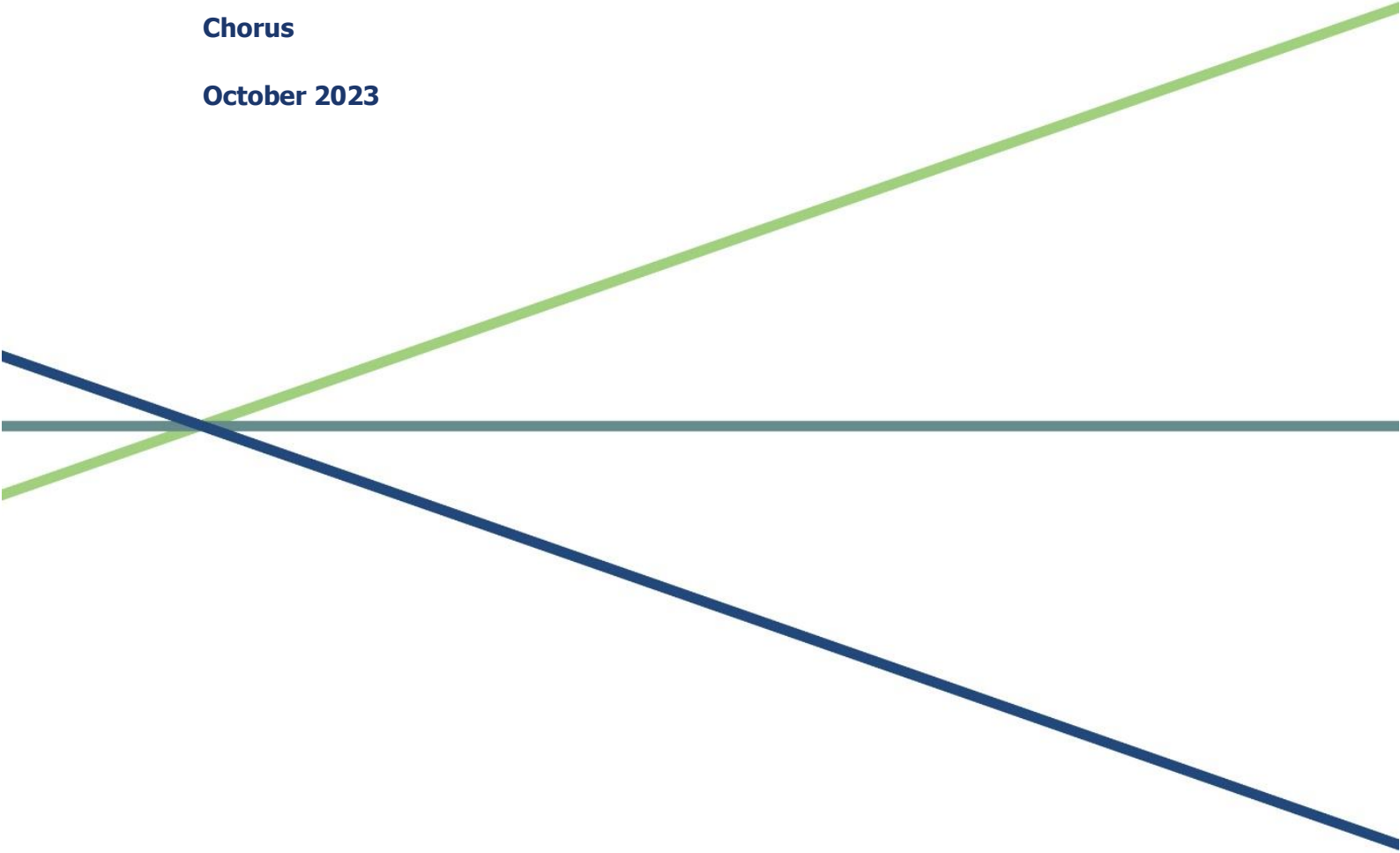


Cost allocation issues for RP2

Chorus

October 2023



Contact us:

Incenta Economic Consulting

Unit 1, 19-35 Gertrude Street

Fitzroy, Victoria, 3065

Telephone: +61 3 8514 5119

Website: www.incenta.com.au



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1. Introduction and summary

1.1 Purpose of report

1. The purpose of the report is to comment on the economic principles and regulatory framework associated with the allocation of operating expenses between fibre fixed line access services (FFLAS) and other services. The intended use of the report is to support a review of how Chorus allocated its costs for the pre-implementation period and Regulatory Period 1 (RP1) with a view to amending the allocators for Regulatory Period 2 (RP2) where appropriate.

1.2 Summary of conclusions

1.2.1 Objectives for cost allocation

2. Economic principles for allocation of operating expenditure between FFLAS and other services (principally copper services) are that:¹
 - a. each service bears at least the incremental cost that it causes (or costs that would be avoided if provision of the service ceased), and
 - b. the remainder of the cost – being the cost that would be incurred if either fibre or copper services were provided individually (i.e., the common cost) – should be allocated in a manner that is consistent with the cost being recovered across all services provided.
3. Allocating costs in this manner would achieve the Purpose Statement for regulation under Part 6 of the Telecommunications Act² as this would:
 - a. replicate the tendency (and long-term equilibrium outcome) of a workably competitive market
 - b. preserve incentives to invest in FFLAS
 - c. result in efficiency gains being shared with customers (namely, the gains from economies of scope), and
 - d. limit the capacity for excessive returns to be earned.

1.2.2 Consequent meaning for the Information Methodology requirements

4. Cost allocation is required in relation to costs that cannot be directly attributed to either service (referred to in the report as “shared costs”). Shared costs are likely to comprise a combination of costs that are incremental to a service and those that are common.

¹ This discussion relates only to the allocation of operating expenses.

² Telecommunications Act 2001, section 162.

5. It follows from the economic principles summarised above that there should be a distinct role for the causal and proxy allocators as set out in the Commission’s Information Methodologies (IMs):³
 - a. Causal allocators should be applied where the shared costs are considered likely to be costs that are incremental to the services. Costs that vary depending on the extent of activities performed for one service or another will be incremental to one service or another.
 - i. The objective for such an allocator is to reflect as closely as possible how costs are caused (i.e., the more accurate that cost causation can be captured and reflected in the allocator, the better).
 - ii. A simple example would be where a single energy bill is incurred (and so the cost is not directly attributable), but this powers fibre equipment and copper equipment, and so the incremental cost associated with each service can be derived by using relative energy use as the allocator.⁴
 - b. Proxy allocators should be used to allocate the common costs. Costs that do not vary with the level of service-specific activities are likely to be common costs.
 - i. The objective for a proxy allocation should be to allocate the cost between services in a manner that is consistent with the costs being recovered overall. “Causation” is not meaningful in relation to common costs because the costs do not vary with either the number of services provided, or the level of any service, and so logically cannot be caused.
 - ii. A simple example is the cost associated with corporate functions that are not directly attributable to, or driven by, the level of fibre or other services.
6. The proposition that cost allocation under the cost allocation IM is intended to generate an economically sensible allocation of costs – which, in turn, requires a careful distinction between the treatment of shared costs that are likely to be incremental to the services, and those that are economic common costs – is consistent with how the Commission discussed the cost allocation IM when this was first introduced for the firms regulated under Part 4 of the Commerce Act in 2010. However, we have observed alternative interpretations of the cost allocation IMs in their subsequent implementation, for example:
 - a. the discussion at times has created an impression that causal allocators should be applied for all cost items, and that it is only because of empirical challenges that this may not be possible, however this interpretation is not meaningful in relation to economic common costs, and
 - b. consistent with this, the discussion of proxy allocators has suggested that these should be a proxy for a causal allocator (i.e., as fundamentally a causal allocator, but derived

³ Commerce Commission New Zealand, 21 December 2021, Fibre Input Methodologies Determination 2020.

⁴ It is also assumed for simplicity that the price for energy is a simple \$ per MWh charge.

in a less scientific manner), rather than as something that is used where the idea of causation is not economically meaningful.

