

C H ● R U S



Help us shape the future of fibre

Engagement paper on Chorus' investment plans for the three years from July 2022

Published 20 March 2020

Introduction

Chorus operates national telecommunications networks over which we provide a range of commercial and regulated services. This paper is focused on fibre fixed-line access services that retailers use to deliver voice and broadband internet services across New Zealand, and the networks that support these services. From 2022, our fibre fixed-line access services (**FFLAS**) will be governed by new regulatory arrangements overseen by the Commerce Commission.¹

We are seeking your views to help us shape the business plan for FFLAS we put to the Commerce Commission as part of these arrangements. The Commission will scrutinise our plans and make decisions that set the scene for fibre services – governing our investment and operations, and the quality of service we provide.

We have attempted to keep this paper succinct and clear, but appreciate the concepts are new to most of our stakeholders. We encourage you to get in touch if we can help to clarify or expand on the paper, and to attend (or watch afterwards) our consultation workshops.

Purpose of this paper and your role in shaping our plans

This paper explains at a high level (noting that rules are still under development) how the new arrangements work, provides an overview of our fibre business plan for the three years from July 2022 (called Regulatory Period One, or **RP1**), highlights areas where your input can best shape our plans, and invites your input.²

How can you help? We'd like to know:

- how do we best explain our plans clearly and meaningfully?
- do you have views on the future of fibre services, and communications more generally?
- can you help us set our investment and operational priorities?

We are inviting written submissions on this paper by **17 April 2020**.

Please note that we intend to publish submissions on our website alongside the consultation paper and workshop materials. If you wish to include any confidential information in your submission, please clearly identify this and provide separate public and confidential versions.

Consultation workshops

To help you engage, and to enrich the feedback we receive, we are planning to hold two two-hour workshops. The first will step through the content of this paper and offer a first opportunity for clarifications. The second workshop will zero in on key topics and aim to stimulate discussion.

¹ The new arrangements are established by Part 6 of the Telecommunications Act 2001. Part 6 was introduced in 2018 and revenue control will be implemented from 1 January 2022. More detailed information is available on the Commerce Commission [website](#).

² Our working assumption is that revenue control from 1 January 2022 will be based on expenditure from 1 July 2022 – i.e. there will be a 6-month offset built into the regime to align with our financial year. This type of offset applies in other similar regulations.

We plan to hold both workshops online and record them for later viewing. Tentative times are Thursday, **2 April** and Thursday, **9 April** from 10:30 to 12:30. We will keep these timings under review due to the unfolding COVID-19 situation.

Now we're engaging on our business plans. We'll hold workshops and ask for submissions. We can also meet you 1:1. Your input will help us finalise our proposal in June.



- We released this paper
- Briefing workshop
- Feedback workshop
- You provide written submissions
- We confirm our proposal

In July, we'll ask about future engagement.



- Input on future engagement

After we submit in October, the Commission will consult and reach a decision.



- We submit our proposal
- RP1 starts

Please get in touch via email if you would like to meet separately or request an additional workshop. We will aim to meet any such requests if possible, noting COVID-19 restrictions and timing constraints.

Next Steps

We will consider insights from the workshops and submissions as we finalise our RP1 Proposal. In July, we are planning a second round of engagement focussed on shaping future engagement plans. We will ask how this process has worked for you and seek feedback on ideas for new initiatives.

We expect to submit our RP1 Proposal in October this year. The proposal will be public, and the Commission is likely to seek your input as it evaluates the proposal and decides on RP1 settings.

Please use our email address RP1@chorus.co.nz to:

- register your (online) attendance at one or both of our workshops
- contact us to request 1:1 engagement or additional workshops, and
- send your submission to us by 5pm on 17 April 2020.

This is a great opportunity to influence the future of fibre – we appreciate your engagement and look forward to working with you!



For up to date information (including workshop recordings) please visit our website: <https://sp.chorus.co.nz/process/investment-planning-consultation/overview>

The balance of this paper covers

- What services will be regulated?
- How will the new arrangements work?
- An overview of how our plans for RP1 are firming up
- Engagement focus areas – including resilience, network extension, and product investment
- How to provide your input

Contents

Introduction	2
Purpose of this paper and your role in shaping our plans	2
Consultation workshops	2
Next Steps	3
The balance of this paper covers	3
What services will be regulated?	6
Wholesale level activities.....	6
...covering most of the country.....	6
...providing fibre access.....	6
Including a range of product families.....	7
...and shared assets.....	8
How will the new arrangements work?	9
By setting maximum allowable revenues... ..	9
...based on regulatory business plans... ..	9
...using rules still under development.....	9
Using a three- to five-year cycle.....	10
...alongside price caps for some products.....	10
Our plans for RP1 are firming	11
We will confirm our proposal in June... ..	11
...but will refine our plans continuously.....	11
...so we're consulting on high-level direction	12
Our business is changing... ..	12
...and so is our investment profile	14
Our fibre operating costs will also be changing.....	16
We're inviting input on several engagement focus areas	17
Slider diagrams highlight key areas of discretion	17
We're considering how much to invest in resilience... ..	18
... and physical asset condition.....	19
...and whether to alter fault response performance	20
We could invest in post-UFB extension... ..	21
...and new developments.....	22
We could keep promoting fibre uptake.....	23
...and sustain the pace of product development... ..	23
...and we could invest to support an efficient sector and even better customer experience.....	24
We welcome your views in other areas too	26

Appendix – Consultation Questions.....27

What services will be regulated?

This section explains who we are, and which services will be regulated.

Wholesale level activities...

We operate New Zealand's legacy copper network and extensive fibre-optic networks, including those deployed under the Crown's ultra-fast broadband (UFB) and rural broadband (RBI) initiatives.

We are a wholesale provider – we provide services to retail service providers (**RSPs** like Vodafone, Spark, Slingshot and Trustpower) who provide services to end customers. As an end customer, you may deal with us directly when we turn up to install or repair your fibre connection, but otherwise our role is mostly behind the scenes keeping the network running.

...covering most of the country...

We are most of the way though building a new fibre network covering more than 350 communities across New Zealand as part of the government's ultrafast broadband (or **UFB**) initiative. The remainder of the UFB programme was delivered by other local fibre companies (**LFCs**).³

...providing fibre access

Our older copper-based network, which covers most of New Zealand, is not covered by the new regulatory arrangements. This means services like ADSL and VDSL are out of scope for this consultation.

