

2021 ACCC/AER
**Regulatory
Conference**









Session 1B – Regulating fixed broadband in the presence of infrastructure competition

Chair: Anna Brakey, Commissioner, ACCC

Speakers: David Clarkson, Competition Policy Director, Ofcom
James Mellsop, Managing Director, NERA Economic Consulting
Deena Shiff, Chairperson, Board member and Director

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2021 ACCC/AER Regulatory Conference

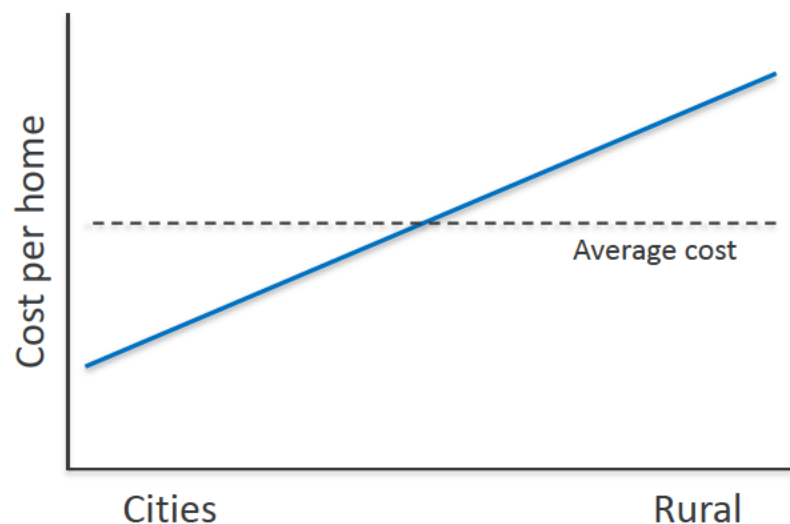
David Clarkson, Competition Policy Director

28 July 2021

Geographic Markets - background

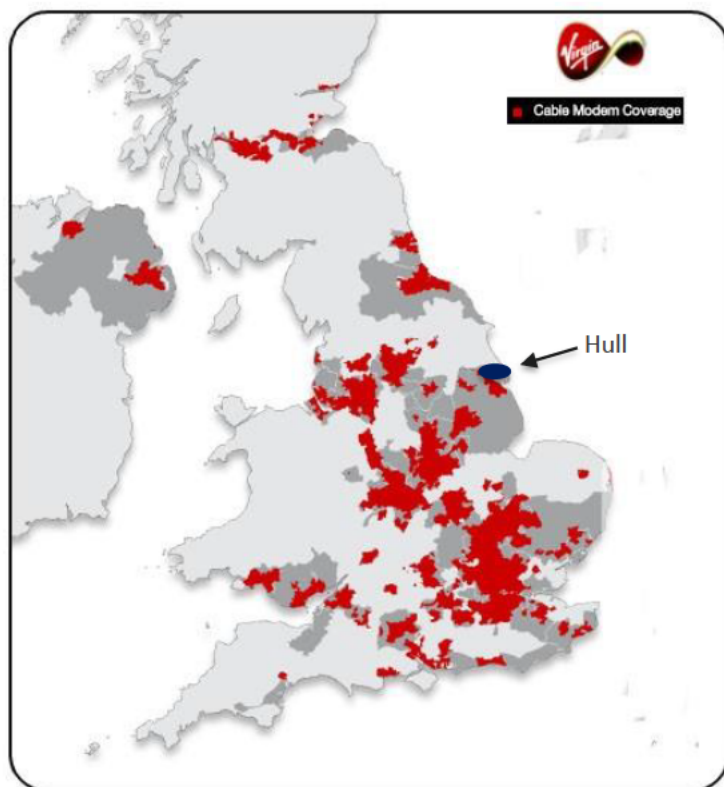
Competition is often local and this may necessitate a different regulatory approach in different areas

- The cost of deploying and operating a fixed broadband network varies by geography
- Competition that is based on the underlying cost often tends to be concentrated in cities
- Local competition can undermine national averaging leading to geographic prices and offers
- In such circumstances, it may be necessary to have a different regulatory approach in different areas



Fixed Networks in the UK

No competitor(s), individually or collectively, provide national competition



- In the UK we have two, previously state owned, incumbents:
 - KCOM, in Hull (c.180k premises)
 - BT, rest of the UK (c.30m premises)
- We also have an established cable network (Virgin) that covers c.50% of UK premises
- In recent years an increasing number of operators have started deploying their own fibre networks:
 - CityFibre, Hyperoptic, GigaClear, Community Fibre, Jurassic, (plus many more!)
- But these networks will not have national coverage, individually or collectively

Geographic Markets – are they needed?

Not just an economic question – in the UK we are using geographic markets to help fibre investment while protecting consumers

- Just because there are geographic differences in costs and competition, this does not necessarily mean that geographic markets/regulation are needed
- In a practical sense, geographic markets/regulation is only needed if a national approach will not achieve your objectives
- In our recent Wholesale Fixed Telecoms Market Review (WFTMR) we concluded that geographic markets/regulation was needed to achieve our objectives of promoting investment in fibre while at the same time providing a certain level of protection to consumers
- We identified two geographic markets, and took a different regulatory approach in each:
 - Areas with the potential for material competition (blue -70%)
 - Areas that are unlikely to see material competition (brown -30%)



Practicalities of Defining Geographic Markets

A number of judgements and approximations need to be made – need to create a practical and workable regulatory environment

- What geographic unit should be used (premises, network topology, political boundaries, postal boundaries, towns, etc)?
 - Individual premises not practical, but any geographic unit bigger than this may require you to think about partial coverage of a unit
 - In the WFTMR we used postcode sectors (approx. 10k units) and a coverage threshold of 50%
- What indicators of competition/potential competition should be used (number of competitors (current/forecast), competitor characteristics, market shares, underlying economics, etc)?
 - In the WFTMR we used actual and forecast coverage of the two largest established competitors
- Need to accept that any boundary will be an approximation, therefore need to consider how to construct approach to mitigate potential unwanted regulatory distortions/problems
 - In WFTMR we sought fibre build commitments from BT in the non-competitive areas and this allowed us to have a very similar regulatory approach across the UK