7. Having said that, as noted above, such an approach to cost allocation is most consistent with the Purpose Statement, and with the Commission’s reasons for the original cost allocation IMs.⁵
8. In addition, provided cost allocation is performed in the manner described above, then the “shared cost cap” will be met automatically.⁶
 - a. The shared cost cap limits the amount of shared cost to be allocated to FFLAS at the amount that would not be avoided if the other services (hypothetically) were not provided.
 - b. This constraint necessarily will be met if the allocation to copper (and other services) reflects at least the incremental / avoidable cost associated with those other services.

1.2.3 Implications for RP2 cost allocation

Introduction

9. The IMs require cost allocators to be reviewed at intervals of no less than 18 months, and so Chorus will need to review whether different allocators may be appropriate for RP2 compared to those applied for the pre-implementation period and RP1. In addition, the context in which the cost allocation will be undertaken, allocators for RP2 are likely to differ from the pre-implementation period and RP1 in a way that is material to cost allocation, which provides further reason for such a review. In particular:
 - a. The allocation for the pre-implementation period and RP1 was required to be done over a period spanning back to December 2011. The historical nature of the allocation limited Chorus’ ability to identify all the directly attributable costs in the various cost items, and also limited the extent of granularity that could be applied (i.e., so that cost items were likely to be mixtures of incremental and common costs). The prospective nature of the RP2 allocation permits a fuller review to distinguish directly attributable costs from shared costs, and also greater capacity to separate shared costs into those that are likely to be incremental to a service from those that are likely to be economic common costs (including by analysing costs at a more granular level).
 - b. The pre-implementation period and RP1 coincided with the roll-out of the Ultra Fast Broadband network (UFB), during which the principal focus of the business was

⁵ The drafting of the IMs means that an allocator that is intended to be causal (i.e., relating to a cost item that is likely to be incremental), but unable to be derived in a sufficiently scientific manner, will be required to be labelled a “proxy allocator”. This means that, in practice, two types of “proxy allocator” are likely, the first being those that are “proxy for a causal” allocators, and the second being allocators of economic common costs.

⁶ We addressed the relationship between cost allocation and the outcome of the shared cost cap in more detail in an earlier report: Incenta (2021), Certain cost allocation issues relevant to the IAV – report for Chorus, March, section 2 (available at: https://comcom.govt.nz/_data/assets/pdf_file/0017/253601/Incenta2C-E2809CCertain-cost-allocation-issues-relevant-to-the-IAVE2809D-March-2021.pdf).

managing the risk of the UFB rollout, which was a very large investment using a new technology. The centrality of this risk is likely to have caused additional costs in a range of cost centres / functions, including those that would largely be economic common costs where a firm is operating on a “business as usual” basis. With the roll-out now largely complete, and with the risks much better known, these abnormal costs are likely to have reduced, with the effect that the range of cost items that are economic common costs likely to have expanded.

10. A specific focus of this report is Chorus’s application of the “totex” allocator,⁷ which was applied for a range of cost items in the corporate and Chief Technology Officer (CTO) cost centres where part of the cost was likely to be “fixed”, but there was a likelihood that additional costs caused by (i.e., incremental to) FFLAS were also present. Totex was a reasonable allocator in this context because it was likely to better reflect the magnitude and timing of these abnormal costs than the principal alternatives (such as a per connection (subscriber) allocator). However, with the change in context for RP2 – and the greater capacity to separate out directly attributable costs and to divide shared costs between those that are “likely an incremental cost” and “likely an economic common cost” – a review of the use of the totex allocator is warranted.
11. In terms of the common cost allocator, in our view a revenue-based allocator would be the most consistent with overall cost recovery.
 - a. The logic behind this argument stems from the specific manner in which the (regulated) copper prices were determined, which would suggest a per connection allocator, or something that is closely aligned with this. We recommend applying a revenue-based allocator as this is correlated with connections, and is also sensitive to the FFLAS that may not have associated connections (co-location services – which are discussed further below – being an example).
 - b. There is a parallel with how the Commission requires costs to be allocated by Part 4 firms that provide multiple regulated services (i.e., electricity distribution businesses and gas distribution businesses, like Vector and Powerco). In that case, the allocation permitted to one regulated service is dependent on what is allocated to (and so recovered from) the other regulated service.⁸

Chief Technology Officer shared costs

12. Our review – based on the advice of Chorus subject matter experts – suggests that most of the Chief Technology Officer (CTO) shared costs (approximately 80 per cent) are a common cost.⁹

⁷ “Totex” refers to the total of capital expenditure and operating expenditure, and the “totex allocator” being an allocation of common costs across services in proportion to the shares of totex attributed to each service.

⁸ The same allocation rule applies in relation to Information Disclosure for the LFCs that also provide Part 4 services (like Northpower).

⁹ The discussion presented here assumes the CTO costs that are directly attributable to FFLAS or non-FFLAS have been removed to leave only the CTO shared costs. The directly attributable costs (to FFLAS and non-FFLAS combined) accounted for approximately 30 per cent of the total CTO costs.

13. In view of the dominance of common costs, we recommend applying a revenue-based allocator to the whole of the CTO shared costs. Applying a single allocator to all of the CTO shared costs – rather than seeking to allocate based upon disaggregated cost items – would also be more robust to any future changes to how Chorus chooses to deliver information technology services in the future.

Corporate shared costs

14. We recommend that Chorus apply a revenue-based allocator to the entirety of the corporate shared costs. Our basis for this is that a revenue-based allocator is:
 - a. an appropriate allocator for common costs, which are likely to comprise a majority of these costs
 - b. a reasonable proxy (and where there is no obvious preferred alternative) for the true causal allocator for the majority of the remaining (variable) costs, and
 - c. also a reasonable proxy (albeit where preferable alternatives exist) for the remainder of the cost items.
15. Applying a single allocator for corporate shared costs – rather than seeking to allocate based upon disaggregated cost items – will also be the most robust to future changes in organisational structure that may present opportunities for efficiency gains (and the least likely to present a barrier to the pursuit of those gains).

Other allocation issues

16. Chorus changed its approach to allocating the following cost items in its 2022 Information Disclosure (ID):
 - a. Co-location establishment and relinquishment costs
 - b. Customer and network operations service company management costs, and
 - c. Product sales and marketing personnel costs.
17. We have reviewed the change in allocation and consider that it meets the requirements of the IMs. In particular:
 - a. the change in relation to co-location establishment and relinquishment costs remedies an inconsistency in RP1, whereby these services were assumed to be wholly non-FFLAS; however, they may be FFLAS or non-FFLAS (and the proposed allocator – relative revenue – is the best proxy we can think of for the relative effort required for each)
 - b. the change to the allocation of customer and network operations service company management costs recognises that the service companies being managed by these staff undertake activities that are recognised as capital expenditure as well as operating expenditure, and that both streams of expenditure drive the effort required, and

- c. the change in relation to product sales and marketing (PSM) personnel costs is that more costs are being treated as directly attributable, which is the result of a review of the roles of all staff. Undertaking further, more granular analysis to extend the scope of costs that are directly attributable will improve the economic meaningfulness of the allocation and so is consistent with the IMs and the Purpose Statement.

1.3 Structure of report

18. The remainder of the report is structured as follows.
19. Chapter 2 summarises the framework relevant to cost allocation. This includes:
 - a. the Purpose Statement and requirements of the Input Methodologies
 - b. the interpretation of these requirements, having regard to economic principles
 - c. how the Commission has itself applied the principles, and
 - d. whether there is any guidance to be taken from the other regulated firms in NZ as to whether a change to allocators may be justified.
20. Chapter 3 then applies this framework to the shared costs in the CTO and Corporate business units. Brief comment is also provided on the three changes in the approach to allocation that Chorus implemented in its 2022 ID.

2. Framework for cost allocation

2.1 Regulatory requirements

2.1.1 Purpose statement

Requirements

21. The Purpose Statement for the regulatory framework is as follows:¹⁰

The purpose of this Part is to promote the long-term benefit of end-users in markets for fibre fixed line access services by promoting outcomes that are consistent with outcomes produced in workably competitive markets so that regulated fibre service providers—

- (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and*
- (b) have incentives to improve efficiency and supply fibre fixed line access services of a quality that reflects end-user demands; and*
- (c) allow end-users to share the benefits of efficiency gains in the supply of fibre fixed line access services, including through lower prices; and*
- (d) are limited in their ability to extract excessive profits.*

Comment

22. The meaning of this clause has been discussed at length previously, and so we just observe here that it contains:
- a. an ultimate objective of promoting the long-term benefit of end-users of fibre fixed line services
 - b. a direction that this objective be achieved by promoting outcomes that are consistent with outcomes produced in workably competitive markets, and
 - c. a specification of the outcomes that should be pursued, namely incentives for investment and innovation, incentives to improve efficiency, sharing with end-users the benefits of efficiency gains, and to limit the ability of suppliers to extract excessive profits.
23. These are all outcomes that are economic concepts, and so we expand on what the Purpose Statement means in practice below.