As we've built our network, we've installed communal infrastructure down each street. We then install a connection to each property on request. The communal network connects back to local exchanges, which in turn connect back to regional exchange buildings. We provide:

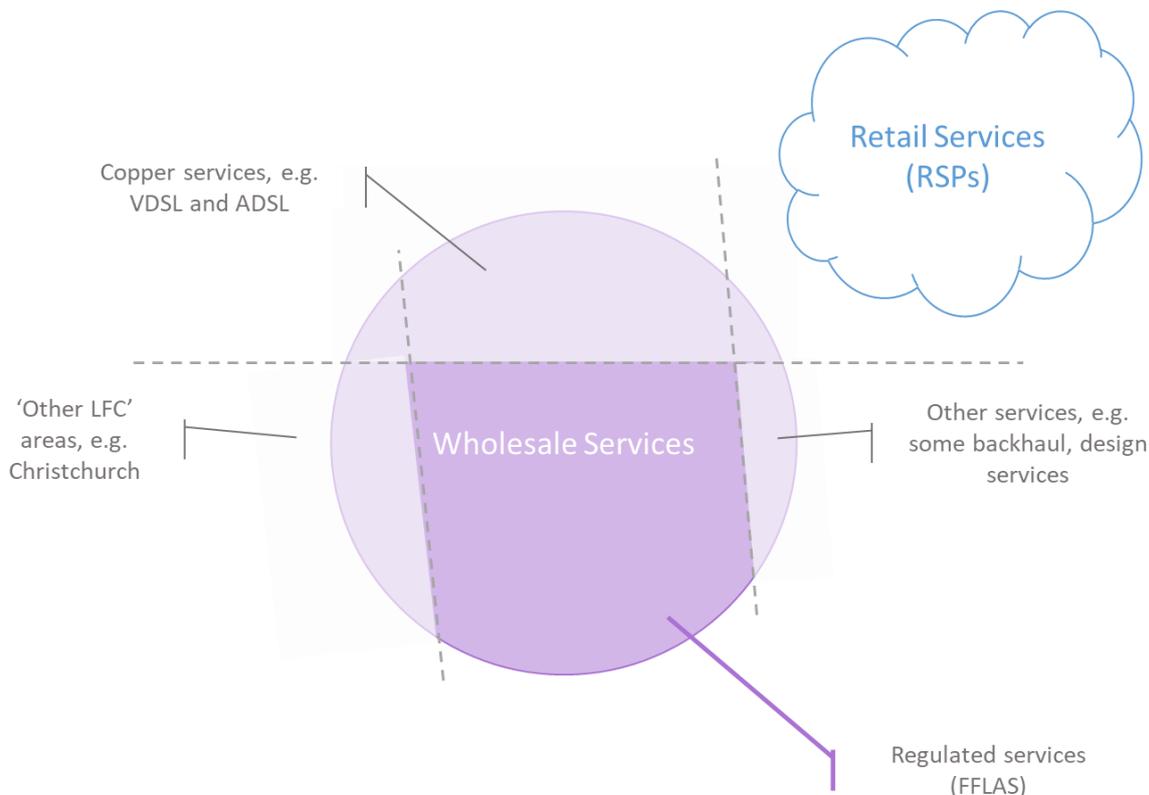
- Supporting infrastructure such as poles, pits, ducts and buildings, known as Layer 0
- Fibre optic strands and optical splitters, known as Layer 1, and
- Electronics in premises and exchanges that move data through pulses of light⁴, known as Layer 2.

RSPs may install their own equipment in end customer premises (e.g. modems and routers) and our exchanges to provide broadband services using our infrastructure. RSPs also provide connections from our key exchanges back into national backbone and international routes, though in some cases they use our infrastructure for this too.

³ Other LFCs are out of scope for this paper. They are Enable Networks (Christchurch), Northpower Fibre (Whangarei) and Ultrafast Fibre (Tauranga, Hamilton, New Plymouth, Whanganui and surrounds. For more information on UFB, visit <https://www.crowninfrastructure.govt.nz/ufb/what/>

⁴ Layers 1 and 2 refer to the Open System Interconnection (OSI) seven-layer model. We use Layer 0 in this paper to refer to our other physical exchange and field infrastructure.

The Telecommunications Act refers to our regulated services as fibre fixed line access services, or **FFLAS**.⁵ The following diagram helps to show which parts of our services will be regulated – these services are the subject of this paper.



Including a range of product families...

The biggest part of our business is providing consumer and business broadband and voice products, which involve our retailer customers buying services from us that use the three network layers described earlier. Other product families include:



- Layer 1 – we provide point-to-point (DFAS) and point to multi-point (PONFAS) Layer 1 or ‘dark fibre’ services that allow others to build their own Layer 2 infrastructure
- non-premises – some customers buy fibre connections for non-premises applications, such as smart signs or traffic lights, and
- cellular – mobile network operators can use our network to service cell sites. This application may grow if 5G networks involve extensive high-density cell sites

We also host RSP network equipment in our exchanges.

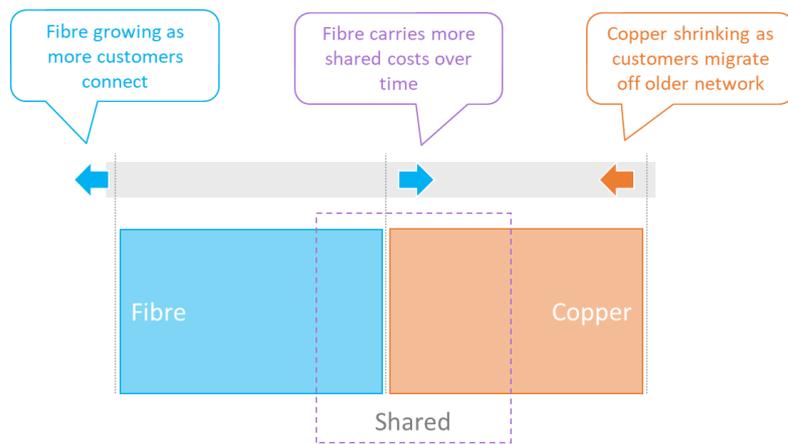
These product families are all in scope of the new regulatory arrangements.

⁵ How FFLAS will be interpreted and applied in detail is not yet clear. We are using a working approach that reflects our best view for now.

...and shared assets

As we built our new network, we were able to use a lot of the infrastructure already in place to support our copper network – e.g. exchange buildings, poles and ducts. We also share corporate resources across both networks – e.g. management, offices, and computer systems.

The new regulatory arrangements will take this sharing into account.



As New Zealanders migrate from copper services to fibre services, a growing portion of our shared assets and resources will be funded through the revenue from fibre services. This means that our investment in shared assets and services is relevant to this consultation.

Important Note:

Our future regulatory arrangements are still under development, so we have had to use our own working assumptions throughout this paper – including for matters such as the scope of regulated services, and allocation of shared costs.

To the extent that final regulatory settings and decisions depart from our expectations, our business plans may have to change. We also acknowledge that in the context of the evolving COVID-19 situation, there may be economic, policy or operational changes that require us to reconsider current plans.

How will the new arrangements work?

This section explains how we understand the new regulatory arrangements will work.

By setting maximum allowable revenues...

The new regulatory arrangements will work by setting a maximum allowable revenue (MAR) across all our regulated FFLAS services. The MAR is designed to cover our costs, including a fair return on investment, with some adjustments to encourage continual service quality and efficiency improvements, and address risk.

...based on regulatory business plans...

The process for setting our MAR involves Chorus preparing a proposal every three to five years for the Commission to review and approve (typically with some adjustments).

