required between Layer 1 (UCLL) and Layer 2 (UBA) pricing.

SLU pricing is similar to UCLL. UCLFS pricing should be higher than UCLL.

A nationwide network valuation of $16 billion

Recap on Commission preliminary views and Analysys Mason models

Consistent with the Commission's preliminary views, the Analysys Mason models assume:

- optimised replacement cost
- scorched node
- no re-use of assets

Key parameters: updated today for each model (see page 6). Data inputs for parameters are generally the same irrespective of whether a hybrid or bottom-up model is used

Analysys Mason UCLL/SLU model

Service: modelled FTTN copper. This differs from the Commission's preliminary view of FTTH and/or fixed wireless as it would not deliver the regulated services, including cabinetised SLU services, so additional overlays/complexity would be required.

Modern equivalent asset: Modelled copper MEA. As a hybrid model, it uses Chorus' actual asset counts as a starting point for a hypothetical network build. Optimisation and other miscellaneous adjustments have been made to make it a proxy for a bottom-up model. Commission's preliminary view is FTTH plus fixed wireless.

Analysys Mason UBA model

Service: Modelled UBA service provided today (based on anticipated throughput in April 2015). Chorus has taken this approach in absence of Commission guidance on specification of UBA service.

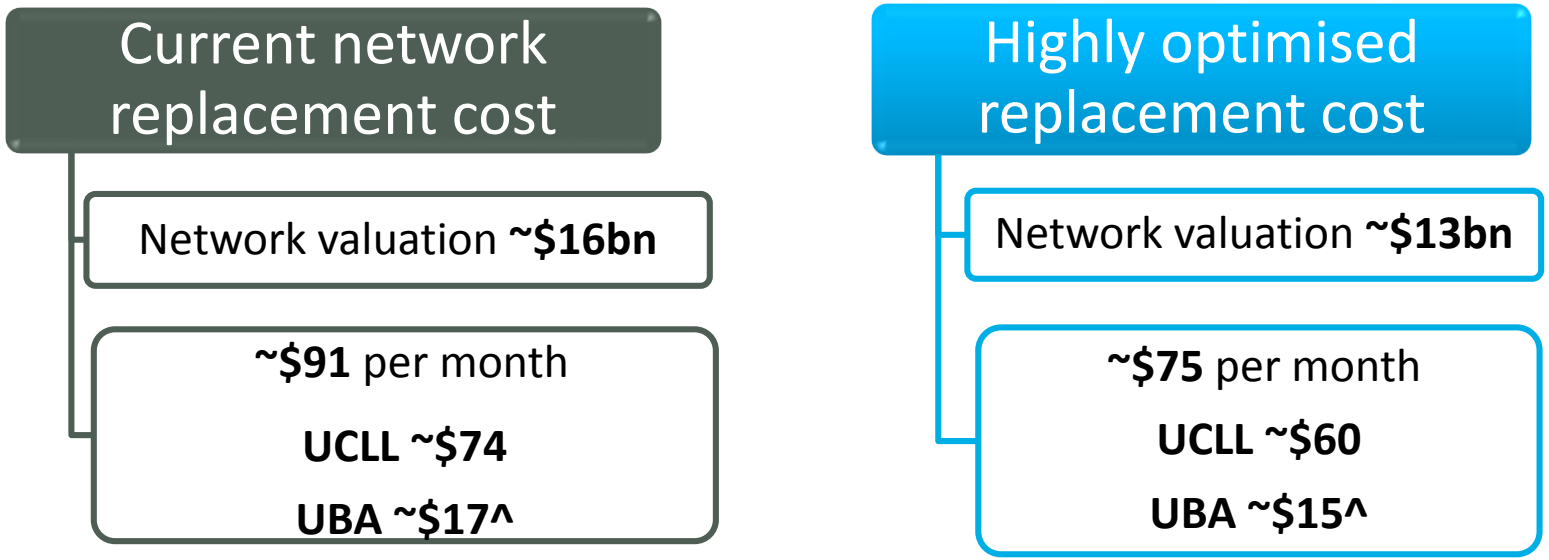
Modern equivalent asset: Model assumes UBA is built using existing UCLL and SLU services (i.e. is based on Chorus' copper based inputs). Consistent with the Commission's preliminary view.

See page 5 for price/valuation outcomes.

Note: SLU prices are slightly higher than UCLL. UCLFS price higher than UCLL.