¹⁰ Telecommunications Act 2001, section 162.

2.1.2 Input Methodologies on cost allocation

Requirements

24. The requirements of the Input Methodologies for cost allocation are that:
- a. any cost that can be directly attributed to a particular activity must be attributed to that activity,¹¹ and
 - b. for the remainder of the costs (the “costs ... not directly attributable”, which we will refer to as the “shared costs”) an “accounting-based allocation approach” must be applied.¹²

25. The essence of the accounting-based allocation approach is that shared costs must be allocated according to cost allocators, for which there are three further requirements.
- a. First, there is a requirement for costs to be allocated on a causal basis where possible, which must also be “objectively justifiable and demonstrably reasonable”.¹³ The definition of *causal* in this context is as follows:¹⁴

[in relation to] operating costs, a circumstance in which a cost driver leads to an operating cost being incurred during the 12-month period terminating on the last day of the disclosure year in respect of which the cost allocation is carried out;

[which is] consistent with similar circumstances, both within a disclosure year and from year to year; and objectively justifiable and demonstrably reasonable.

- b. Secondly, where a causal allocator cannot be found, a proxy cost allocator is to be applied, with a further requirement to explain why a causal relationship cannot be established and for the proxy to be justified.¹⁵ A proxy allocation is defined as a ratio:¹⁶

used to allocate operating costs for which a causal relationship cannot be established ... whose quantum is based on factors in existence during the 12-month period terminating on the last day of the most recent disclosure year in respect of which the cost allocation is carried out,

[and] is consistent with similar measures, both within a disclosure year and from year to year [and] is objectively justifiable and demonstrably reasonable.

¹¹ IMs, Clause 2.1.1(2), (3).

¹² IMs, Clause 2.1.1(4).

¹³ IMs, Clause 2.1.3(2).

¹⁴ IMs, Clause 1.1.4(2).

¹⁵ IMs, clause 2.1.3(2).

¹⁶ IMs, clause 1.1.4(2).

26. In addition, the IMs place an upper limit on the amount of cost that can be allocated to FFLAS as the amount that would be unavoidable if other services were not provided, as follows:¹⁷
- (5) *Subject to subclause (6), when a regulated provider allocates ... an operating cost that is not directly attributable to [FFLAS], the total ... operating costs allocated to [FFLAS] must not be more than the total ... operating costs that the regulated provider could not have avoided if it ceased supplying services that are not regulated FFLAS.*
 - (6) *Subclause (5) only applies to an allocation or allocations of ... an operating cost that would have a material effect on the total ... operating costs allocated to [FFLAS], and for which some of the ... operating cost was allocated to services that are not regulated FFLAS.*
27. In addition, there are additional requirements in relation to allocations, including that:¹⁸
- a. allocator quantities must be reviewed every 12 months, and the choice of allocators must be reviewed every 18 months, and
 - b. there is a requirement to apply the same allocators for ID as have been applied for PQ regulation unless it can be shown that applying the alternative allocator is “objectively justifiable and demonstrably reasonable”.

Comment

28. Several observations can be made about these provisions.
- a. First, all allocators are required to be “objectively justifiable and demonstrably reasonable”. It is assumed in this report that the principal guidance against which the justifiability and reasonableness of the allocators is to be judged is the Purpose Statement, together with factual evidence.
 - b. Secondly, whilst the concept of a causal allocator is fairly clear, there is no clear statement about what a proxy allocator is supposed to represent (i.e., the objective for the allocator). The name suggests that it may be intended to be a proxy for something (e.g., in the case where the something cannot be measured); however, this is unstated and, as discussed below in section 2.2, does not always make economic sense.
 - c. Thirdly, whilst the IMs appear to intend that there be some inertia in the choice of allocators, changes to allocators over time clearly is intended. That is, there is a positive obligation to review allocators every 18 months, even though there is also a requirement for consistency over time (and across allocators at a point in time) and a requirement to justify changes to allocators applied for ID compared to those that had been applied for the prevailing PQ decision.

¹⁷ IMs, Clauses 2.1.3(5) and (6).

¹⁸ IMs, clause 2.1.3.

- d. Fourthly, in relation to the shared cost cap, whilst there is some uncertainty as to how this clause is to apply to assets, for operating expenditure it has a fairly simple economic interpretation. That is, the clause requires that the minimum allocation of operating costs to non-FFLAS activities must be the incremental / avoidable cost of the non-FFLAS activities.¹⁹ This is consistent with the standard economic principles for cost allocation, discussed below.
- e. Fifthly, there is nothing in the IMs that deal expressly with how regulated businesses should capture their costs,²⁰ which in turn drives the extent of cost that is directly attributable to an activity (e.g., FFLAS). There would appear to be an underlying assumption in the IMs that a greater degree of direct attribution is better, but no rules governing the extent of direct attribution, or rules governing changes to the extent of direct attribution.

2.2 Economic principles and cost allocation

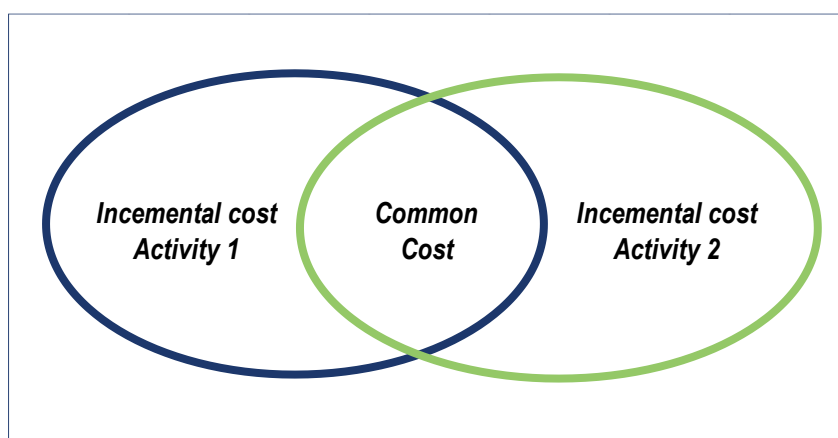
2.2.1 Economic cost concepts

29. The economic principles for allocating costs between the services of a multi-product firm start with the concept that there are three categories of costs:
 - a. the costs that would be incurred when expanding to provide an additional service, or avoided if provision of that additional service ceased – these are referred to here as the **incremental or avoidable costs**
 - b. the costs that would be incurred if any service was provided, and would not change if an additional service was provided – these are the **common costs**, and
 - c. the costs that would be incurred in total if an additional service was provided in isolation – these are the **stand-alone costs**.
30. The issue that creates difficulties with cost allocation is where there is a material common cost, and hence a reduction in the average of this cost across all services when an additional service is provided (an “economy of scope”), which is illustrated in Figure 1 below.

¹⁹ As the clause applies only to shared costs (as costs that are directly attributable to non-FFLAS would be attributed to non-FFLAS), this means that the minimum allocation of a particular shared cost to non-FFLAS activities is the portion of the shared cost that is incremental to (or avoided by not undertaking) the non-FFLAS activities.

²⁰ We refer here to the capture of operating expenditure. There are minimum requirements about the capture of information in relation to RAB assets (IMs, Schedule A).

Figure 1 – Economic cost concepts



31. In this figure, the blue and green ovals show the stand-alone cost of undertaking each activity, but further that there is a cost-saving²¹ – the common cost shown in the centre – from undertaking the services in combination.
32. The concept of fixed costs is also relevant to understanding the nature of the costs discussed above.
 - a. Incremental or avoidable costs could be either variable costs (i.e., vary with the level of output) or fixed costs (i.e., are incurred in a constant amount to provide any quantity of service), but if fixed they must be specific to the service in question.
 - b. Common costs must be fixed costs, or at least costs that would not change if the quantity of all services changed materially (e.g., doubled).²² If costs vary with the quantity of services, then they would be incremental to at least one of the activities.