GEOGRAPHICALLY DIFFERENTIATED REGULATION OF FIXED BROADBAND NETWORKS

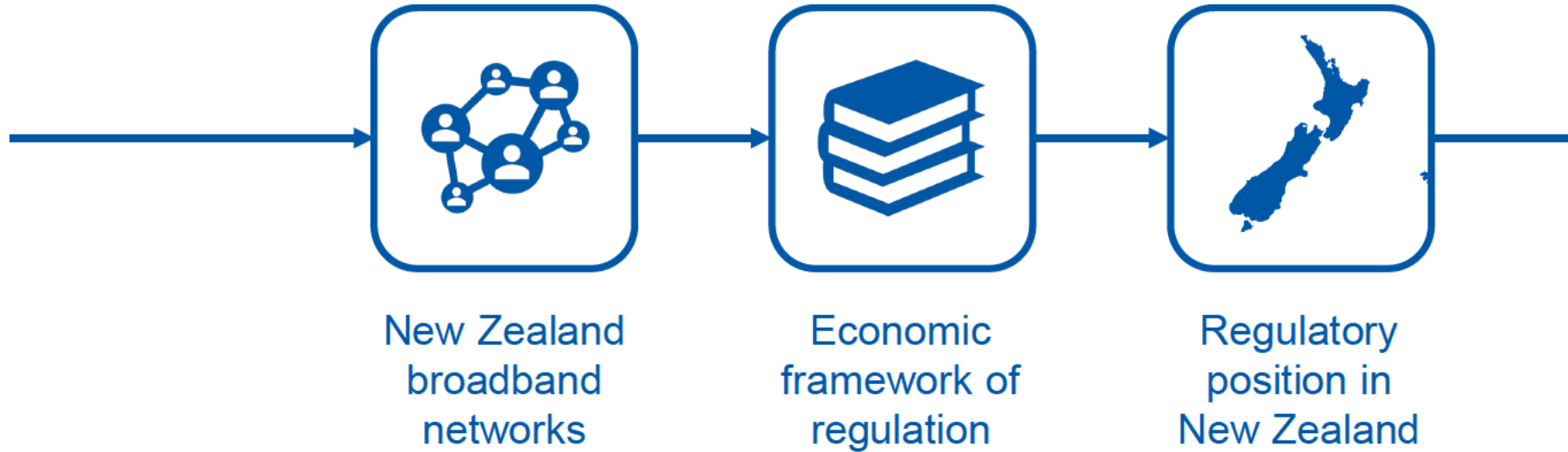
Regulation in New Zealand

28 JULY 2021

James Mellsop

Overview

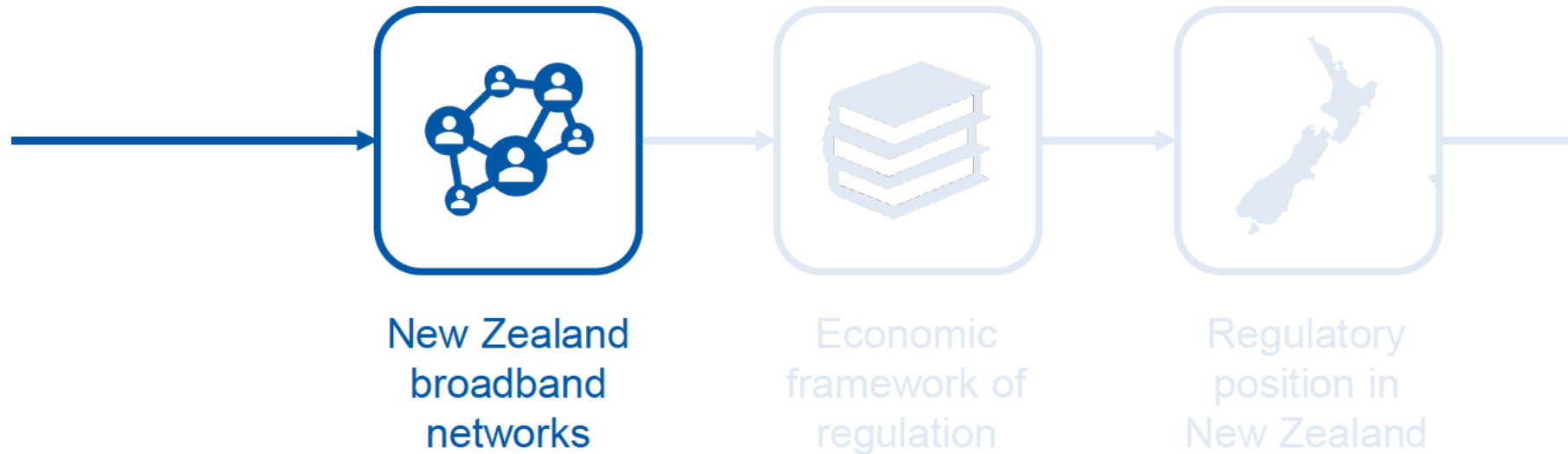
What are we covering?



Conclusion

- **Regulation of fibre varies geographically**
 - ➔ **If there is competing copper**
- **Cable and FWA are not sufficient to affect regulation, even though they can be faster than copper**
 - ➔ **Could be due to vertical integration**
 - ➔ **How long will this last?**

New Zealand Broadband Networks



New Zealand Broadband Networks

Fibre in New Zealand – “Ultra Fast Broadband”

UFB Programme

- Partially funded public-private partnership programme to build a national fibre network
- UFB partners chosen under a tendering process by geographic area

Networks

- Four local fibre companies (LFCs) won the right to build the fibre network in different geographic areas
- Networks are wholesale only and open access

Economic Regulation

- Wholesale price cap is set in initial contract
- Contractual price caps transitioning to a new regulatory regime in 2022
- Depending on network either information disclosure or price-quality regulation (revenue cap with price-controlled anchor product)

