



Copper pricing & fibre transition

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The starting point



- **Continue with neutrality, competition & choice re Digital Agenda**

“We... need an intelligent mix of complementary technologies, deployed incrementally, and according to local circumstances.”

“...we are seeing technological advances which make some existing infrastructures a much more promising and cost-effective part of the overall broadband mix.” Neelie Kroes, 27 February 2012

- **Copper pricing – replacement cost applied by most regulators**

- European Commission - use CCA/LRIC approach
- BEREC observe that replacement cost is predominant method and could send better investment signals

- **Plum analysis concluded status quo costing principles are sound**

March 2011. “Costing methodologies and the transition to next generation access.”

www.plumconsulting.co.uk/pdfs/Plum_Costing_methodology_and_the_transition_to_next_generation_access_March_2011_Final.pdf

Impact of copper price reduction on investment?



Entrant/platform competitor

- Cu price↓ => NGA price↓ => entrant/platform competitor investment↓

Incumbent without platform competition

- Cu price↓ (or ↑) => Δ Revenue unchanged => investment neutral

Incumbent with platform competition (incl. wireless)

- Cu price↓ => Gain from retaining customer↓ => NGA investment↓

Lower copper price harmful/neutral, must also consider investor perspective...

Equity investor perspective



- **Trends, cash flow and health of balance sheet matter**
- **Lowering price of copper would**
 - Undermine regulatory credibility – what will happen with fibre?
 - Reduce free cash flow – lower discretionary investment to maintain return
 - Increase debt/EBITDA ratio – potentially raising cost of capital
- **What about other potential investors/business models?**
 - May be seeking level of certainty inconsistent with competition and choice which characterises the telecommunications market

Long-term investment requires credibility, not policy reversal to reduce prices

Quantitative analysis?

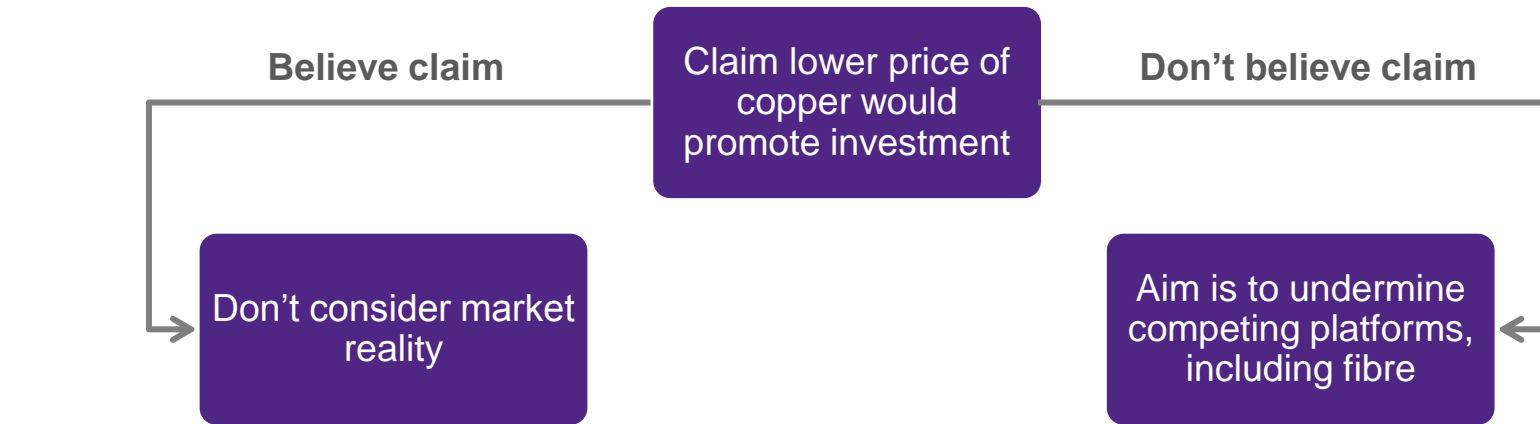


- **Reinforces qualitative conclusion**

- With platform competition - lower price reduces investment
- With investor expectations - higher WACC reduces investment

Plum. December 2011. "Copper pricing and fibre transition – escaping a cul-de-sac."
http://www.plumconsulting.co.uk/pdfs/Plum_Dec2011_Copper_pricing_and_the_fibre_transition_-_escaping_a_cul-de-sac.pdf

Why do some reach a different conclusion?