2.2.2 Implications of economic principles for cost allocation

33. The implications of economic principles for allocating costs between services of a multi-product firm are well-established.²³

²¹ That is, if the services were undertaken by two separate firms in isolation, the common cost would need to be incurred twice, whereas it would only be incurred once if provided within a single firm.

²² That is, as a firm increased in size it may go from using excel for its financial accounts to Xero and then to a fully-integrated SAP system, but once the latter was installed there would be capacity to expand substantially, including through undertaking a different activity, with little change to cost (the costs incurred to implement the modify the systems to add the new activity would be incremental costs for that new activity).

²³ The discussion here deals with operating expenditure, which is more straightforward. The implication of economic principles for RAB assets is not as straightforward given that many assets of infrastructure firms are economically sunk. Thus, debates then arise as to whether avoidable cost should reflect costs that would have been avoided if a service had never been provided (an extreme hypothetical concept), or costs that could be avoided in real life if a provider hypothetically ceased providing a service (while still hypothetical, reflecting a course of action that would be open to the regulated business).

- a. First, each service should bear at least the incremental or avoidable cost of providing the service. This is to avoid any service subsidising (or being subsidised by) other services, which would not persist in long run equilibrium in a competitive market.
 - b. Secondly, each service should bear at most the stand-alone cost of providing the service.
 - c. Thirdly, the firm should recover the cost of delivering all of its services in combination overall. In relation to the residual remaining after the incremental or avoidable cost – i.e., the common cost – this means that these costs should be recovered (but only recovered once) across all services.²⁴ This is because, if the firm did not recover all of its costs overall then firms would exit (and this would continue until prices increased and all costs could be recovered), but equally if a firm recovered more than its cost overall then entry would occur until prices decreased so that these costs were just recovered once.
34. Several inferences can be drawn from this third principle.
- a. First, if the unregulated services are provided in a competitive market, then regard should be had to the amount of cost that it is actually possible to recover from those services in the situation where prices are determined by competitive forces. This concern about needing to accommodate the needs of services in competitive markets was the Commission’s reason to permit an “optional variation to an accounting based allocation approach” for certain services.
 - b. Secondly, where both activities are provided in markets where prices are set according to the building block approach (and not by competitive market forces), then costs can simply be allocated between the activities in any manner thought reasonable, and it will follow that cost is recovered in total, but only once overall. This is the Commission’s approach for the Part 4 regulated firms (i.e., the gas and electricity businesses) and between the fibre providers that also provide Part 4 services.
 - c. Thirdly, the position of Chorus is similar to the firms that operate multiple building block regulated activities in that the amount of cost that Chorus is able to recover from its other activities (principally copper) is constrained by regulation. However, the difficulty is that the amount of cost that Chorus is able to recover from those other regulated services cannot be simply observed and cannot be changed, given that those prices were not actually determined by a building block method but rather are a CPI-escalated version of prices originally determined according to a total service long-run incremental cost (TSLRIC) method. What this does suggest, however, is that a guiding principle for how Chorus’s economic common costs should be allocated is

²⁴ The Commission also observed when deriving the original cost allocation IMs that, in a workably competitive market with multiproduct firms, common costs would be recovered from the different products/services according to the inverse of the demand elasticity of those different products/services. The Commission used this observation to suggest that it would be inconsistent with the outcome of a workably competitive market for any particular service not to bear at least some of the common cost (i.e., this was a reason to preclude the “avoidable cost allocation method”).

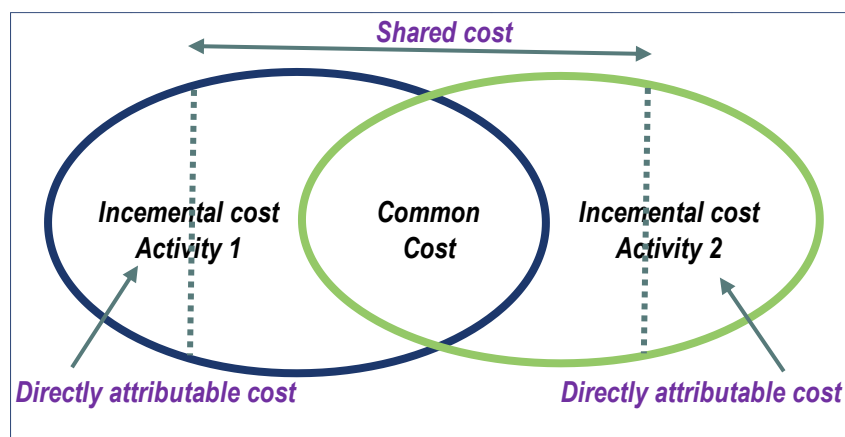
to be consistent with those costs being recovered overall (but only recovered once). We argue below that a revenue-based allocation would be appropriate for this task.

35. In terms of the requirements of the Purpose Statement, allocating costs in a manner consistent with the above economic principles would result in:
- a. an outcome that reflects what would be observed in a competitive market (or at least the hypothetical outcome of one in long run equilibrium) as such an outcome is consistent with the firm being sustainable whilst not attracting entry by a competitor providing any service or the bundle of services overall
 - b. an incentive to invest in fibre (section 162(a)) because such services would recover at least their incremental costs
 - c. customers receiving a share of efficiency gains that result from realising economies of scope where some of the common cost is allocated to other services (section 162(c))
 - d. a regulated business being limited in its ability to make excessive profits (section 162(d)) as the cost base excludes any costs that are not required to provide the service (the costs that are incremental to other services), and would allocate common costs in a manner that permits their recovery, but not over-recovery, and
 - e. in the Commission's parlance, the regime would deliver an expected real NPV=0 outcome for the regulated services.

2.2.3 Applying the Input Methodologies in a manner that promotes the Purpose Statement

36. The Input Methodologies are a practical instruction as to how to allocate costs between services, and so for this reason the instructions are framed in terms of accounting cost concepts, namely in terms of costs that are directly attributable to the service, and those that are not directly attributable. The starting point is the cost items that are collected by the firm in its general ledger, and a cost is deemed to be directly attributable if it is exclusively and wholly related with an object (i.e., an activity).
37. At an aggregate level, the costs that cannot be directly attributable to either service – which we refer here to as the “shared costs” – are likely to comprise a mixture of items that are incremental to both activities as well as economic common costs. The relationship between economic and accounting concepts of cost at an aggregate level is shown in Figure 2 below.