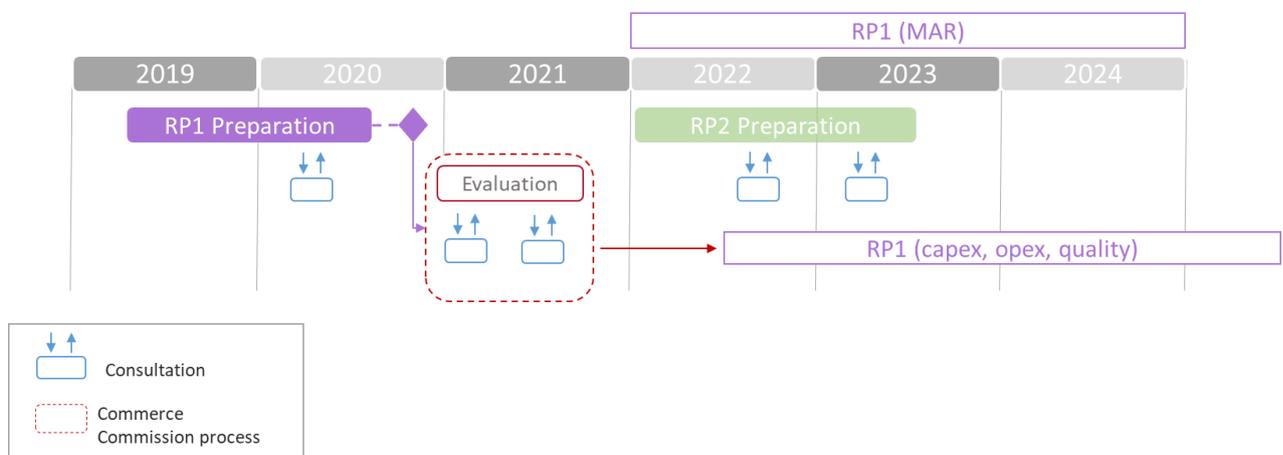
Our proposal is like a business plan for FFLAS – it forecasts relevant operating costs (operating expenditure, or opex) and ongoing investment in our relevant assets (capital expenditure, or capex). It also talks about the quality of service we aim to deliver, how we developed our forecasts, and how we’ll ensure we deliver on our plans.

...using rules still under development

Regulatory rules and “input methodologies” are still being developed by the Commerce Commission but our expectation is:

- we will submit (and publish) our RP1 Proposal in October
- our proposal will carry forward existing quality of service settings, and will forecast operating expenditure (opex) and capital expenditure (capex) for the three years from 1 July 2022, and
- the Commerce Commission will evaluate and consult on our proposal for 8-12 months, then determine MAR values for the three years from 1 January 2022.

The diagram below illustrates the timeframes involved in this process.



Using a three- to five-year cycle...

During RP1 we will prepare our proposal for the following period, RP2. The MAR values determined for RP2 will be influenced by:

- our revenue during RP1 – if we over- or under-recover the MAR during RP1 then our RP2 (and maybe RP3) MAR will be adjusted to ensure things balance out over time
- our actual expenditure during RP1 – if we over or under-spend the opex and capex amounts used to set the RP1 MAR then the RP2 MAR will be adjusted to pass *most* of the difference through. The retained portion is our incentive to outperform expenditure assumptions,⁶ and
- the proposal we put forward for quality and expenditure during RP2 (i.e. our RP2 Proposal).

...alongside price caps for some products

During RP1 we will also have individual price caps in place for anchor services – likely to be basic voice, 100/20 broadband and Layer 1 point-to-point (DFAS).⁷ This sets up a dynamic that will play out over several regulatory periods where:

- price caps are likely to play a dominant role early on while revenue sits below the MAR (in other words, we are unable to recover our efficient costs), and
- as more customers connect to our fibre network and fibre revenues grow, we should reach a point where the MAR begins to play a dominant role.

As we enter RP1, the timing of these dynamics is too uncertain for us to draw a direct link (or publish scenarios) showing how the amount we invest during RP1 will flow through to pricing for our services. However, as a rule we can say that investing more (to provide higher quality services) leads to a higher price path over time than if we invest less (and *vice versa*).

Testing whether we have this price-quality balance about right is a key focus for us, and the Commission.

⁶ We are assuming for now that regulatory incentive arrangements of this type will apply. Such arrangements reduce the consequences of any forecast error and reinforces impetus for ongoing efficiency improvement efforts.

⁷ These services are identified in a May 2019 cabinet paper <https://www.mbie.govt.nz/dmsdocument/5719-fibre-regulations-under-the-telecommunications-act-2001-proactiverelease-pdf>

Our plans for RP1 are firming

This section provides context on our planning, and an overview of how we expect to invest in fibre during RP1.

We will confirm our proposal in June...

We've aligned proposal preparation with our normal business planning cycle, which means we'll be confirming our RP1 plans in June this year.

The Commission will confirm rules soon after, and our efforts will turn to finalising documentation, quality assurance and compliance checking before submitting our proposal in October.

Engaging now means your input can influence our decision-making in June.

...but will refine our plans continuously...

The end of RP1 is five-years into the future, which means our forecasts must deal with inherently high levels of uncertainty.⁸ While some areas are more predictable, we know all our plans will evolve through RP1 as we respond to factors such as:

- market developments (e.g. customer demand and competition)
- network information (e.g. updated asset condition information)
- new requirements (e.g. seismic standards)
- improved knowledge (e.g. of risks) and new ideas and insights, and
- changing supply conditions (e.g. equipment and field services) and delivery performance.

Continuously refining our plans is core business, and we expect regulatory arrangements will recognise and deal with uncertainty through several key features:

- the Commission will use our forecasts to establish overall capex and opex baselines for each year, not to approve detailed plans. We will have flexibility to adjust our plans and reprioritise as we go, with incentives to out-perform the baselines but latitude to spend more if really needed
- the baselines will have a variable component that adjusts as we go to reflect differences between forecast and actual demand for new connections. This ensures we don't have an incentive to over-forecast, or to turn away (or delay) connections, and
- we can apply for approval of additions to the baselines at any time for large (more than \$5m) initiatives that were too uncertain to include in our main RP1 Proposal.⁹

⁸ Our forecasts will cover the two years prior to RP1, as well as the three years of RP1 – i.e. FY21 to FY25.

⁹ This is called 'individual capex' in the Commerce Commission's draft input methodologies.

...so we're consulting on high-level direction

The key implications are that:

- our consultation focusses on investment direction, not detailed plans. For example, it is more meaningful to seek views on our overall scale of investment in new products than on the timing or design of specific initiatives¹⁰
- we do not need to focus on gathering views regarding our connection volume assumptions, as forecast error should be corrected automatically, and
- excluding an area of investment from our proposal won't necessarily eliminate the possibility of investment, because we *may* be able to apply for individual approval later.

Our business is changing...