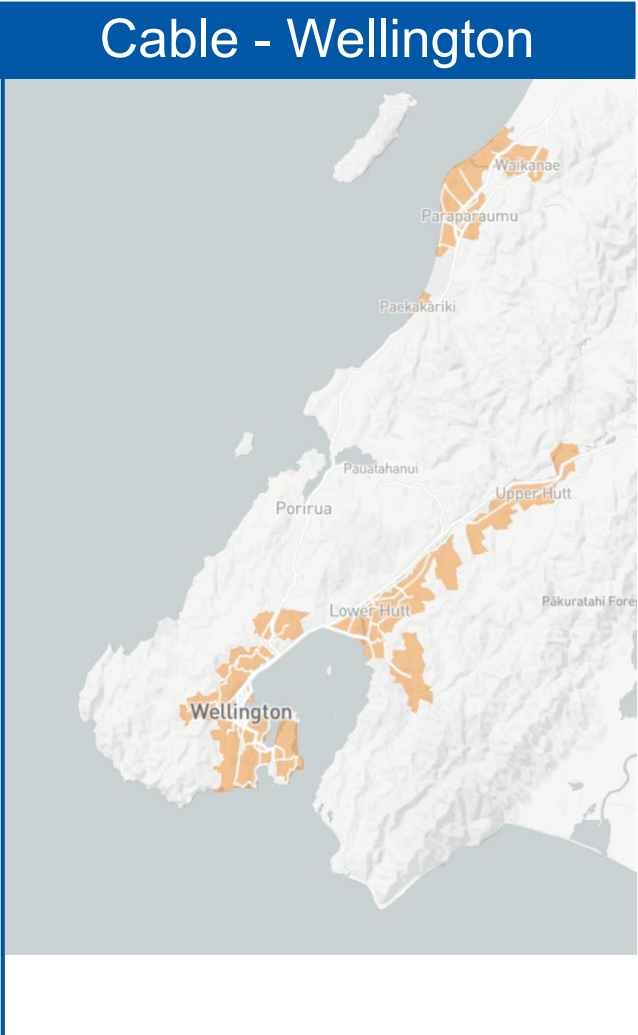
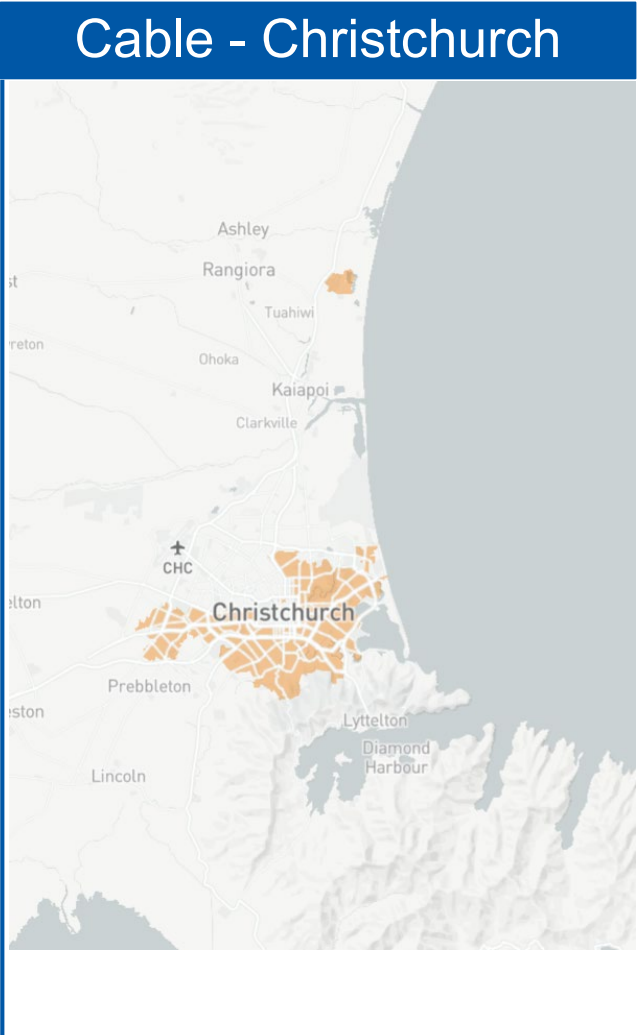
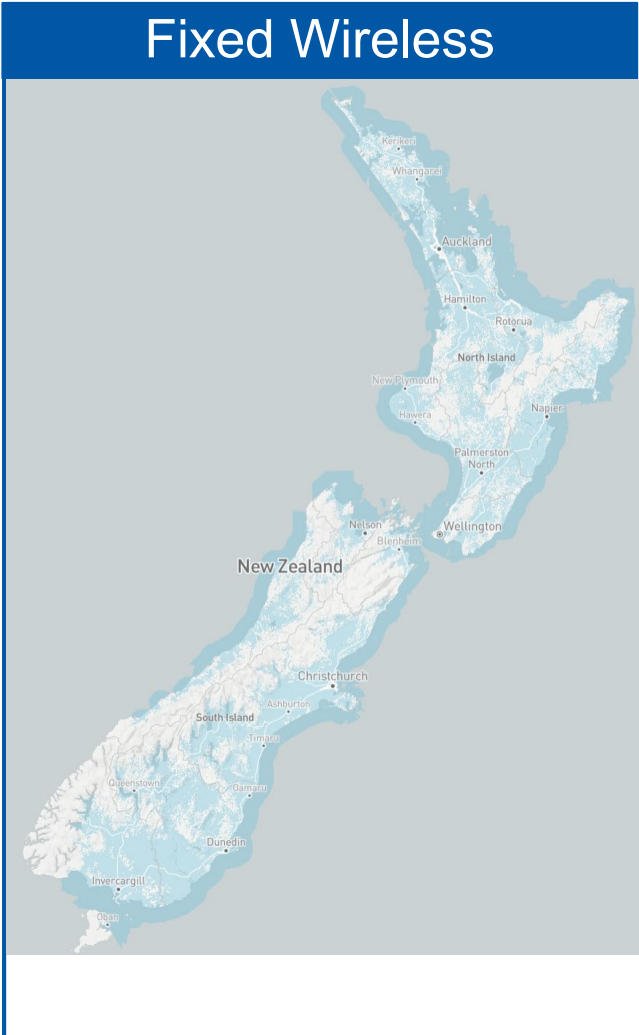
Coverage

- Initial goal 75% of the population
- In 2017 UFB expanded to include additional areas and a new coverage goal of 87% by end of 2022
- As of 2021 actual coverage of 84%
- Current fibre take-up is 64%