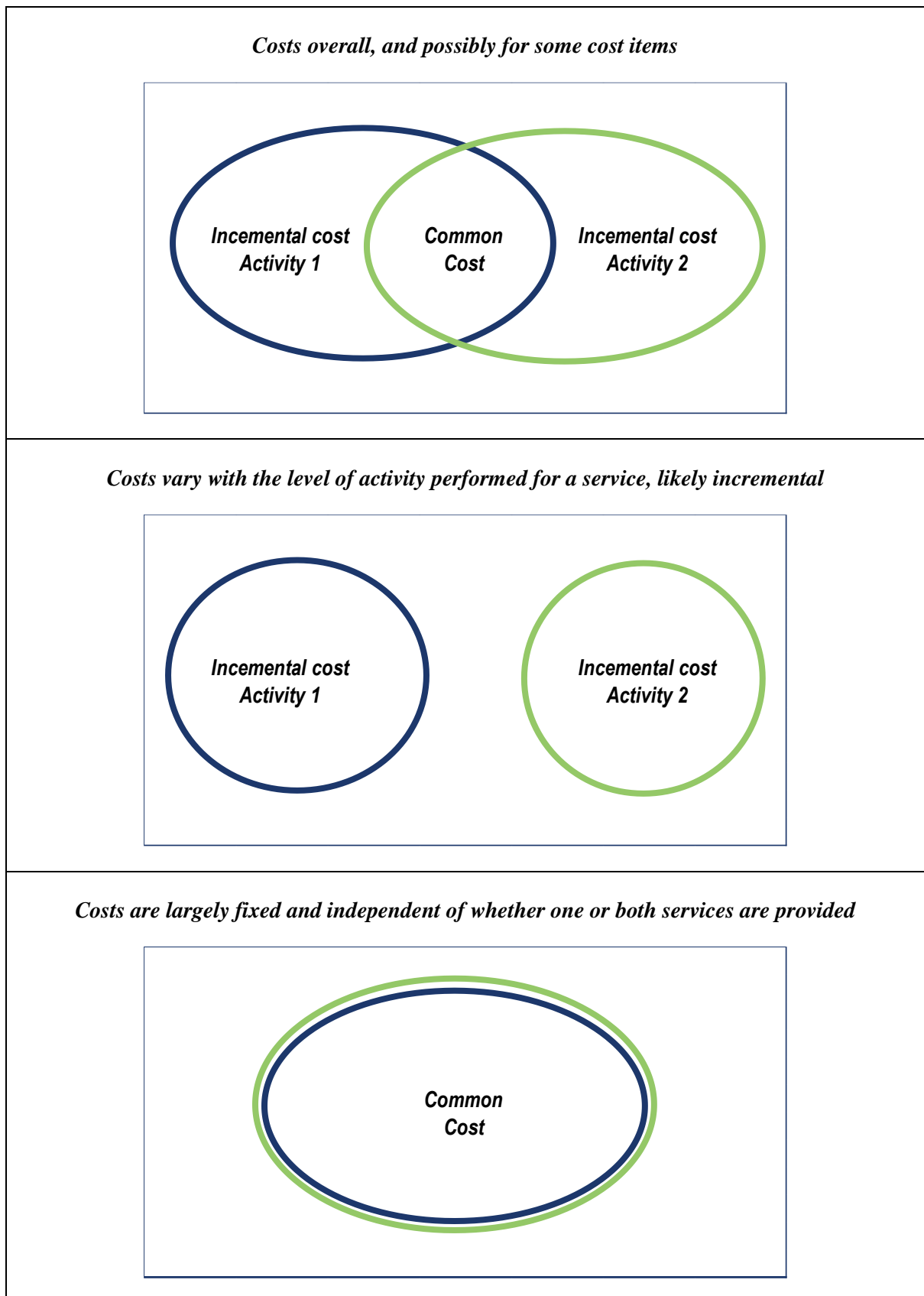
Figure 2 – Relationship between economic and accounting concepts of cost (measured at an aggregate level)



38. However, two further steps may be undertaken to reduce the difficulty of the cost allocation exercise.
- a. First, the extent of cost items that are found to be directly attributable will depend on the granularity with which cost information is collected and analysed. Collecting and analysing costs at a more granular level reduces the incremental cost that remains in the shared cost category that then needs to be apportioned to each service by allocation.
 - b. Secondly, Figure 2 (and Figure 1, upon which it was based) is likely to represent the position of Chorus' shared costs overall. However, if costs are analysed at a sufficiently disaggregated level, then it may be possible to distinguish costs that are likely to be incremental to the activities from the costs that are likely to be economic common costs. As discussed earlier, the extent to which a particular (shared) cost item is variable is likely to be a good indicator of whether that cost item comprises costs that are incremental to the services or comprising economic common costs. That is:
 - i. where costs vary directly or indirectly with the activities that are undertaken to provide a particular service, the costs are likely to be incremental to the services, and
 - ii. where costs are unaffected by the level of activity undertaken to provide each service, these costs are likely to be economic common costs.²⁵
39. The possible outcomes where costs are analysed at a more disaggregated level are shown in Figure 3 below.

²⁵ It is possible that there are costs that are largely fixed (i.e., independent of the level of activities performed to provide fibre or copper services), but nonetheless are incremental to one of the activities. However, it is more likely that such costs would be directly attributable and so outside of the shared bucket.

Figure 3 – Analysis at the level of individual cost items



40. One class of costs to be aware of are internal service centres, which are those activities that perform services for other parts of Chorus, rather than providing the outputs (i.e., FFLAS or non-FFLAS) directly. The level of activity that is performed by these internal service centres may vary directly with the level of activity of its client areas (i.e., be variable), and so how the internal service centre costs are allocated will depend on the nature of the client activities.²⁶

2.3 Cost allocation practice by the Part 4 firms

41. The cost allocation requirements for FFLAS are very similar to those for the firms that are regulated under Part 4 of the Commerce Act, and hence precedents from those sectors would serve as guidance for Chorus. The specific inquiry that we have made is whether the reasons that Part 4 firms have provided for changing allocators provide any insight for Chorus.
42. It is important to recognise, however, that cost allocation is not equally relevant for all of the firms the Commission regulates. For cost allocation to arise as an issue at all, a firm must provide material activities aside the regulated activity, and for the most significant regulatory issues to arise there must be material sharing of costs with activities that are not also regulated under Part 4.
43. Having said that, the main theme to be drawn from the other sectors is that:
 - a. only minimal changes have been made to cost allocation reported in information disclosure, and
 - b. where reasons have been provided, they have been very brief.
44. We summarise the outcomes in these other sectors in Appendix A.

²⁶ Note that this reflects how Chorus's internal service centre costs were allocated for the pre-implementation period and RP1, and so this principle does not imply any change from existing practice.

3. Reviewing the use of the Totex allocator and other RP2 allocation issues

3.1 Original justification for totex, and rationale for a review

45. Chorus is required to review its choice of allocators no less frequently than every 18 months, against the requirements of the Input Methodologies. The discussion above sets out the principles against which the allocators should be assessed. Applying these principles involves questions of whether costs vary with the level of FFLAS or copper activity or are essentially fixed, and for the variable costs, the precise driver (or cause) of costs.
46. For the pre-implementation period and for RP1, the totex allocator was used for a range of CTO and corporate cost categories where costs could not be directly allocated, and where specific cost drivers could not be identified. A report that we prepared pointed out that a per connection allocation would leave Chorus undercompensated where the provision of FFLAS caused costs to increase compared to a copper-only business.²⁷
47. We note that Chorus was required (for the pre-implementation period) to allocate costs over a historical period of around 10 years, meaning there is a likelihood that shared cost items included costs that, had it been possible to collect more information, may have been directly attributable to FFLAS. The context for the allocation was very important.
 - a. The pre-implementation period allocation corresponded to the UFB rollout period, where the principal focus of the company was on managing the risks of the rollout.
 - b. It was expected that the need to manage this very large and new risk would have caused additional costs to be caused across a range of business areas, including those that would ordinarily be considered principally an economic common cost for a firm operating on a “business as usual” basis.²⁸ None of this additional cost would have been caused by the copper business. The use of totex as an allocator had the effect of allocating more of this shared cost to FFLAS, consistent with FFLAS having caused material cost.
48. The situation has now changed so that a review of the use of the totex allocator is warranted.
 - a. First, now that the rollout period has largely passed, the effort required to manage the rollout risk is lower, and so the resources applied to risk management have been redeployed. In addition, the focus of the business has changed to optimising the use of

²⁷ Incenta (2021), Certain cost allocation issues relevant to the IAV – report for Chorus, March, section 3 (available at: https://comcom.govt.nz/_data/assets/pdf_file/0017/253601/Incenta2C-E2809CCertain-cost-allocation-issues-relevant-to-the-IAVE2809D-March-2021.pdf).

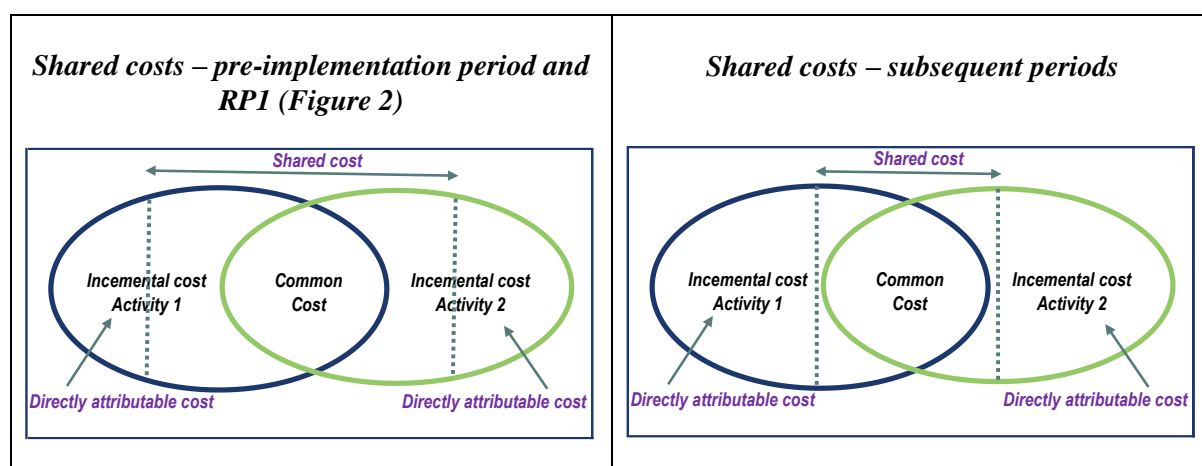
²⁸ Even so, because risk management ordinarily occurs before expenditure, the totex allocator may have under-allocated these new costs to FFLAS. Thus, it is plausible that the totex allocator under-allocated the new variable costs to FFLAS, but over-allocated the fixed costs, and so was approximately correct overall.

the UFB network, and so the activities required for FFLAS are now much more similar to the activities required for the copper service.