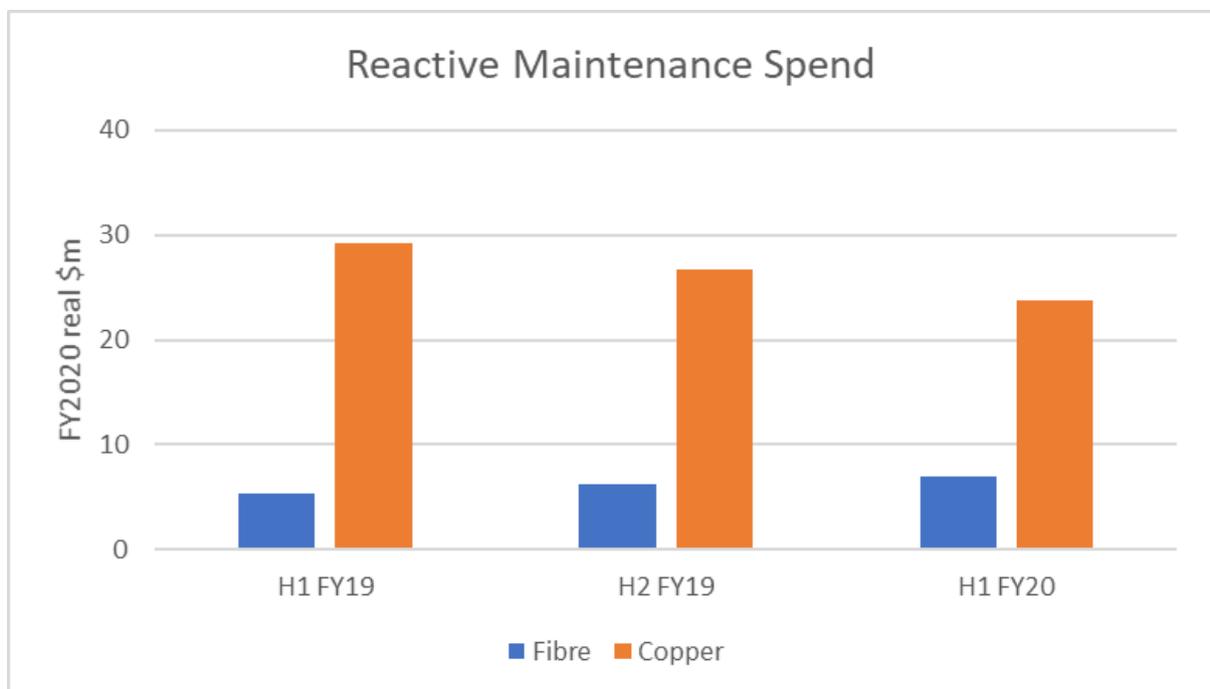
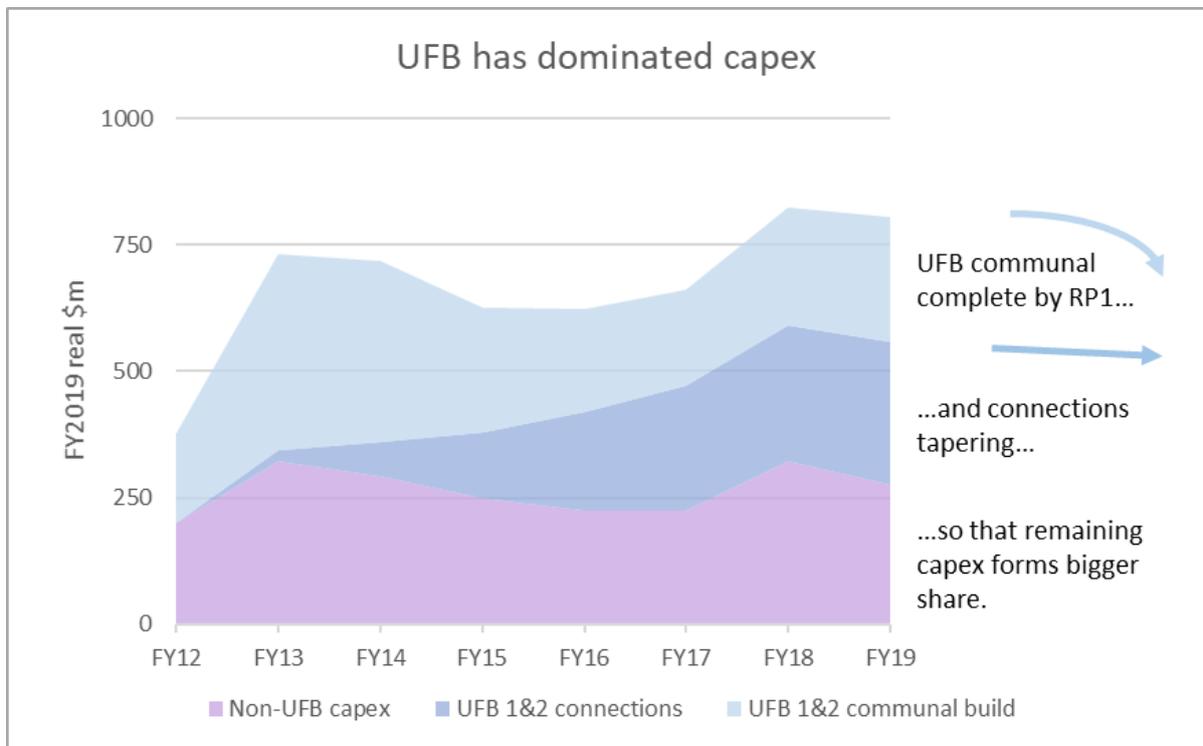
As we enter RP1, our business will be changing significantly as:

- we complete committed UFB build programmes. UFB communal investment peaked at more than \$350 million in FY13, was close to \$250 million in FY19, and is expected to be complete as we enter RP1
- connection activity begins to ease. We recently crossed over the point where more than 50% of our broadband connections are fibre, and some early UFB areas already have nearly 70% of capable addresses connected¹¹
- end customer and wider societal expectations of fast, uncongested, resilient, always-on connectivity continues to grow
- network traffic continues to surge, and technology options continue to advance. These factors, plus demand for new products will continue to drive steady investment in network electronics
- maintenance activity swings from copper to fibre, and field activity declines overall. We experience fewer faults with new fibre, and our build and connect activity will be declining. These trends will alter the landscape for our in-field service partners
- parts of the country reach a point where it begins to make sense to complete the transition from copper to fibre, so that parts of the copper network can be retired
- our financial position stabilises as fibre revenue grows, regulatory settings bed in and capital expenditure reduces
- areas of comparatively stable investment – network sustain, information systems, network electronics – make up a bigger portion of our plans as other areas drop away, and
- our asset management focus for fibre shifts from build to optimisation, plus further enhancing our capability to develop robust regulatory expenditure proposals

¹⁰ Note that we do engage in more detail with RSPs on our 1-2-year product roadmap.