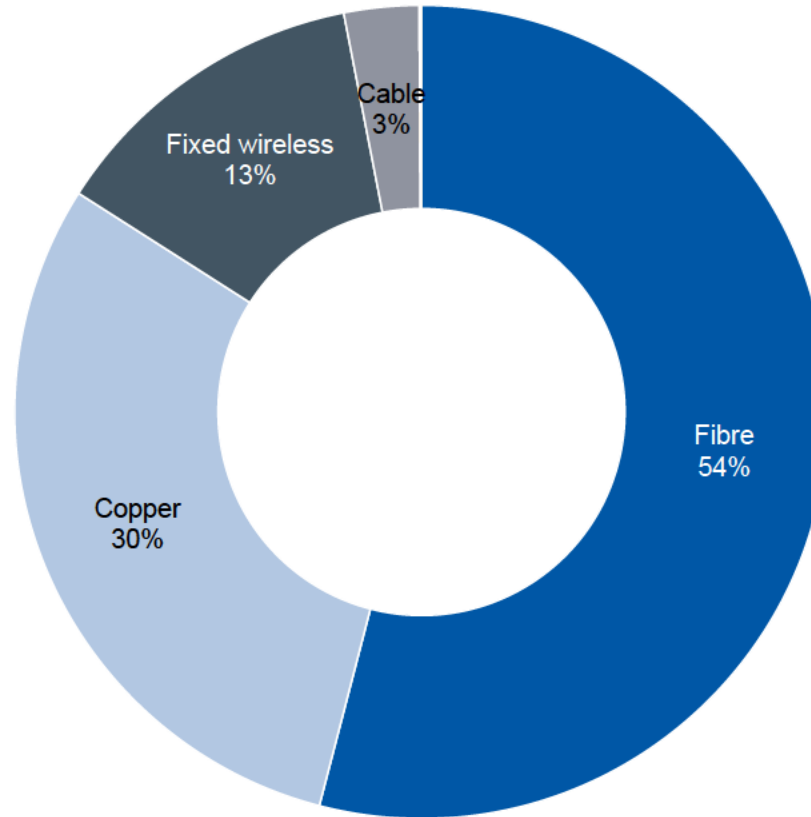
New Zealand Broadband Networks

Overview of fixed wireless and cable coverage



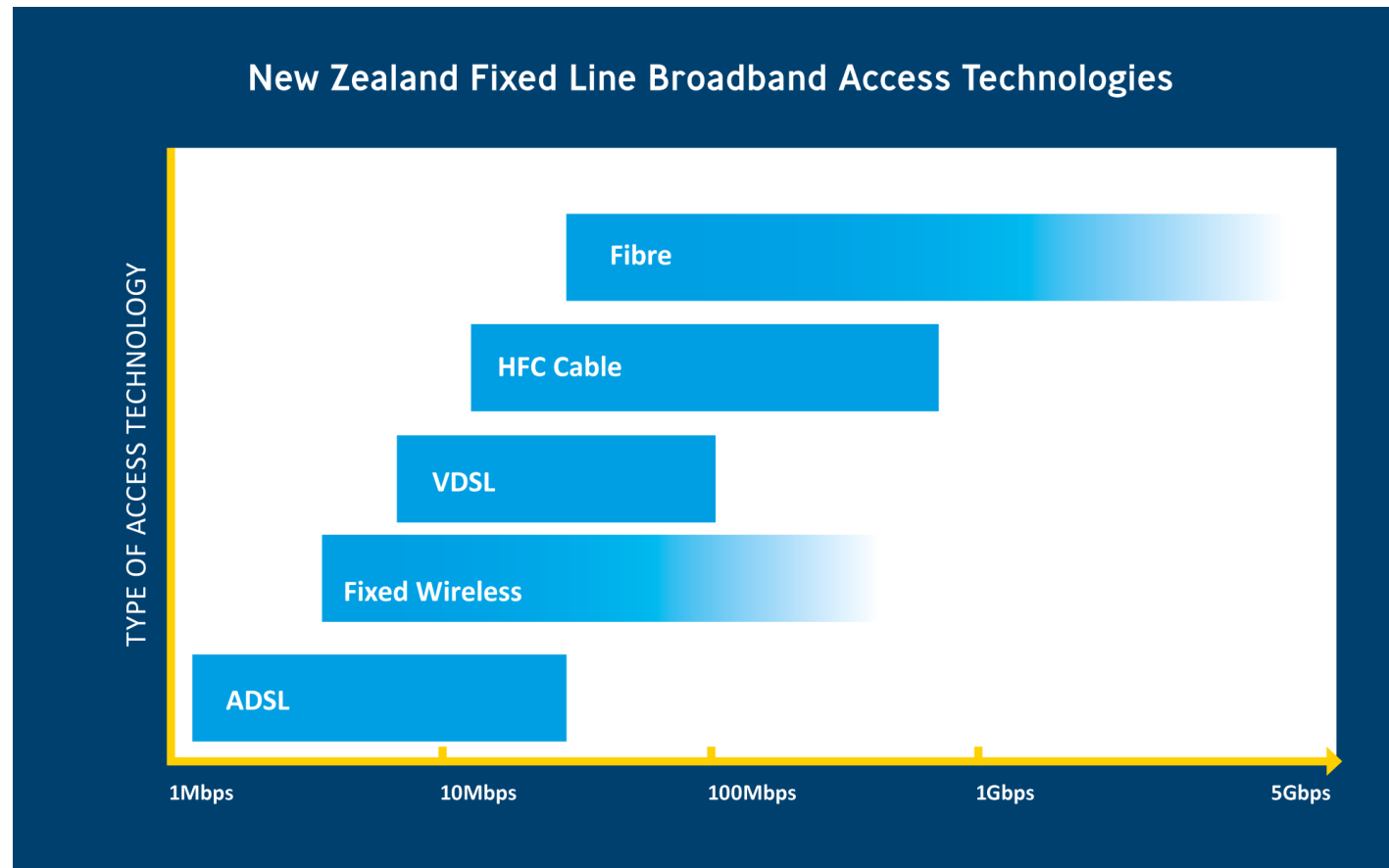
New Zealand Broadband Networks

Technology connections share 2020 (residential + business)