- b. Secondly, as the allocation is now being applied to current and future periods, Chorus has the capacity to use accounting records and other business information to attribute more costs directly to either FFLAS or copper. Thus, there should be a much lower risk that the shared costs include costs that would more properly be directly attributable to one service or the other.

49. In terms of the discussion in section 2.2.3, with greater capacity stability in Chorus’s activities and capacity to attribute costs directly to services, it would be expected that the extent of the incremental cost that is contained in the shared costs for certain cost items would fall, as illustrated in Figure 4 below.

Figure 4 – Shared costs in the pre-implementation period and RP1 compared to subsequent periods



50. In short, in the cases where totex was employed as an allocator, a review is warranted to establish:
- a. whether there are more costs that can be directly attributed to one or the other of the services, and so reduce the extent of cost items that are determined to be partly incremental and partly common
 - b. whether the remaining costs for a particular item are variable in the manner that we have explained earlier in this report and, if so, whether totex remains the best proxy for the driver this cost, and
 - c. whether the remaining costs for a particular item are fixed (common) and, if so, whether totex is an appropriate allocator for these costs.
51. We first turn to this final point – namely the best allocator for common costs.

3.2 Best allocator for economic common costs from RP2

52. As discussed above, the objective for the proxy allocator should be to allocate the common costs in a manner that permits them to be recovered overall. The principal allocation in this regard is between FFLAS and copper services.
53. The critical issue when deciding how costs should be allocated between FFLAS and non-FFLAS (principally copper) is the extent of the common costs that it is reasonable to assume can be recovered for the copper services, which in turn depends on how the regulated copper prices were determined. In our view, the method that was applied to determine the copper prices suggests that the starting point for the common cost allocator should be a per subscriber allocation. The logic for applying this allocator is that:
- a. the prices for copper services were set by calculating the cost of constructing a new network to service the entire population, and then dividing by total customers to derive the price, so that
 - b. the share of common costs recovered through copper would be equal to the share of customers that remain on the copper network.²⁹
54. However, there are shortcomings to using a per subscriber allocation, and these shortcomings may become more severe over time. A per subscriber allocation implicitly assumes that all services have an associated subscriber, and the service in question is homogeneous. However, Chorus sells a material amount of FFLAS and non-FFLAS services that do not have an associated subscriber and the non-homogeneity of services to subscribers could increase in the future if extensive bypass of Chorus' layer 2 equipment occurred and sales of PONFAS increased in tandem.
55. An allocator that is expected to be a close proxy for relative subscribers, but that addresses the issues raised above is a revenue-based allocator. That is, a revenue-based allocator would automatically include non-subscriber services when calculating the implicit recovery of common costs, and automatically address the potential for the nature of services to change over time.
56. Compared to totex, revenue (or subscribers) is likely to be more indicative of the amount of common cost that can be recovered from copper against fibre. The revenue from copper reflects prices that were based on a measure of cost a particular point in time (i.e., at the time the Final Pricing Principle was determined), but those prices now are fixed (save for escalation for CPI). Thus, there is no reason to expect there to be a clear relationship between the extent of common cost that Chorus is able to recover from copper services and the current expenditure level in the copper business.

²⁹ This ignores the fact that the cost bases for FPP and FFLAS were quite different (the former being an optimised cost and the latter an actual cost); however, attempting to adjust for the differences in the cost bases *in either direction* could be argued to have the effect of unwinding the intent of the FPP decision.

3.3 Review of the allocation of shared costs in the Chief Technology Officer business unit

57. Subject matter experts in the CTO business unit were asked to identify by each shared cost item which were approximately fixed,³⁰ and which were either variable or partly variable. This activity was undertaken by WBS code broken down further into the separate cost elements, which yielded 123 separate cost items (after discontinuing systems and anything directly attributed to FFLAS or non-FFLAS were excluded).
58. The concepts of fixed and variable were explained as follows:
- a. *Fixed* – meaning that costs would remain materially unchanged if the level of activity within Chorus (and so the use of the relevant IT system)³¹ changed by a material amount
 - b. *Variable* – meaning that the costs increase or decrease (at least in approximate terms) with a measurable driver (such as the number of users allocated/approved for a particular system), and
 - c. *Partly fixed / partly variable (semi-variable)* – meaning that a material change in usage would result in a change in cost, but a less-than-proportionate change.
59. For those items that were determined to be partly fixed and partly variable, the subject matter expert was also asked to express a qualitative opinion as to whether the fixed component was “low”, “medium” or “high”. Again, this classification was to be based upon the extent to which costs moved less than proportionately with a change in some measure of activity within Chorus.
60. This exercise found that only a small proportion of the costs were likely variable (6.5 per cent),³² whereas almost half (46.1 per cent) were indicated to be completely fixed. Our review of the reasons for the classifications corroborated the choices: the variable cost items were all items where licence fees or similar charges were based on the number of users (so that a linear change in the fee would occur with a change in activity), and the fixed fees were dominated by either fixed software licence and/or maintenance costs, or fixed contractual amounts payable for use of legacy systems.
61. The partly fixed / partly variable cost items accounted for approximately half (47.4 per cent) of costs and were determined to be mostly fixed, with those with a “high” fixed component accounting for 81.7 per cent of the total and those with a “medium” fixed

³⁰ The discussion presented here assumes the costs that are directly attributable to FFLAS or non-FFLAS have been removed to leave only the shared costs. The directly attributable costs (to FFLAS and non-FFLAS combined) accounted for approximately 30 per cent of the total.

³¹ To be clear, some IT costs would change depending on choices made by Chorus with respect to the delivery of IT services, but which are unrelated to the level of activity performed for FFLAS or non-FFLAS services (for example, cloud computing costs would increase if additional servers were transferred from physical assets to the cloud). As these costs do not vary with FFLAS or non-FFLAS outputs, they are fixed costs within the definition of that concept applied in this report.

³² The proportions are based on the current business plan forecasts for FY2025 to FY2028, representing the years of RP2.

component accounting for the remainder (18.3 per cent, none were determined to have a “low” fixed component). If a “high” fixed component is (arbitrarily) assumed to imply a 75 per cent fixed component, and “medium” to imply a 50 per cent fixed component, then this classification implies an overall proportion of fixed costs of approximately 80 per cent, with the variable costs of 20 per cent.

62. In our view, the dominance of common costs in the CTO shared costs justifies applying the common cost allocator (i.e., a revenue-based allocator) to the whole of these costs. This approach to allocation would also be most robust to changes in how CTO chooses to deliver its activities over time (i.e., it is not based on the nature of existing contractual agreements, etc.).
63. The alternative would be to attempt to apply a different driver to the variable component of costs (i.e., around 20 per cent of the total). However, this task would be complex as some of the drivers may be hard to derive,³³ and this approach would also be sensitive to changes in how CTO delivers its services. We do not think this approach would better meet the IMs and Purpose Statement.