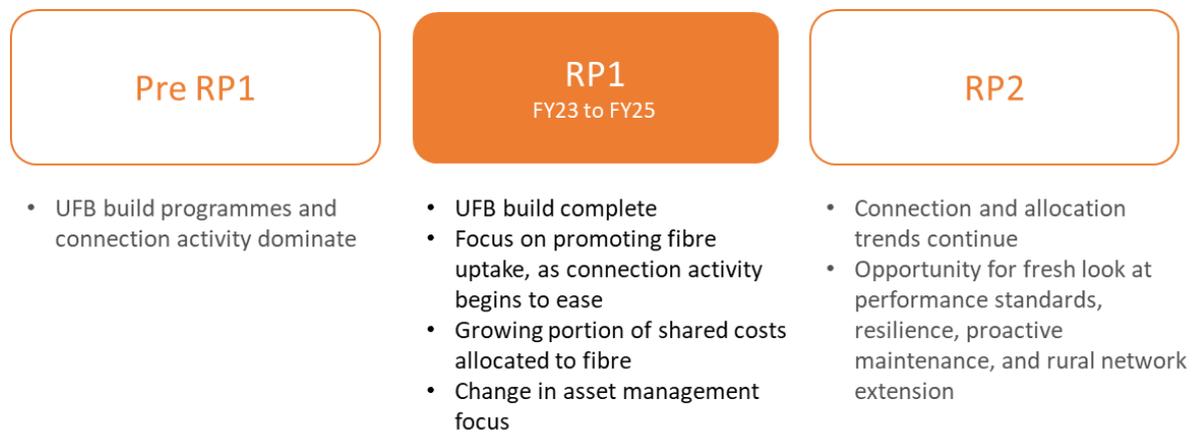
¹¹ For more information on our connections and spend, see our latest results presentation at <https://company.chorus.co.nz/file-download/download/public/2062>

The following charts provide context on some of these trends. Both charts are adjusted for inflation.¹²



¹² Adjusting for inflation is common practice for regulatory proposals, due to the long timeframes involved. Removing inflation provides a clearer picture of underlying trends. It tends to flatten profiles, by making historic figures higher and future figures lower.

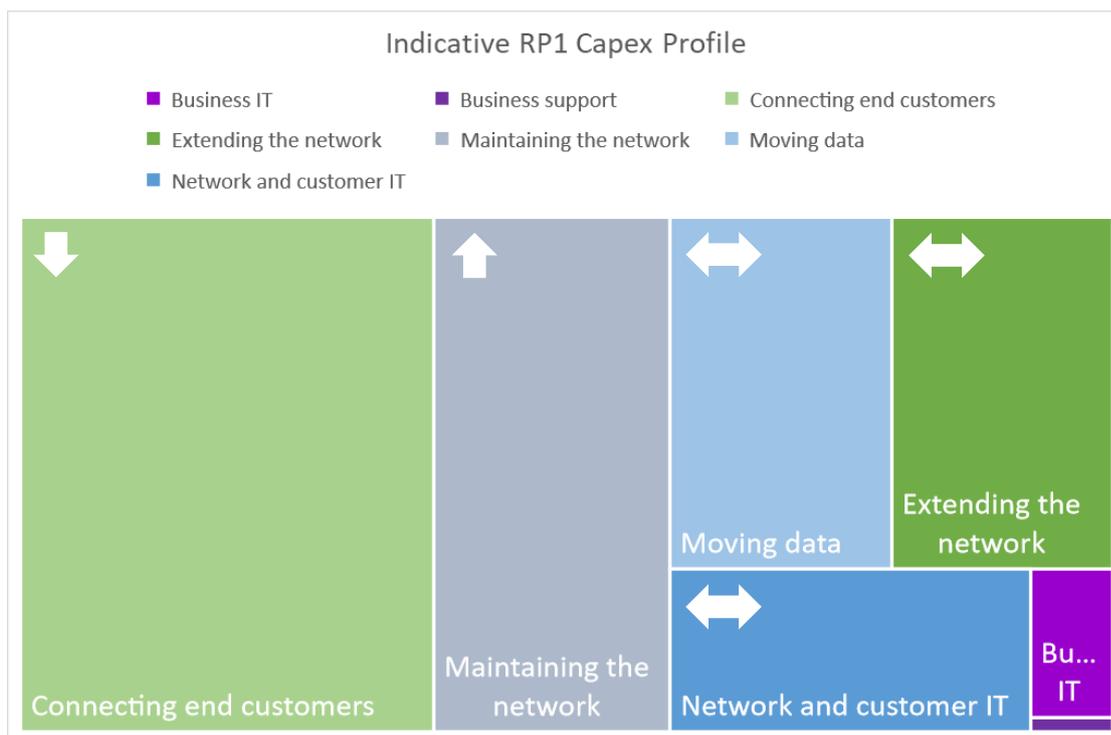
For further context, the following diagram summarises high level trends for RP1 compared to prior and following years.



...and so is our investment profile

The diagram below provides an indication of our capex profile for RP1. This is the best view we can provide at this time, and readers should note:

- forecasts are only preliminary at best, including because there is not yet a firm position on how shared costs should be allocated or whether some of our (smaller) services will be FFLAS
- we are currently refreshing our forecasts, ready for our internal decision making in June. Our final proposal will be influenced by your feedback, updated information, and ongoing enhancements to our forecasting and planning capabilities, and
- due to market sensitivity (and considering the uncertainties described above) we are not intending to share a quantitative view of our forecasts ahead of submitting our proposal.



The table below provides more detail on each expenditure area shown in the diagram.

Capex Type	Description	Comment
Extending the network	Building new communal infrastructure to extend the coverage of the network.	UFB build ends by RP1, but activity to extend into new subdivisions is ongoing.
Connecting end customers	Direct costs of connecting new premises, including ONTs and capitalised provisioning. Also includes promoting uptake.	Demand-driven activity expected to ease gradually through RP1. Volumes uncertain, but regulatory arrangements adjust for any error.
Moving data	New and replacement access, aggregation and transport electronics, plus growth fibre.	Relatively steady rate of investment as technology gains broadly keep pace with traffic growth.
Maintaining the network	Investment to replace or extend the life of Layer 0 infrastructure, enhance resilience, or accommodate third party work (e.g. roading).	Activity relatively steady, but fibre share grows as work on shared assets increasingly allocated to fibre.
Network and customer IT	Investment to sustain, replace or enhance systems that support network and product operations.	Activity relatively steady.
Business IT	Investment in general business systems, such as financial and desktop.	Activity relatively steady, but fibre share grows as work on shared systems increasingly allocated to fibre.
Business Support	Corporate facilities, including accommodation.	Shared assets increasingly allocated to fibre.

Our fibre operating costs will also be changing

Our operating costs include the following broad categories:¹³

Opex Type	Description	Comment
Physical network	Maintenance and operating costs, including power.	Maintenance includes inspections and repairs.
Network and Customer	Non-capitalised spend on network systems, business-to-business systems, and other wholesaling operations.	
Support and governance	Corporate functions, including people, accommodation and system costs.	Includes asset management functions not captured elsewhere.