New Zealand Broadband Networks

Technology speed comparison

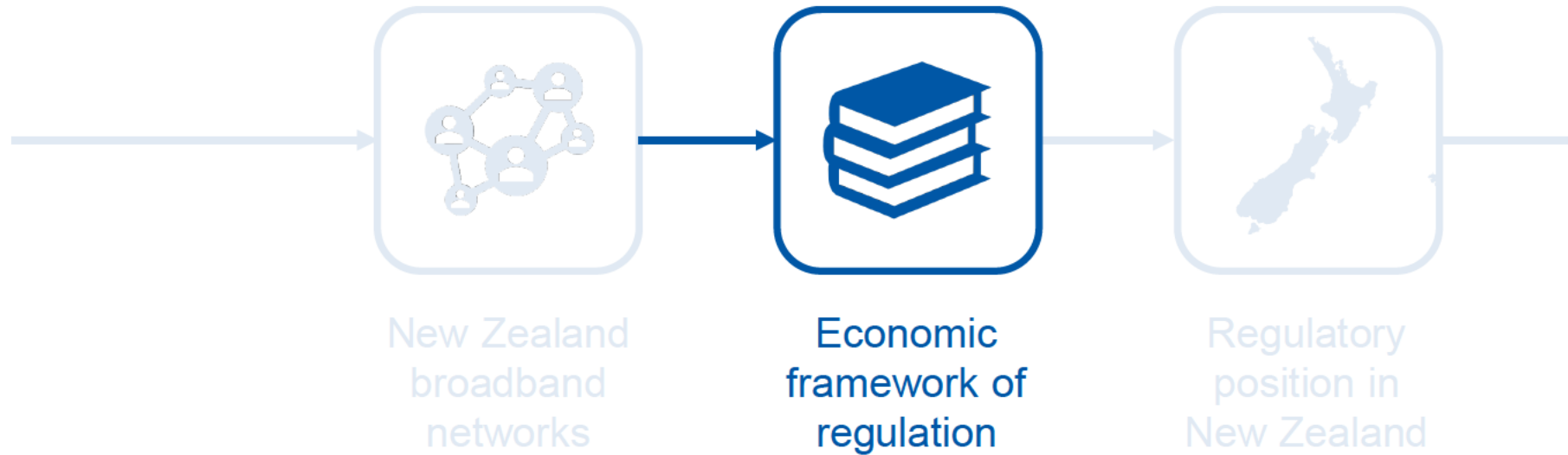


New Zealand Broadband Networks

Network overview

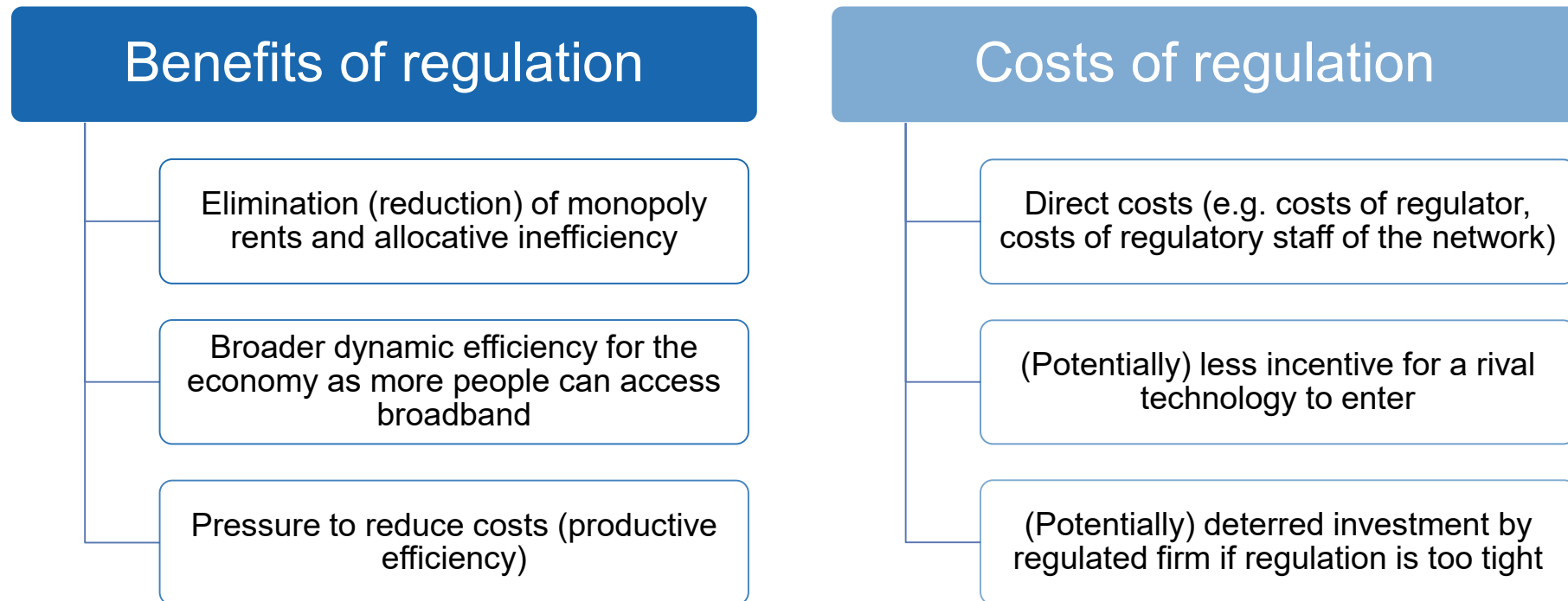
	Fibre	Copper	Fixed Wireless	Cable
Coverage	84% of population	98% of population	97% of population 4G coverage approx. <ul style="list-style-type: none">• actual fixed wireless offerings may differ	Wellington and Christchurch
Ownership	Chorus and LFCs	Chorus	MNOs <ul style="list-style-type: none">• vertically integrated	Vodafone <ul style="list-style-type: none">• vertically integrated
Access	Open access	Open access	Not open access	Not open access
Prices	Geographically averaged <ul style="list-style-type: none">• for each fibre company	Geographically averaged <ul style="list-style-type: none">• nationally	Geographically averaged <ul style="list-style-type: none">• for each provider• excl. rural broadband areas	Geographically averaged <ul style="list-style-type: none">• across Wellington and Christchurch

Economic Framework of Regulation



Economic Framework of Regulation

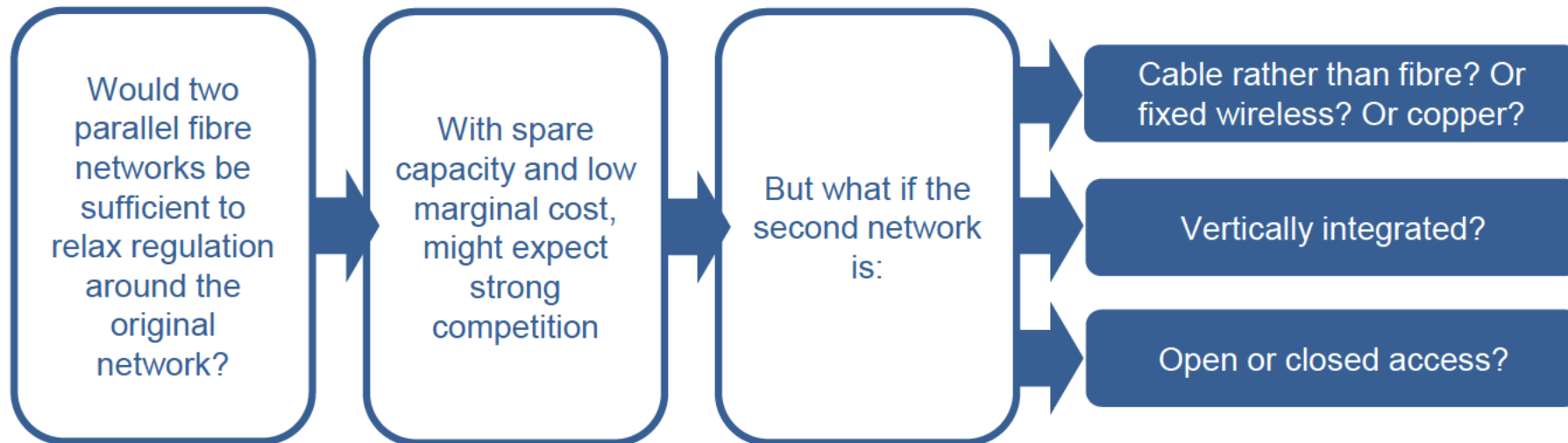
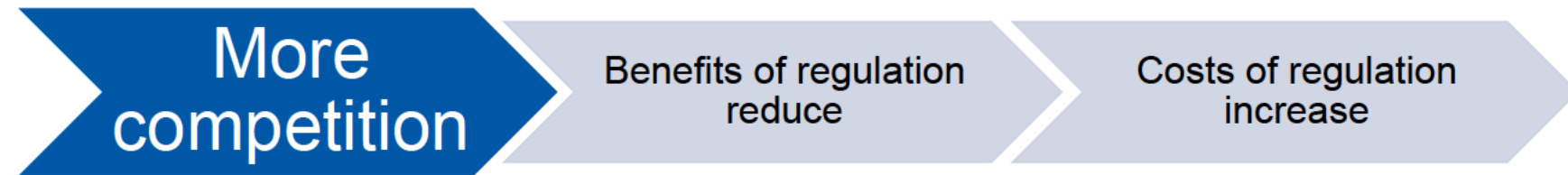
Monopoly - suppose there is one (near) national (purely wholesale) fibre network



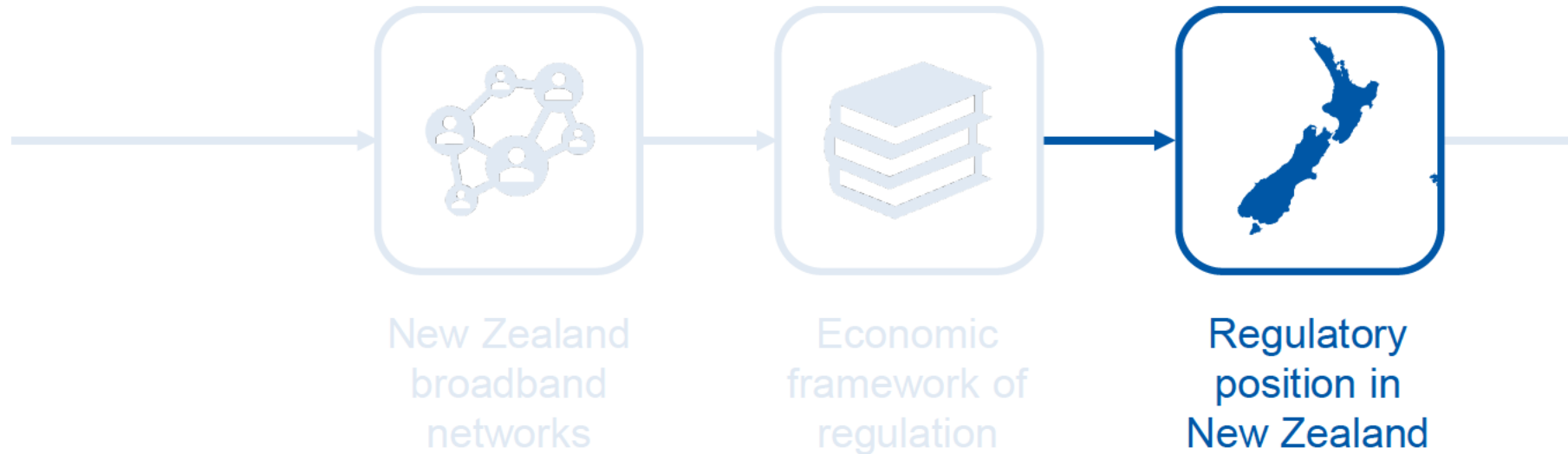
If **natural** monopoly, generally consider regulation benefits > costs