Analysys Mason TSLRIC model outputs

- The models produce a view on what it would cost a hypothetical network entrant (HNE) to build a network to deliver the regulated UBA and UCLL and SLU services. We have also run a second scenario with higher optimisation (20%) and an additional downside adjustment:
  - **Current network replacement cost**: replacement cost of the existing copper-based UCLL and UBA network with some optimisation of network assets assumed
  - **Highly optimised replacement cost**: replacement cost of the existing copper-based UCLL and UBA network with high degrees of potential adjustment reflected for optimisation and sharing



- The UCLL model produces a SLU price that is slightly higher than the UCLL price, and a UCLFS price that is higher than both the UCLL and SLU prices
- Chorus is competing with other fixed line and mobile networks and would take that into account if final FPP pricing was materially above aggregate UBA+UCLL pricing at demerger (i.e. $45.92).

Note: Amounts above are not necessarily additive due to rounding
^ UBA pricing shown assumes *Boost* is available and that cost allocated to UBA is reduced accordingly

Parameter	Current network replacement cost assumptions	Highly optimised replacement cost assumptions	Comment
Optimisation	10%	20%	Chorus' hybrid model uses Chorus' existing asset count as a starting point. In a bottom-up model, an algorithm is used to determine optimised network routes. This adjustment makes the hybrid model a proxy for a bottom-up model.
Misc adjustment	0%	10%	Miscellaneous other downward adjustments in other assumption(s).
Sharing	5%	10%	Estimated 5% of Chorus distribution network is shared with other utilities in the UCLL model (and 2% in the UBA model). The same sharing constraints (e.g. duct access, access conditions, council constraints) that Chorus faces with UFB/RBI rollout would apply to an HNE.
Aerial deployment	20%		2% of Chorus actual communal network is aerial (excluding drops). Target of 20% for UFB assumed nationally. The same constraints that Chorus faces (e.g. access to poles, pole conditions, council constraints) with UFB/RBI rollout would apply to an HNE. Any increase in aerial assumption implies an increase in opex, which has not been factored into Chorus' opex assumptions in the model at this stage.
Cost allocation methodology	Connections-based for trenching costs sharing between copper and UFB, capacity-based for some network elements. Cost-driver based allocation or equi-proportionate mark up for non-network costs.		Simple and transparent allocation method, and consistent with indicative Commission views. Chorus has used expert knowledge of direct and causal cost drivers to allocate network and non-network costs into granular cost categories.
Depreciation	Demand adjusted tilted annuity.		Conventional technique for price smoothing and recovery of efficient costs over time.
Opex	Chorus opex with appropriate allocation to UCLL and UBA with some adjustments for optimisation purposes.		In Denmark, the incumbent's opex costs were used as the starting point. Some optimisation has been applied (e.g. actual property space & electricity requirements for an MEA).
Demand	Chorus copper demand – flat. Chorus UBA penetration and throughput – forecast.		Conventional TSLRIC approach to use incumbent demand. The Commission's assumption of flat demand has been adopted for copper subscribers. However, Chorus' view is that demand should take account of actual network demand (e.g. recognise migration to other LFC and mobile networks).
UBA throughput	300 kbps average.		Average throughput per user on Chorus network anticipated for April (when FPP scheduled to complete). Increased from 230kbps which was August actual usage.
WACC	8.1% (post-tax nominal).		Consistent with Chorus' current WACC; analyst views and other local fibre companies higher.

Build parameters based on detailed network & cost information

- The network build parameters in the models are based on Chorus' detailed network build information and expertise, and recent cost information. This includes:
  - ensuring regional variability is accounted for by analysing conditions that drive cost in each of the ~700 exchange areas (e.g. soil conditions, density, traffic conditions) and extrapolating from actual Year 3 and 4 UFB and RBI cost data to comparable exchange areas (Auckland and Wellington cost information was ring-fenced as these high cost areas were not comparable to other areas)
  - based on the network build information, the models assume that 80% of underground deployment is drilled (generally the cheapest option, as reinstatement is not required)
  - taking Chorus' actual UFB aerial cost information from Dunedin, Greymouth and Levin and extrapolating this to 20% aerial deployment target
  - including Chorus' contracted future UFB lead-in costs (excluding the cost of the ONT and ONT installation). This includes lead-in development costs, reinstatement costs, right of way compliance costs and MDU backbone costs
- The build parameters (and other parameters) in Chorus' hybrid models are relevant whether you are building a copper or fibre model. A small number of adjustments would be required in a fibre model, such as:
  - Adding back in the cost of the ONT and ONT installation
  - Assuming narrower trenches for fibre close to the exchange
- We would expect these adjustments to broadly balance out and for a fibre model to produce outputs in the same ballpark as copper.