We can't show a forecast profile for fibre opex yet, but we can describe some of the key trends relevant to RP1:

- as the amount of capital work decreases, we will be capitalising less of our overhead costs
- our fibre maintenance spend will increase as connections grow, as will the portion of shared costs we allocate to fibre
- new fibre costs less to maintain than copper, so as fibre connections increase (and copper connections decrease) we are likely to see a reduction in overall physical network maintenance costs which may soften the trend described above, and
- we will be transitioning through a peak period of dual-network operation during RP1, so opportunities to optimise shared costs (e.g. for power and cooling) are likely to be limited.

¹³ We expect our proposal will present capitalised lease costs as opex. This is consistent with other regulated suppliers and ensures these costs fall within arrangements that incentivise ongoing efficiency improvement.

We're inviting input on several engagement focus areas

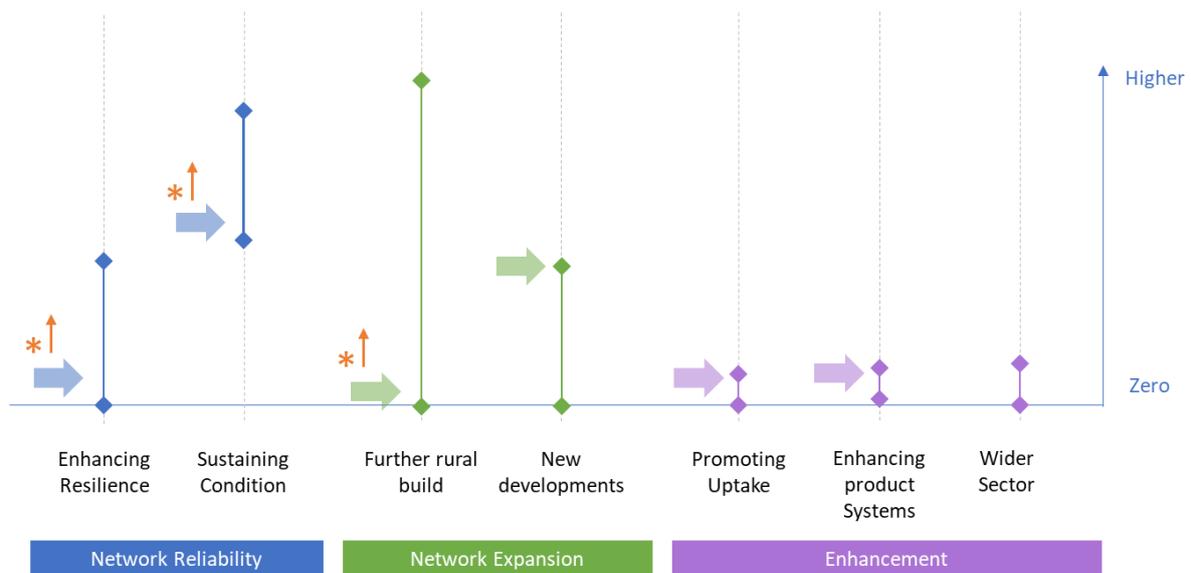
This section presents areas of expenditure with the most scope to flex our position to deliver a different price-quality trade-off.

Slider diagrams highlight key areas of discretion

The “slider” diagrams below provide an overview of our capex-related engagement focus areas. They highlight areas of our investment programme where we could realistically modify our investment direction in response to input. This means they exclude some large areas of investment, such as connecting end customers and moving data.

For each area, we show:

- an indicative view of the plausible range of investment. This is not based on a definitive assessment but is intended to provide context on the possible difference between high and low scenarios. This range is indicated by the solid bars with diamonds at each end
- arrows indicating the position that is broadly consistent with the capex profile shown earlier (where relevant). We are seeking input before firming up our RP1 plans.



* ↑ Indicates area where there may be optionality to add investment by applying for *individual capex* approval at a later date

The discussion below also covers fault response performance, which we have not attempted to represent with a slider.

Important Note:

Our investment intentions will firm over coming months, including as we consider your submissions on this paper. Our focus here is on the content of our RP1 Proposal, which will inform capex and opex envelopes for FFLAS during RP1. These:

- will adjust automatically for changes in connection volumes
- do not prevent us reprioritising as we travel through RP1
- can potentially be added to by applying for ‘individual capex’ approvals.

We’re considering how much to invest in resilience...

The table below summarises types of resilience investment. Network resilience can be thought of as a “hidden” investment category, in that it normally does not impact customer or end customer experience day to day.

Method	Description	Examples
Redundancy	Providing extra capacity or backup so connectivity is sustained if any single component or system fails (or is taken out of service, e.g. for planned works)	<ul style="list-style-type: none"> • Backup power supply • Capacity headroom • Duplicate (backup) fibre • Geographically diverse routes
Robustness	Upgrading major components or systems to reduce their risk of failure	<ul style="list-style-type: none"> • Seismic upgrades
Contingency	Putting measures in place to support rapid recovery	<ul style="list-style-type: none"> • Critical spares • Rapid response technicians

It’s generally accepted that there is a limit to how much any supplier should invest in resilience. For example, dual geographically diverse routes to every address would clearly be too much.

Because interruptions to supply are uncommon, it is difficult to gauge how much end customers are willing to pay to increase resilience (or, in other words, how much risk of major or prolonged interruption society is willing to tolerate). Recent telecommunications interruptions at Waiheke Island and Fox Glacier due to network damage have provided some insight and may point to a trend of growing community dependence on fibre.

The level of resilience in our network reflects legacy (pre UFB) standards for many shared assets and UFB build requirements for new and updated assets.¹⁴ We are not currently planning any major new

¹⁴ The primary reference for UFB build standards is Schedule 3 (Design and Build) of our 2011 Network Infrastructure Project Agreement. Schedule 5 (Service Levels) is also relevant. Clause 25 of Annexure 2 of Schedule 3 is a key clause. <https://www.crowninfrastructure.govt.nz/wp-content/uploads/2018/07/Network-Infrastructure-Project-Agreement-NIPA-24-May-2011.pdf>

programmes to address potentially growing resilience expectations, other than a relatively modest programme to expand coverage of redundant fibre routes as connections grow.

Our investment approach for building redundant transport fibre routes has been consistent with UFB contract requirements and incentives – in particular, we keep investing as connections grow to limit the maximum number of connections exposed to a single point of failure. The pace of this investment is informed by (1) deterministic standards within the UFB contract and (2) comparing our estimated exposure to penalties (for long interruptions) with the estimated cost of investment.

Key considerations:

- during RP1 we expect our main investment focus will be fibre uptake
- criteria for evaluating resilience investments under the new regulatory arrangements are not yet clear, nor is the return on investment
- resilience built into the network to date is consistent with UFB build requirements, but dependence on fibre services (and hence resilience expectations) may increase over time
- a programme of resilience investments – e.g. to accelerate build of backup fibre routes or enhance exchange robustness – could *potentially* be pursued using the individual capex mechanism.

Consultation Questions:

1. What are your views on how dependence on fibre services may be changing?
2. What are your views on how we should assess the case for resilience investments?
3. What are your views on whether UFB build requirements remain an appropriate guide?
4. What are your views on whether (or how) we should consider developing a resilience programme for later approval?

... and physical asset condition...