Economic Framework of Regulation

Oligopoly – suppose there are now two (or more) broadband networks

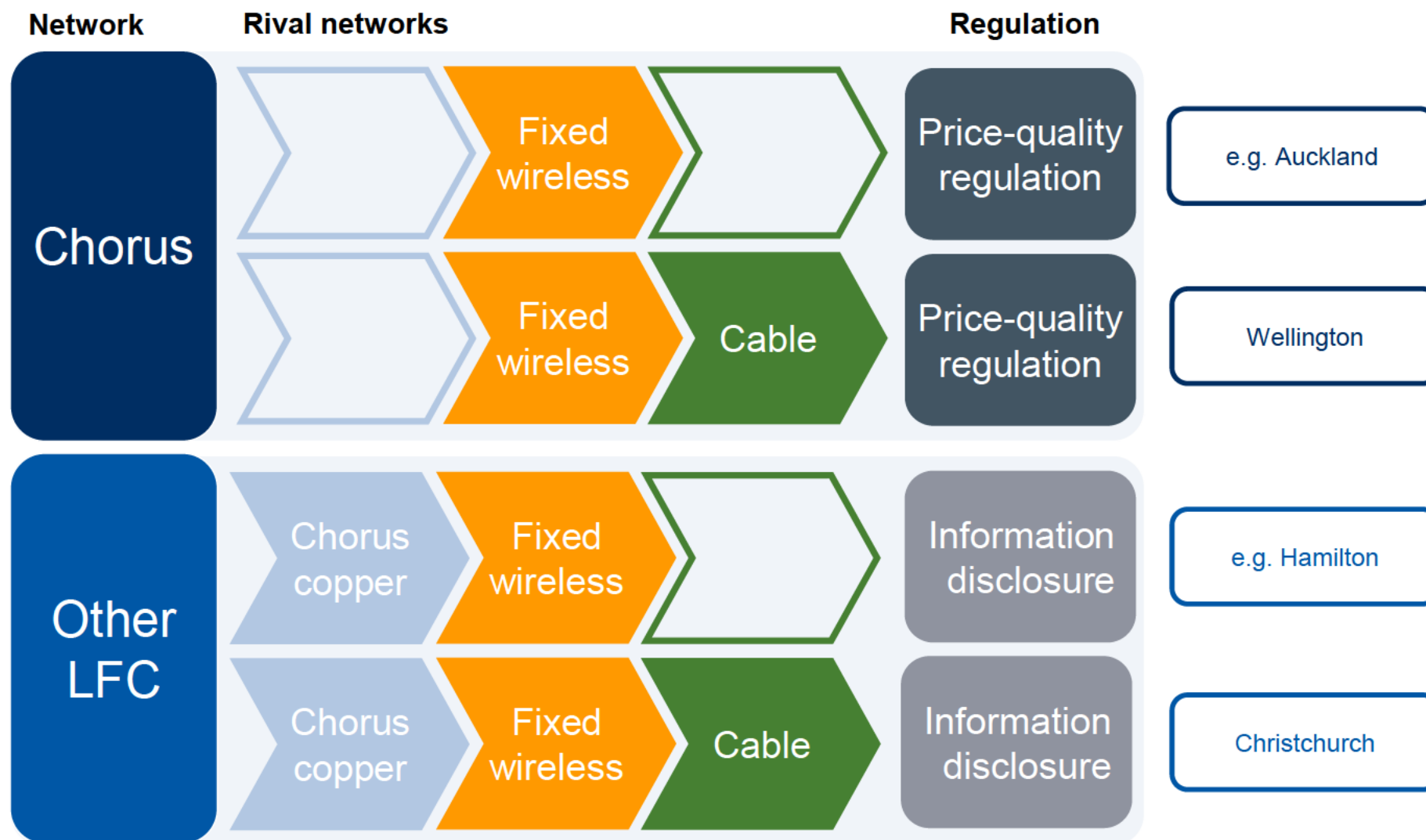


Regulatory Position in New Zealand



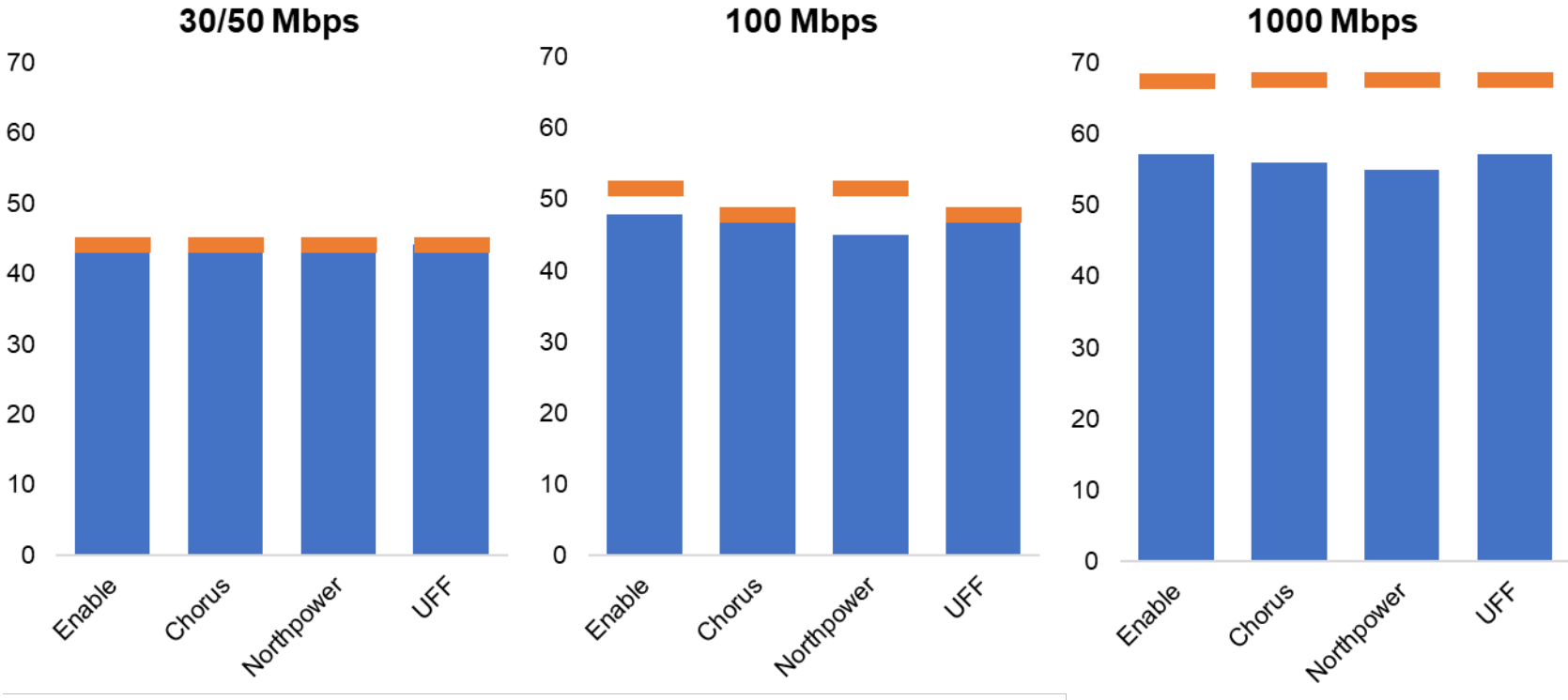
New Zealand regulatory position

Regulation of fibre networks



New Zealand regulatory position

Residential UFB pricing compared to price caps (download speed)



Conclusion

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 - ➔ **If there is competing copper**
- **Cable and FWA are not sufficient to affect regulation, even though they can be faster than copper**
 - ➔ **Could be due to vertical integration**
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ECONOMIC CONSULTING



ACCC/CER Regulatory Conference

**GEOGRAPHIC MARKETS: AN AUSTRALIAN
PERSPECTIVE OF FIXED BROADBAND**

DEENA SHIFF
JULY 28TH 2021



WHY APPLY A GEOGRAPHIC LENS?

- Regulators define markets to frame competitive conditions to identify where and how to regulate the exercise of market power.
- Policy makers use a geographic lense to determine where subsidies are needed or incentives are to be applied.

With the creation of the National Broadband Network (NBN) these two mechanisms have been intertwined.

NBN was established as a national wholesaler of broadband:



1) To bridge the digital divide: ensuring that all Australians have access to high speed broadband that fosters productivity and delivers economic and social benefits for all Australians; and

(2) To institute market reform and establish a more competitive market for retail broadband and telephony services.

AUSTRALIA'S CHALLENGES

Investment and market entry conditions in Australia reflect its vast land mass with highly concentrated urban populations.

This creates geographic extremes:

- high teledensity conditions offering higher returns on invested capital, contrasting with