3.4 Review of the allocation of shared costs in the corporate business unit

64. We have formed views on cost allocation for the shared costs in the corporate business unit by:
 - a. breaking the functions of the corporate business unit shared costs into the most meaningful sub-functions (based on the organisation chart), and
 - b. understanding the drivers of the cost in each of those sub-functions, which has been informed by discussions with the relevant business unit finance manager.
65. Our findings in relation to the various sub-functions that comprise the corporate business unit are set out in Appendix B, which can be summarised as follows.
 - a. The majority of the sub-functions are likely to be common costs, and for which we have recommended using a revenue-based allocator to allocate between FFLAS and non-FFLAS.
 - b. The remaining sub-functions comprise costs that are likely to depend on the effort that is devoted to FFLAS and non-FFLAS, and in relation to these:
 - i. for the majority, a revenue-based allocator is also a reasonable proxy for the unobserved causal allocator (or, alternatively, would be the best estimate of the true causal allocator), and
 - ii. whilst in the remainder it may be possible to derive a better proxy for the true underlying cause of costs (for example, relative staff numbers in relation to

³³ For example, there are a number of cost items that are sensitive to the extent of computations or data storage.

personnel costs, and relative transactions in relation to certain finance roles) the shares of revenue would also be expected to provide a reasonable proxy.

66. When considering the approach in relation to cost allocation, there may be some advantage in ensuring that the allocation method is, to the extent possible, robust to changes in how Chorus chooses to structure itself over time. The changing nature of Chorus's overall activities as FFLAS replaces non-FFLAS services makes it likely that reorganisations may yield efficiency gains. There is a high potential that, if the allocation is based on cost items considered at too disaggregated a level, the allocation method will need to be reviewed with each reorganisation, or worse may present a barrier to the pursuit of efficiency gains.
67. In view of this consideration, we recommend simply applying the revenue-based allocator to the entirety of the corporate shared costs, noting that this reflects the fact that the revenue-based allocator is:
 - a. an appropriate allocator for common costs, which are likely to comprise a majority of these costs
 - b. a reasonable proxy (and where there is no obvious preferred alternative) for the true causal allocator for the majority of the remaining (variable) costs, and
 - c. also a reasonable proxy (albeit where preferable alternatives might exist) for the remainder of the cost items.

4. Other allocation issues for RP2

68. We also have examined three further cost allocation matters that were incorporated into ID reporting for 2022, which were in relation to:
- a. Co-location establishment and relinquishment costs
 - b. Customer and network operations service company management costs, and
 - c. The allocation of product sales and marketing personnel costs.
69. A summary of our advice on these matters is provided in turn below.

4.1 Co-location establishment and relinquishment costs

4.1.1 The issue

70. Co-location establishment and relinquishment costs were previously treated as directly attributable to non-FFLAS. However, these services can be either FFLAS or non-FFLAS services. Chorus proposes to allocate the costs in proportion to the share of revenue of FFLAS compared to non-FFLAS.

4.1.2 Our advice

71. As co-location services can be either FFLAS or non-FFLAS, it is self-evident that the establishment and relinquishment activities for these services cannot be directly attributable,³⁴ and so must, under the IMs, be treated as shared and allocated.
72. For the allocator, the true driver of cost will be the effort required to make an area available for a service, and to remediate when a service ends, between different co-location services. However, because of the large number of small services, a direct attribution of cost would be complex and not warranted by any benefit of allocative precision. Relative revenue from the charges for co-location services, as proposed, would be a reasonable proxy for this relative effort, and we cannot think of a better proxy.

4.2 Customer and network operations service company management costs

4.2.1 The issue

73. A range of costs associated with the management of service companies and related activities were previously allocated by an allocator referred to as “service company overheads”, which largely reflected the FFLAS vs non-FFLAS maintenance activities undertaken by the service companies. However, the service company activities that are

³⁴ Noting here that the costs associated with the activities in question are not captured separately where the associated service is FFLAS or non-FFLAS. The decision to treat the services as directly attributable followed an initial view that all co-location services would be treated as non-FFLAS, whereas the Commission’s subsequent decision was to treat some co-location services as within FFLAS.

managed by this part of Chorus comprise all the service company activities, which includes capital projects. Accordingly, Chorus proposes to change the allocator to one that reflects the FFLAS versus non FFLAS total activities (i.e., operating + capital) of the service companies.

4.2.2 Our advice

74. The correct causal allocator for these activities is one that reflects the relative effort of CNO staff in managing contracts with service companies, which will be a function of the size and complexity of the supervisory task, which is unobservable. In our view, the size of the (total) expenditure undertaken by the service companies would provide a reasonable proxy for estimating this relative effort, and this would be superior to an allocator based on maintenance activities alone.

4.3 Product, sales and marketing (PSM) personnel costs

4.3.1 The issue

75. Chorus has undertaken a review of the roles in PSM and identified some roles that are exclusively related to either FFLAS or non-FFLAS activities. Chorus proposes to treat these costs as directly attributable to either FFLAS or non-FFLAS, which has the effect of reducing the amount of costs that need to be allocated via a cost allocator. No change to the allocator for shared costs is proposed.

4.3.2 Our advice

76. We observe that Chorus has assessed whether the different roles in the PSM business unit are directly attributable by asking staff whether there are roles that are either wholly and exclusively FFLAS or wholly and exclusively non-FFLAS, which is consistent with the IM definition of directly attributable.
77. We note that only a small number of directly attributable roles were identified, being either product managers that were specific to a technology or staff in specific marketing roles (namely, the campaign manager of direct to consumers for fibre). The result is 19 staff directly attributable to FFLAS, 1 to non FFLAS (copper) and the vast majority (91) shared. The shared costs include all the sales team, the majority of marketing, all data analysts, most of the product development team, all of the industry relations team, and all of customer experience staff. Introducing direct attribution of costs for a small number of roles is unlikely to make a material change to the total amount of cost allocated to FFLAS. However, where better information enables more direct attribution, this is consistent with the IMs and Purpose Statement.

A. Precedents for cost allocation from the Part 4 sectors

A.1 Changes in cost allocation by EDBs

78. The EDBs have made very few changes to their cost allocators – only 40 in total across the 29 EDBs aggregated across the 9 disclosure years between 2013 and 2021.