Our fibre network uses a mix of newly built and shared physical assets. For example, fibre strands and most ducts and pits are new. In contrast, most poles and all exchange buildings are old. The services within our exchange buildings (e.g., lighting, power, security, cooling and fire) are mostly older.

Our current investment in existing physical assets (i.e., excluding network extension and connections) is dominated by:

- relocations – mostly driven by our obligations to roading authorities to facilitate roadworks
- reactive replacement – replacing assets that have failed in-service, and
- programmed replacement – replacing assets that are reaching the end of their useful life.

Examples of other investment programmes falling prior to RP1 include:

- poles – we are nearing completion of a programme to catalogue all our poles, test their condition and replace those in the poorest state, and
- Courtenay Place exchange – we are carrying out a significant mid-life refurbishment of this major exchange in the Wellington CBD.

We are currently working with a specialist advisor to develop an asset management capability roadmap, which will help us map out changes in our systems, processes and people capability over the coming years.

As the capital demands of the build programme ease, and we implement our asset management roadmap, we expect we may identify other worthwhile proactive investment programmes. For example:

- network suppliers often invest heavily to enhance asset knowledge (e.g., of condition, build type, site conditions, degradation performance) to support their ability to optimise asset interventions
- proactive investment to relocate, reinforce or replace assets can sometimes be less costly than reacting to asset failures, and
- proactive investment to extend asset life can sometimes be less costly in the long run than a more reactive approach (but may have a long payback period).

Key considerations:

- during RP1 we expect our main investment focus will be fibre uptake
- we also expect to be transitioning through a peak period of dual network operation, and our in-field partners will be adapting to a changing work profile (with lower volumes overall)
- we are in the process of shifting our asset management focus from build to operate, and expect to be transforming and growing capability through RP1
- if we do not anticipate new proactive maintenance programmes in our RP1 Proposal then we may need to defer any such programmes to RP2
- the above would not apply if we could use the individual capex mechanism, or for programmes with a rapid breakeven profile.¹⁵

Consultation Questions:

5. What are your views on whether we should include any provision for not-yet-defined proactive maintenance programmes in our proposal?

...and whether to alter fault response performance

Fault response performance is an important consideration for our end customers.

We currently operate with a general target of restoring consumer services by the end of the day following the day on which a fault is reported to us – this is reflected in contracts with our in-field partners and specifications for our mainstream products. We offer faster target restoration times for some business products but could not extend this more widely without significant changes in our field service arrangements.

Early in RP1, we will have an opportunity to re-contract field services and re-establish performance targets. As described elsewhere, the backdrop for this will be a significant change in the mix of

¹⁵ If our arrangements include balanced incentives for opex and capex, it is more likely we can expect new proactive programmes to be self-funding through a process of incentive credits being offset by incentive debits.

in-field work and decline in work volumes as we complete current UFB communal build programmes, and as maintenance swings from copper to fibre.

We expect these changes will create a tension between cost and performance – e.g., as volumes of work in the field decline, labour utilisation rates will decrease if coverage (which enables rapid response) is held steady.

Our field services contracts span most of the country and involve multiple parties and several thousand technicians. Achieving the best balance of performance and cost across all our customers is a complex and ongoing optimisation exercise. We cannot predict reliably at this point how holding, relaxing or enhancing fault response performance into RP1 may influence costs at our next contractual reset.

Key considerations:

- with growing dependence on fibre, it is probably not appropriate to materially relax fault response timeframes
- we expect that holding current settings would be likely to produce some uplift in the cost (per job) of in-field work due to declining overall volume of activity in the field.

Consultation Questions:

6. What are your views on whether continuation of current fault response performance would be desirable?

We could invest in post-UFB extension...

We are programmed to complete our work on the government's existing UFB initiatives before the start of RP1 (i.e., before 1 July 2022).

The start of our new regulatory arrangements alters the context for future investment to extend the network. It effectively leaves open three routes:

- if we can show that network extension investment satisfies appropriate economic criteria, we can include it in our proposal. We expect this would involve considering matters such as the economic development and wider community benefits of enhanced connectivity¹⁶
- if the Crown (or another party) fully funds network extension then we do not need to include the work in our proposal but, if the new network is providing regulated services, spend on future connection and renewal (and any other work) will be regulated (and included in future proposals), or
- if we have agreed part-funding for an initiative with the Crown (or another party) then we could include the balance in our proposal (or in an individual capex proposal, if the value of the unfunded balance exceeds \$5m) provided we can show the investment satisfies appropriate economic criteria.

¹⁶ The Commerce Commission's draft Input Methodologies list capex assessment factors, but do not provide clear economic assessment criteria. We think that clearer criteria are unlikely to be developed ahead of our RP1 Proposal.

Any network extension would add to the MAR recoverable across all our FFLAS customers, while any revenue from end customers connecting to the extended network would reduce the revenue we need to recover from others.

Once we reach a state where the MAR plays a dominant role (rather than price caps) there will be a natural limit on how far it would make commercial sense for us to extend the network. However, we may also need to show that network extension meets appropriate economic criteria. These criteria are not yet clear but would involve showing that the wider societal benefits of fibre connectivity outweigh the cost (and that the net societal benefit is higher than other connectivity options).

Key considerations:

- criteria for evaluating the case for extending the network into more rural communities are not clear (nor is our regulated return on investment), but in theory we could include such investment in our RP1 proposal
- if we exclude such investment from our proposal, we could still participate in future initiatives with the Crown (or other third-party). Connection costs would automatically roll into our allowances, and future renewal (and other) costs would be reflected in future proposals (e.g., for RP2)
- a Crown-funded model could reduce the average cost per customer across FFLAS, depending on uptake.

Consultation Questions:

7. What are your views on the framework for future network extension?
8. What are your views on how the economic benefit of network extension should be assessed?
9. What are your views on the desirability of us including such investment in our RP1 Proposal?

...and new developments

In contrast to the type of network extension discussed above, it is clearly beneficial to participate in network extension into new subdivisions and other developments. This is because:

- the cost of building fibre networks into a development at the same time as other services (such as power and water) is significantly lower than later “brownfields” installations, and
- the low cost of extension means that only modest uptake is required before the revenue from such developments begins to contribute to common costs – i.e., such developments reduce the average cost of the network for all customers.

Key considerations:

- costs of connecting customers to the network in new developments would be rolled into our allowances via the connection mechanism
- other costs would only be included in our proposal to the extent they fall within the definition of FFLAS and (on draft input methodologies) would be net of capital contributions. To date, we have forecast on a gross basis so the figures represented in this paper will change as we implement the draft input methodology requirements.

Consultation Questions:

10. What are your views on the merits of including investment in developer-driven network extensions in our RP1 Proposal?

We could keep promoting fibre uptake...

Chorus has an “active wholesaler” strategy that involves promoting fibre uptake.

Connecting more customers to the network reduces the average cost per customer and will help bring forward the point when the MAR begins to restrain prices – i.e., when revenue matches costs – and prices start to decline.

Our work to promote fibre uptake includes:

- advertising
- incentive schemes and promotions, and
- active migrations (e.g., door-to-door promotion to encourage fibre installation).