- rural geographies away from towns or population settlements, where costs are high and ARPUs are low, and hence competitive entry was weak.

The regions experiencing this market failure have historically been the subject of USOs.

- The most recent review of the USO in 2018 retained it as a national scheme, rather than trying to address regional differences on a franchise or geographic contestability basis.
- Yet regional issues that create a digital divide persist.

**Going forward,
national policy
priorities demand
regional solutions:**

- **COVID INFRASTRUCTURE STIMULUS**
Increased government spending on regional infrastructure
- **DIGITAL INCLUSION**
According to the Government's Digital Economy Strategy 2030, "Australia's prosperity relies on inclusion. This means all Australians being able to afford, access and benefit from digital technology, tailored to their needs."
- **DEVELOPING NEW INDUSTRIES AND NEW JOBS**
We are entering a period of high demand for skilled workers with more reliance on remote working and demand for "digital clusters" or regional concentrations of very high bandwidth infrastructure that can support new developments in agriculture, manufacturing and even the creative industries.



We need a geographic lense to identify those needs, and to plan, measure and track the impact of public investment designed to close that gap.

WHAT HAPPENS WHEN WE APPLY A GEOGRAPHIC LENSE?

Let us choose five bands to test the level of competition and competitive entry:

Band One: Australian Capital Cities

Band Two: Peri urban settlements that have grown up around capital cities in search of affordable housing but where transport and social infrastructure is still catching up.

Band Three: Regional Towns with populations of between 20,000 and 40,000.

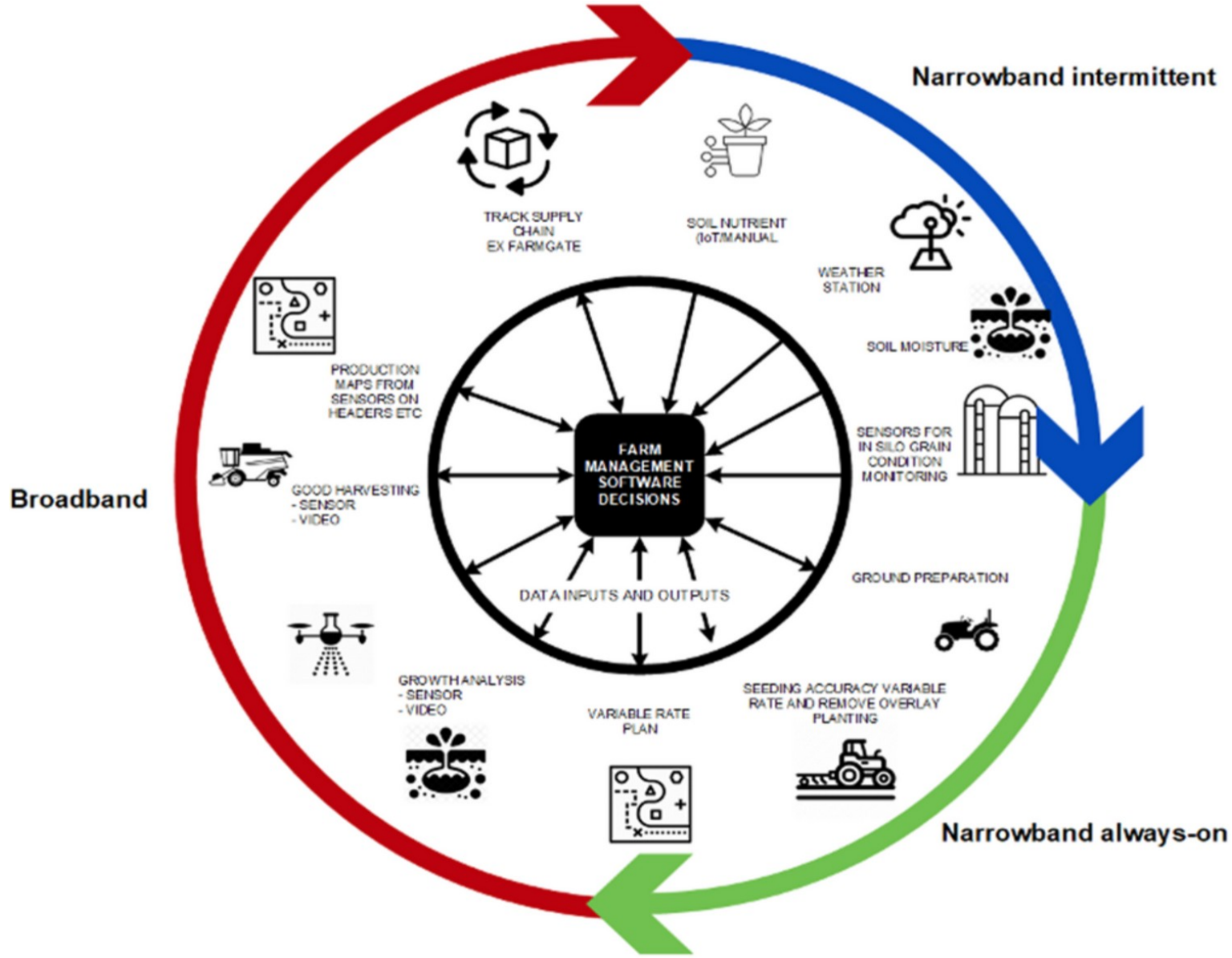
Band Four: Regional Towns with populations up to 20,000.