Figure 5 – All disclosed changes to cost allocation between DY13 and DY21

EDB	Disclosure year	Cost item	Change in allocator	Effect of change (\$'000)	% shared	% total opex
Alpine Energy	2013	Labour	Allocation from ABAA to ACAM	-198	n/a	-1.61%
Alpine Energy	2013	Plant	Allocation from ABAA to ACAM	-2	n/a	-0.01%
Alpine Energy	2013	Premises	Allocation from ABAA to ACAM	-33	n/a	-0.27%
Alpine Energy	2013	Computers	Allocation from ABAA to ACAM	-19	n/a	-0.15%
Alpine Energy	2013	Communications	Allocation from ABAA to ACAM	-6	n/a	-0.05%
Alpine Energy	2013	Subscriptions and Fees	Allocation from ABAA to ACAM	-2	n/a	-0.02%
Alpine Energy	2013	General Expenses	Allocation from ABAA to ACAM	-155	n/a	-1.26%
Alpine Energy	2013	Direct Costs	Allocation from ABAA to ACAM	-15	n/a	-0.13%
Alpine Energy	2013	Legal Deductable	Allocation from ABAA to ACAM	-29	n/a	-0.24%
Horizon Energy	2013	Corporate services and general overheads	Allocation from ACAM to ABAA	670	24.95%	9.58%
Northpower	2013	Business Support - Corporate/Executive/Board	Allocation from 2/3 Network; 1/3 Contracting to EBIT	-339	-10.37%	-2.22%
Network Waitaki	2014	Business Support	Allocation from Estimate of Usage to Headcount	-68	-10.83%	-1.81%
Network Waitaki	2014	Pass through costs - Rates	Allocation from Estimate of Usage to Actual Costs	-19	-3.03%	-0.51%
Northpower	2015	Corporate/ Executive Board (included in Bus. Support)	Allocation from EBIT to Revenue	2,973	151.25%	18.90%
Powerco	2015	Business Support-corporate services	Allocation from Line charge Revenue to Distribution line charge revenue	464	1.94%	0.71%
Powerco	2015	Business Support - Information services and projects	Allocation from Fixed Assets - Historic Cost to Fixed Assets - Depreciated Cost	103	0.43%	0.16%
Powerco	2015	Business support -Human Resource department	Allocation from Line charge Revenue to Employee numbers	109	0.46%	0.17%
Powerco	2015	Business support - insurance	Allocation from Fixed Assets-Historic Cost to Vehicle numbers/Employee numbers/indemnity value	-84	-0.35%	-0.13%
Powerco	2015	Business support -facility costs	Allocation from Fixed assets - historical cost to Employee numbers/Fixed Assets-NBV	159	0.66%	0.24%
Counties Energy	2016	Business support	Allocation from FY15 - Accountancy 100% to FY16 - Accountancy 95%	45	1.01%	0.39%
Counties Energy	2018	Business Support	Allocation from ACAM to Directly Attributable	0	n/a	0.00%
WEL Networks	2018	Business support	Allocation from ACAM to ABAA	1,305	17.54%	5.23%
Alpine Energy	2019	Business Support	Allocation from Directly Attributable to Revenue	897	13.35%	5.15%
EA Networks	2019	Business Support - Building Costs	Allocation from ACAM to ABAA	145	3.87%	1.22%
EA Networks	2019	Business Support - General Costs	Allocation from ACAM to ABAA	471	12.56%	3.96%
EA Networks	2019	Business Support - Office related IT Costs	Allocation from ACAM to ABAA	42	1.12%	0.35%
EA Networks	2019	Business Support - General IT Costs	Allocation from ACAM to ABAA	43	1.14%	0.36%
The Lines Company	2019	Corporate	Allocation from Specific Analysis to Revenue	260	5.32%	1.81%
The Lines Company	2019	Finance	Allocation from Specific Analysis to Time Allocation	216	4.42%	1.51%
The Lines Company	2019	HR	Allocation from Specific Analysis to Head Count	136	2.78%	0.95%
The Lines Company	2019	IT	Allocation from Specific Analysis to Head Count	62	1.28%	0.44%
The Lines Company	2019	PR	Allocation from Specific Analysis to Time Allocation	91	1.86%	0.63%
The Lines Company	2019	Building	Allocation from Specific Analysis to Head Count	14	0.29%	0.10%
The Lines Company	2019	Metering	Allocation from Not Allocated to Pricing Methodology	541	11.07%	3.77%
Wellington Electricity	2019	Routine and corrective maintenance	Allocation from No Allocation Under ACAM as costs unavoidable to Proxy	16	2.56%	0.05%
Wellington Electricity	2019	Business Support	Allocation from No Allocation Under ACAM as costs unavoidable to Causal	0	0.00%	0.00%
Alpine Energy	2020	Business Support	Allocation from Revenue to Employee Time	-395	-6.85%	-1.85%
Electra	2020	Business Support	Allocation from % of revenue of regulatory business over total revenue to % of management time on reg	-121	-4.15%	-0.93%
Network Waitaki	2020	Business Support	Allocation from Total Head Count to Function head count and count of IT users	412	19.27%	6.08%
Top Energy	2020	Business Support	Allocation from Asset Book Value to Corporate Resource Time	-949	-17.27%	-4.97%
Total	All			6,739		

Source: Commerce Commission database: “Electricity-distributors-information-disclosure-data-2013-2021”

A.2 Changes in cost allocation by the airports

79. Like the EDBs, the airports have not made extensive changes to the allocators that they apply, with only 11 changes having been applied across the three airports in aggregate across the 11 disclosure years.

Figure 6 – Changes in allocators – airports

Airport	Year	Cost item	Change in allocator	Effect (\$'000)	% of allocated costs	% of total costs
Auckland Airport	2012	Asset Management & Airport Operations	Allocation from 100% Airfield to Aero Share Rule (excluding Aircraft & Freight)	0	0.00%	0.00%
Auckland Airport	2012	Corporate Overheads	Allocation from Aero Share Rule (excluding Aircraft & Freight) to Marketing Incentive Cost treated using Aero Shared Rule.	847	2.14%	1.06%
Auckland Airport	2013	Asset Management & Airport Operations	Allocation from Property Direct to Space based split based on area of building occupied by AIAL and external tenants	-96	-0.24%	-0.12%
Auckland Airport	2013	Asset Management & Airport Operations	Allocation from Split of aeronautical activities undertaken by ground handler to Aircraft & Freight Direct	0	0.00%	0.00%
Auckland Airport	2013	Asset Management & Airport Operations	Allocation from Employee time split to Aeronautical revenues split	-123	-0.31%	-0.15%
Auckland Airport	2013	Asset Management & Airport Operations	Allocation from Split of rental revenues between aeronautical and non-aeronautical activities to	14	0.04%	0.02%
Auckland Airport	2014	Asset Management & Airport Operations	Allocation from Future Use to Aeronautical revenues split	-401	-1.01%	-0.50%
Auckland Airport	2015	Asset Management & Airport Operations	Allocation from Aeronautical revenues split to Employee time split	264	0.67%	0.33%
Auckland Airport	2015	Asset Management & Airport Operations	Allocation from Aeronautical revenues split to Employee time split	147	0.37%	0.18%
Auckland Airport	2016	Asset Management & Airport Operations	Allocation from Aircraft & Freight - Direct to Terminal - Direct	0	0.00%	0.00%
Christchurch Airport	2018	Asset Management and Airport Operations	Allocation from Incentives to 100% of cost component included in disclosure	-2,051	-14.14%	-7.24%
Total				-1,400		

Source: Commerce Commission database: “Regulated-airports-information-disclosure-database-to-February-2022”

B. Summary of corporate cost allocation analysis

Function / sub-function	Comment on nature of costs	Conclusion on allocator for the subcomponent
<i>Senior executive</i>		
CEO CFO General counsel CTO CCO	These are all functions whose scope would be largely invariant to the size of the organisation.	Common cost allocator
Executive assistant to the CEO	Effort required likely to depend on the size of the senior executive group, which was noted above to be largely invariant to the size of the organisation.	Common cost allocator
<i>Finance</i>		
Tax Planning and performance Group reporting	These are all functions whose scope that would be largely invariant to the size of the organisation.	Common cost allocator
Treasury	Likely to have some fixed component, but with the effort also depending on the size of the debt portfolio to be managed.	Common cost allocator (part) Proxy for relative debt levels for the different services (which cannot be measured), such as NBV or revenue, although noting that this may over-allocate to copper (i.e., because building

Function / sub-function	Comment on nature of costs	Conclusion on allocator for the subcomponent
		block regulated assets are simpler for rating agencies / debt providers).
Billing and revenue assurance	Effort likely to relate to the revenue being managed.	Revenue
Finance manager and team for the business units	Effort likely to depend on the number and size of the transactions being performed by each business unit.	<p>Allocator for each business unit should reflect the relative transactions for that unit.</p> <p>As revenue would be expected to track cost overall, revenue is likely a reasonable proxy (importantly, in the context of an allocation that is not overly dependent on corporate structure).</p>
<i>People and culture</i>		
Personnel functions (people experience, payroll, recruitment, learning and development)	Likely to have a fixed component, but with effort likely to increase with the number of employees.	<p>Common cost allocator and relative employees or a proxy for this for the effort-based component.</p> <p>It may be that the split of revenue overall is a reasonable proxy for relative employees (importantly, in the context of an allocation that isn't overly dependent on corporate structure).</p>
Internal communications Diversity and inclusion Organisation change	Likely to be largely invariant to changes to the size of the organisation.	Common cost allocator

Function / sub-function	Comment on nature of costs	Conclusion on allocator for the subcomponent
<i>General counsel</i>		
Legal – corporate	Effort will depend on the extent of commercial legal issues to be addressed.	Revenue should be a good proxy for the relative effort (i.e., given that the size of the risk will determine priorities).
Legal – regulatory	Effort will depend on the extent of regulatory issues to be addressed.	Revenue may be a reasonable proxy.
External relations Sustainability Risk and internal audit Partnerships	These are all functions whose scope would be largely invariant to the size of the organisation. Note that “partnerships” refers to the activity of entering into procurement agreements (i.e., with suppliers) – administration of the contracts (which would be variable) occurs within the business units.	Common cost allocator
Regulatory – policy and affairs	Effort will depend on the extent of regulatory issues to be addressed.	Revenue may be a reasonable proxy, albeit one that may over-allocate to copper (i.e., given there are no price reviews for copper).
Regulatory – delivery	Wholly engaged on FFLAS.	Directly attributable to FFLAS.