We have found this activity has been effective at driving strong uptake. Connection rates are much higher than anticipated when UFB was committed, and we can see links between our initiatives and this outcome. Parts of the UFB build will not be completed until immediately prior to RP1, so RP1 will still be a time of strong connection potential.

Key considerations:

- investment to promote fibre reduces average cost per end customer
- new connections may begin to taper during RP1 but should remain a major activity as newly built areas experience early uptake and more established areas move through the later phases of transition from copper to fibre.

Consultation Questions:

11. What is your view on the optimal level of investment to promote fibre uptake?

...and sustain the pace of product development...

A material portion of our information technology (IT) investment is devoted to fibre product development. This work establishes or modifies the back-office and business-to-business systems needed to provision and operate our various product offerings. Examples include:

- establishing connections, switching retailers and changing product (e.g., to a faster connection) for mass market end customers
- business and other specialist fibre connection products, and
- industry products, such as co-location.

These investments are additional to investment in the network or the field to introduce new technologies or capabilities (such as the XGS-PON electronics that enables Hyperfibre).

Our investment in product development is informed by engagement with our customers (RSPs) and our own market research and idea generation. We work with our customers to develop a product roadmap with a horizon of up to two years. This allows us to coordinate, prioritise and deliver a pipeline of useful product developments.

The product roadmap we develop with our customers does not extend as far as RP1, because product development is a fast-paced area of investment and it would be premature (and wasted effort) to scope a work programme for years three to five.

Key considerations:

- we expect there will be ongoing demand for, and value in, continuing to enhance our product systems and their interfaces with our customers. This is supported by experience, and by continued existence of a backlog of product development work
- we are not confident that we could accelerate the pace of product development. This is because there are inherent capacity limits across the product development system – including our access to specialist resources, system access bottlenecks, and limits in the capacity for our customers to accommodate change and take products to market
- ongoing investment in product systems can help promote fibre uptake by supporting the attractiveness of fibre products.

Consultation Questions:

12. Do you have any views on the merits of continuing the current pace of product development investment in our RP1 Proposal?

...and we could invest to support an efficient sector and even better customer experience

Our other two categories of IT investment are:

- lifecycle and compliance – non-discretionary work to ensure systems remain fit for purpose (e.g., secure, supported and compatible), and
- customer experience and optimisation – discretionary investment to enhance efficiency or improve customer experience (beyond the product development investment described earlier).

We forecast that the volume of lifecycle and compliance investment will ease in coming years, largely because we are passing through a wave of investment directed at moving off many of our legacy Telecom systems (shared with Spark). This will free up some capacity for IT investment that could be directed at customer experience and optimisation work.

As with product development investment, it is not realistic to develop a detailed programme scope far into the future, but we can scope classes of investment. Of interest is how we prioritise between investments that:

- reduce our operating costs (e.g., automating manual processes) – where we include this in our proposal, we should make offsetting reductions to proposed opex

- reduce our capital costs (e.g., enhancing asset management systems) – this would flow through to our RP2 Proposal (e.g., a more optimal programme of investment in physical asset renewal)
- reduce costs for our customers (e.g., by providing self-service tools or new electronic interfaces to support automation) – in theory, such investments should flow through to lower retail prices over time, or
- enhance customer experience (e.g., by providing self-service tools and automation, or predictive fault management to reduce time to restore) – in theory, this should flow through to better retail experience over time.

Traditionally, we have focussed on investments with the best prospects of rapidly becoming cashflow positive. As we move to our new regulatory arrangements, we will have more scope in RP1 to prioritise across the full scope of investments that could deliver end customer benefits.

Key considerations:

- our change in asset management focus will drive some investment in systems, as will adapting to our new regulatory arrangements (e.g., making our next proposal richer and better supported by modelling systems). These investments should drive lower whole-of-life costs. We will form a better view on the scope of this as we complete our asset management roadmap work
- as we adapt our business to a ramp-down in build activity, we will have ongoing opportunities for adaptation and optimisation and a growing focus on ‘intact’ (as opposed to new connection) processes, and
- investing to support efficiency across the supply chain, and in enhancing customer experience, are both consistent with our focus on promoting fibre uptake.

Consultation Questions:

13. What is your view on the merits of expanding customer experience and optimisation investment in our RP1 Proposal?
14. What is your view on the merits or relative priority of us investing to help our retail customers reduce their costs or improve their customer experience?
15. What is your view on the merits and relative priority of us investing in asset management capability?

We welcome your views in other areas too

In the section above we have highlighted areas where we think there is a particular opportunity for you to help inform our proposal. We have also provided an overview of new regulatory arrangements and an overview our plans, to the extent we can given the uncertainties of a regime under development and ahead of completing our planning.

After June we plan to engage again, this time with a focus on shaping our future engagement plans.

In the meantime, we would welcome any other views that may help us to finalise our proposal or prepare for our next round of engagement. For example – is this paper clear, did workshops help, and are there other topics we should be addressing?

Consultation Questions:

16. Do you have any other views to share as we finalise our proposal?
17. Do you have any other views to share as we prepare for a further round of engagement?

Appendix – Consultation Questions

We have gathered consultation questions into the table below. A word version of this page is available on our RP1 webpage to help you prepare your submission.

Please note that we intend to publish submissions on our website alongside the consultation paper and workshop materials. If you wish to include any confidential information in your submission, please clearly identify this and provide separate public and confidential versions.

Consultation Question	Response
<i>Resilience</i>	
1. What are your views on how dependence on fibre services may be changing?	
2. What are your views on how we should assess the case for resilience investments?	
3. What are your views on whether UFB build requirements remain an appropriate guide?	
4. What are your views on whether (or how) we should consider developing a resilience programme for later approval?	
<i>Physical asset condition</i>	
5. What are your views on whether it may be more prudent to exclude not-yet-defined proactive maintenance programmes from our proposal, or to include a provision?	
<i>Fault response performance</i>	
6. What are your views on whether continuation of current fault response performance would be desirable?	
<i>Post-UFB extension</i>	
7. What are your views on the framework for future network extension?	
8. What are your views on how the economic benefit of network extension should be assessed?	
9. What are your views on the desirability of us including such investment in our RP1 Proposal?	

Consultation Question	Response
<i>New developments</i>	
10. What are your views on the merits of including investment in developer-driven network extensions in our RP1 Proposal?	
<i>Promoting fibre uptake</i>	
11. Do you have any views on the optimal level of investment to promote fibre uptake?	
<i>Product development</i>	
12. Do you have any views on the merits of continuing the current pace of product development investment in our RP1 Proposal?	
<i>Wider sector</i>	
13. What is your view on the merits of expanding customer experience and optimisation investment in our RP1 Proposal?	
14. What is your view on the merits or relative priority of us investing to help our retail customers reduce their costs or improve their customer experience?	
15. What is your view on the merits and relative priority of investing in asset management capability?	
<i>Other</i>	
16. Do you have any other views to share as we finalise our proposal?	
17. Do you have any other views to share as we prepare for a further round of engagement?	