Band Five: Populations outside towns

WHAT HAPPENS WHEN WE APPLY A GEOGRAPHIC LENS?

In Bands One to Three, while NBN is the dominant provider of FB access, there has been some direct fibre competition from a number of larger scale players, such as Telstra, TPG and Uniti. Indirect competition seems to be largely coming from wireless access: from relative startups like Gigacomm, through to Optus and Telstra fixed wireless, with 5G coverage in these towns.

In Bands 4 and 5, we are not generally talking about fixed broadband as the upstream solution. Here the range of upstream alternatives to NBN's geostationary satellite is expanding: notably from LEOs like Starlink, or the local equivalent, Myriota; or from smaller scale regional players offering solutions tailored to the needs of a regional community.



Unpacking demand in bands Four and Five : Economic requirements vary from region to region.

A wheatbelt will require different capability to an intensive horticulture area.

Source : Agritech Expert Working Group (for Australian Broadband Advisory Council) in collaboration with Connected Farms .

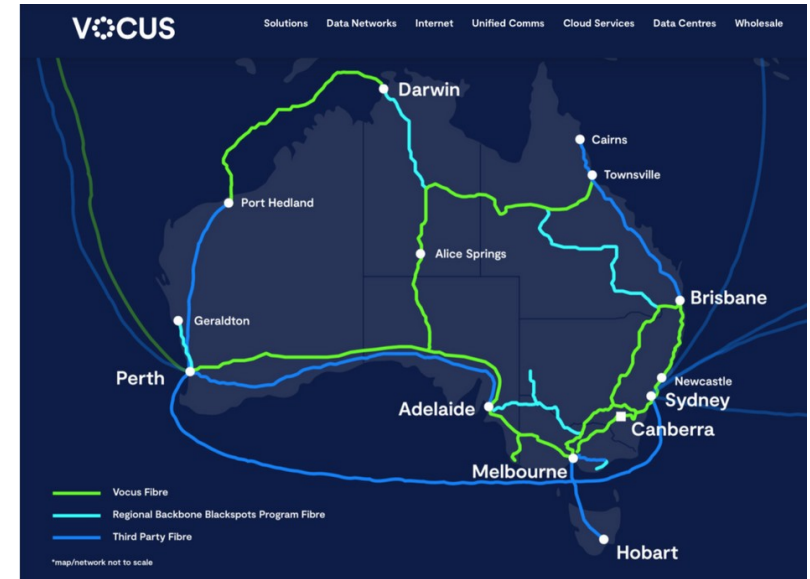
TECHNOLOGY	PROVIDERS	Narrowband Intermittent	Narrowband Always on	Broadband
LoRaWAN	<ul style="list-style-type: none"> • Meshed 	YES	YES	NO
CAT M1	<ul style="list-style-type: none"> • Telstra • Optus • Vodafone 	YES	YES	NO
Low powered radio controllers operating in 'white space' (e.g. 900Mhz)		YES	YES	NO
Fixed wireless using class licensed spectrum	<ul style="list-style-type: none"> • Zetifi • WiSky 	YES	YES	YES
Fixed wireless using licensed spectrum	<ul style="list-style-type: none"> • NBN 	YES	YES	YES
3G/4G/5G	<ul style="list-style-type: none"> • Telstra • Optus 	YES	YES	YES
Geo-stationary satellite (e.g. nbn co)	<ul style="list-style-type: none"> • NBN • Other providers (e.g. Telstra) reselling other global satellite services (e.g. Iridium) 	Battery power problems – higher orbit can require more powerful transmitter in ground devices	Latency problems	Latency problems
Low earth orbit satellites (LEOs)	<ul style="list-style-type: none"> • Myriota • Fleet 	YES	NO	NO
	<ul style="list-style-type: none"> • Starlink 	Yes (but maybe costly solution))	Yes (but maybe costly solution)	Yes

Matching supply to demand: National networks aren't necessarily the right fit for these non premises based applications.

Source : Agritech Expert Working Group (for Australian Broadband Advisory Council)

Wireless access providers in these regions should benefit from the significant investment in fibre exchange capacity being unleashed at this time, to supply fibre backhaul.

New Private Sector Fibre Networks



The HyperOne network

Our Vision

- HyperOne will be the largest private, independent digital infrastructure project in Australia's history
- HyperOne will be capable of carrying over 10,000 terabits per second – more traffic than every other national backbone built in Australia's history combined
- The most complete national fibre backbone ever constructed and the first built in almost two decades
- Critical infrastructure of national and international importance with significant protected capacity
- Opening up the north of Australia and providing valuable on-and-off-ramps to underserved regions across the country
- A significant job creator at a critical time for our nation – partnering with local industry in each state of Australia



Source: <https://hyper.one>

Potential for competitive entry in areas assumed to be unattractive

Although it is too early to assess, deployments of private 5G networks for farming communities or the establishment of Open RAN 5G, could be transformative in regional communities if they could be commercially proven in.

Not only the MNOs but other well capitalised infrastructure providers or consortia (eg Vocus/MIG; Infraco; BAI Communications) could choose to localise their points of competitive entry and “pick off” underserved but attractive regions in Bands Three and Four with the relevant upstream requirements.

REGULATORY IMPLICATIONS

- The emergence of competitors using alternative technologies at much lower cost especially in Bands 4 and 5, challenges not only who is regulated (national suppliers like NBN and mobile carriers) but what is regulated
 - Suppliers operate nationally, notably NBN and the mobile carriers; regional communities have shown a willingness to acquire locally to better meet their requirements and are creating a heterogeneous market of alt nets for data access, who need to be plugged into fibre backhaul.
- Software defined networks (SDN) enable a much more diverse network architecture where different technologies, including those operated by different carriage service providers or carriers, can be seamlessly integrated.
 - We have tended to conceive of interconnection as localised points at which large scale, standalone national networks connect with each other. This may not be the way of the future.

POLICY IMPLICATIONS

What happens now?

- Limited disaggregation of access or inter exchange technologies in ACCC Communication Market Report into regional bands that reflect competitive intensity.
- No public regional mapping of the unconnected, remnant SIOs on DSL and legacy USO radio and copper products.
- No tracking of digital inclusion based on an accepted statistical basis (eg Digital Inclusion Index) that also captures Indigenous inclusion and Close the Gap measures.
- No post implementation reviews of claimed economic and social benefits of government co investment into regions.

What should happen?

- Creation of a geospatial map that identifies infrastructure requirements and priorities and tracks Digital inclusion scores. The ACCC's RKR, which now include mobiles coverage, to be used to populate the data sets.
- Better information by region of the people who need to be better connected to support the re design of the USO.
- Commonwealth Regional Co investment programs could favour private and government initiatives which measure and track social and economic benefits by region and offer post implementation review.

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