"Analysis" supports belief	Market reality
Assume FTTH only	FTTH, FTTC & other investment all contribute
Assume immediate copper switch off	Sustained parallel running likely to be efficient
Assume fibre demand independent of copper price	Fibre price/demand linkage to copper price
Neglect impact of platform competition	Platform competition investment incentive linked to price
Neglect investor expectations	Investor expectations key for long-lived investment

Source: Plum. February 2012. "The copper transition – a guide for the perplexed."

http://www.plumconsulting.co.uk/pdfs/Plum_Feb2012_The_copper_fibre_transition_-_a_guide_for_the_perplexed.pdf

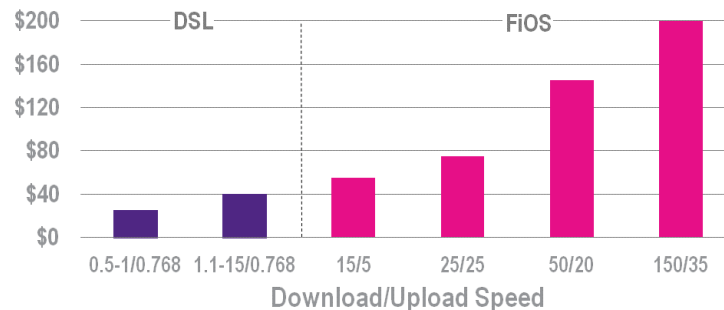


Experience – US, Australia and UK; and policy

US – laissez-faire from 2005



Verizon broadband DSL and FiOS pricing
Monthly charge (USD)



Source: Plum Consulting. Pricing for one-year contract with phone service.

- **Verizon FTTH from 2006**
- **Differentiate price of fibre**
 - Increase overall demand
 - Supports business case
 - Supports digital inclusion
- **No simple copper phase-out**
 - Let lines lie fallow as customers switch
 - Exchange in Texas phased out in late 2011 (50%+ FTTH)
 - Targeted fibre transition for high cost lines from 2012

Price differentiation for fibre, no quick copper switch off

Australia – fibre “cargo cult”?



“Cargo cult”: focus on obtaining the wealth (the “cargo”) of an advanced culture through rituals including mimicking observed behavior

- **Fibre plan announced 2007**
- **NBN Co. created April 2009**
- **Cost A\$35.9b (Federal A\$27.5b) +A\$11b to reduce competition?**
- **No compete, including cable**
 - ACCC over-turned proposed limit on wireless competition
- **Wholesale price differentiation**
- **January 2012 - “NBN hails 4000th customer”**
 - 2315 on fibre; 1700 on satellite

Expensive, slow and anticompetitive; price differentiation sensible

UK – enlightened pragmatism?



- **Ofcom statements March 2009 & October 2010**

- Equivalence of access applies
- Regulated copper “anchor price” limits scope for abuse on fibre
- Virtual Unbundled Local Access(VULA) fibre product
- No price control for fibre

- **Openreach deployment (predominantly FTTC)**

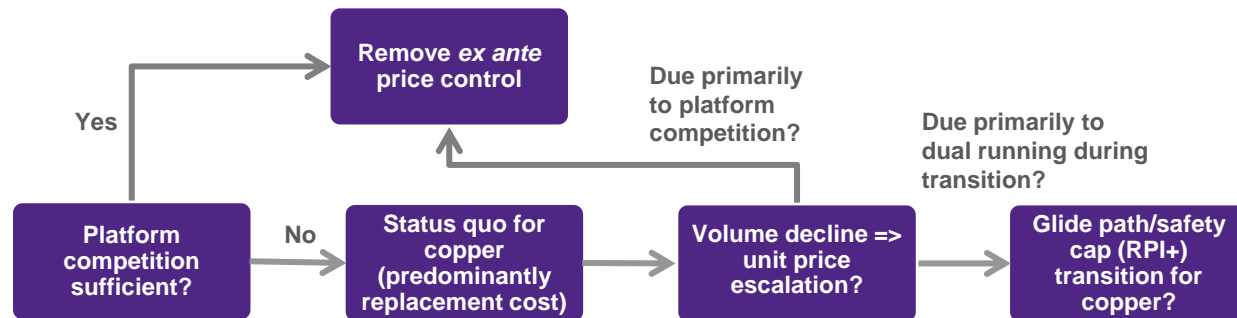
- Trials 2009
- Summer 2010 – 1.5 m homes passed
- Other operators now offering (later to market than BT retail)
- Q3 2011 (Feb 2012 results)
 - 7 m homes passed
 - “Fibre on demand” FTTH extension plan announced
 - >400,000 fibre customers
- Two-thirds coverage by 2014

Rapid commercially driven rollout is possible with the right environment

Way forward – contingent approach



Copper (option but not obligation to retire copper)



Discounted cash flow approach: overarching price control

Current & next generation access are weak substitutes

Fibre

"Anchor" product only: fibre product prices not capped

Current & next generation access sufficiently close substitutes

Open access wherever there is significant market power