Network valuation sense checks

Chorus FPP analysis

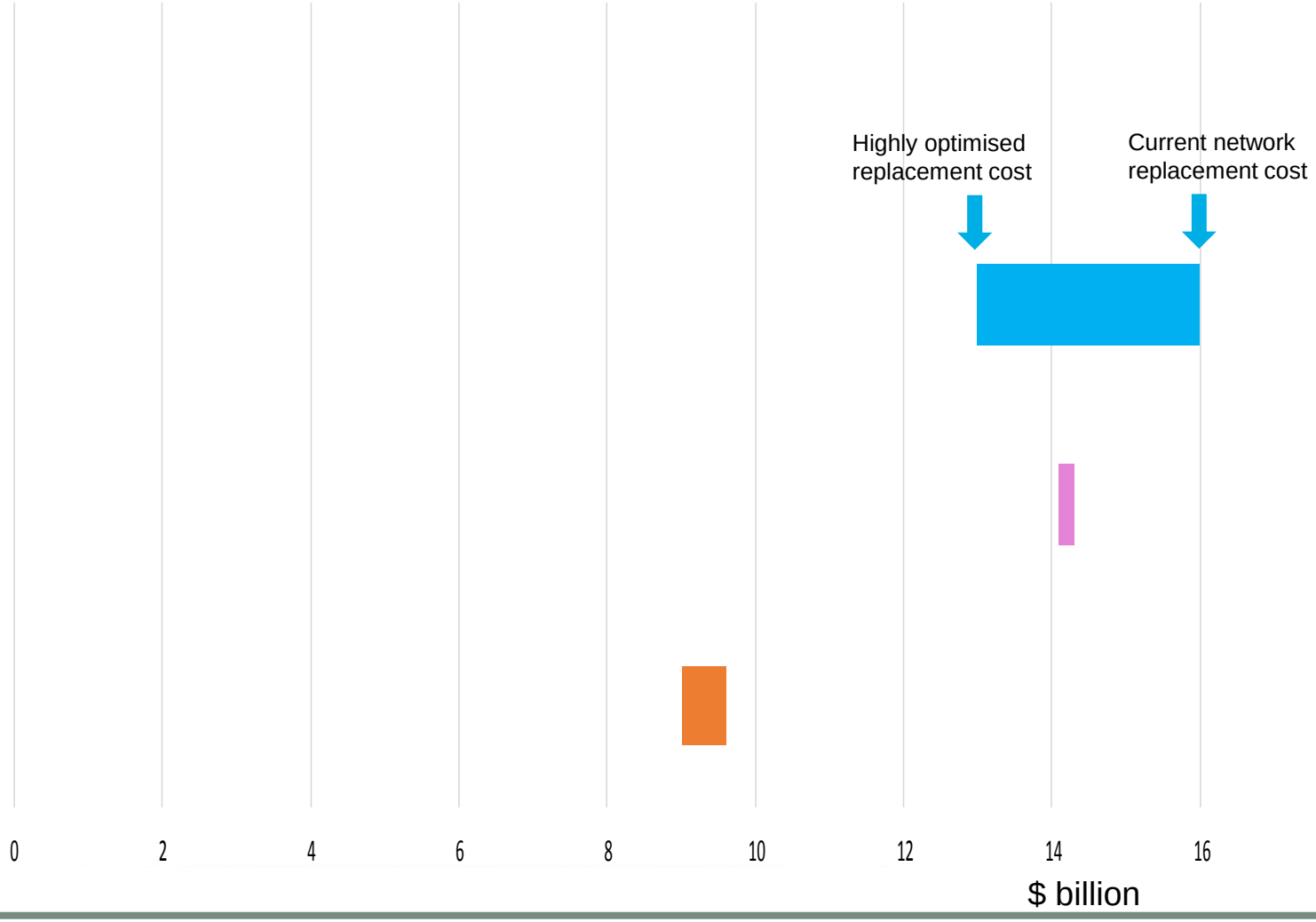
- Replacement cost for UCLL + UBA assets only
- Range shows valuation from Highly optimised replacement cost analysis to Current network replacement cost analysis

Telecom 2010 op sep valuation

- 2010 op sep accounting replacement cost valuation for access services group – did not include UBA electronics
- pre-dated FTTN/RBI and trenching cost increases

Lines companies

- Use a depreciated value (ODV/DORC) so optimised replacement cost value would be higher
- Excludes equivalent of Chorus Layer 2 assets and Transpower assets
- Commission info disclosure data indicates $8.98b RAB in 2011 increased to ~$9.6b in 2013



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