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Mobile Telecoms Internal Recharge and Cost Allocation Challenges and Options

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Introduction

Allocating and recharging telecoms costs is often a significant challenge for Finance and IT teams. The recent emergence of a wide range of shared voice and data bundles, both for UK and roaming usage, has complicated this matter significantly.

Traditionally, most mobile telecoms charges are levied at a connection level, so the process of recharge is primarily linked to maintaining an accurate inventory of connections and services. By simply referencing the connection against a cost centre or charge code, it's a relatively straightforward process to aggregate charges at cost centre level.

Shared allowances, or 'bundles', complicate this area, as typically the entire charge for the allowance is levied against either an individual connection, or as a stand-alone monthly rental charge. And so, if Finance wishes to recharge this cost, it is first necessary to apportion the usage accurately, and then calculate the relative cost to be recharged to each cost centre or business division.

This report looks at the different options and challenges associated with the most common models for mobile recharging. For the purposes of this report, and to present it in a simplified form, we will use the example of a monthly shared data allowance costing £1,000 pm, and providing 100Gb of UK data across 100 connections – but the principles will work for any shared bundle for voice and data.

Fixed Apportionment

In the fixed apportionment model, the charge is either equally distributed amongst all connections, or against the connections that are enabled to use the shared bundle. So, in this example, each connection would be recharged at a fixed cost of £10 per month for their share of the bundle, (irrespective of usage). Alternatively, if only 80 of the connections were data-enabled, then it may be preferable to recharge each enabled connection at £12.50 pm instead (£1,000/80 connections).

Whilst this model is simple to manage, it has some drawbacks with respect to the fair allocation of charges based on usage. Shared bundles are excellent ways for a business to avoid excess usage charges at an individual level. Typically, usage will vary significantly across a user base, and as a result excess usage by a single connection is balanced by under utilisation of data from lower volume users. Overall this creates less wastage, and reduces the total cost of ownership for mobiles.

However, when recharging these costs, all users pay the same amount – so in effect, the higher usage connections are subsidised by the lower volume connections. At a group or business level this results in lower overall costs; at a cost centre or user level,

However, this can be seen as a negative, especially where divisional P&Ls are in place.

This issue becomes more pertinent for higher cost areas, like shared roaming data bundles. These bundles are very effective at reducing costs, especially where many different users travel for business, but don't necessarily travel on a regular/frequent basis. By way of comparison, some of our customers are seeing reductions of 60% or more on roaming charges, by implementing shared bundles.

Without a shared bundle, the business needs either to remember to add short-term bolt-ons to the connection, or to have permanent roaming bolt-ons added to connections in case a user travels abroad. That, or face very large roaming charges based on the 'standard roaming rates'. For most businesses, however, the short-term bolt-ons either don't get added, or get left on in error, leading to overspending. Or in the case of permanent bolt-ons, the cost is wasted in the months when the user does not travel abroad.

Overall, by implementing a fixed allocation model, it is important to recognise that the non-roaming connections may end up being charged disproportionately to their actual usage and costs each month.

Usage Based Apportionment

In the usage-based apportionment model, the connections are recharged based on their actual use of the shared bundle. So, assuming equal usage by all 100 users, each user would simply receive a charge of £10 pm again. Clearly, however, usage will vary across the connections, and as a result, in this model, connections are charged based on their actual proportion of the usage.

So, if one connection uses 2Gb of the 100Gb allowance, they are charged 2% of the bundle charge - £20; whereas if another uses 500Mb of the allowance, then they are charged 0.5% of the bundle charge - £5.

The key problems with this model relate to disproportionate usage by individuals, and the general under-utilisation of the shared bundle.

Disproportionate usage occurs where an individual user accounts for a very large amount of the usage - for instance, if they used 20Gb of the 100Gb allowance in this example. For the business, the bundle represents value for money when compared with individual data bundles, and avoids large excess data charges. However, for the frequent very high volume user, their individual costs can be potentially much higher than they would be with an appropriate individual bolt-on. Thus, it is important to recognise that whilst the business achieves better value for money, and avoids excess charges, there may be some regular large volume users, and cost centres, whose costs can increase because of usage-based apportionment.

Under-utilisation of a shared bundle occurs where the full allowance of the bundle is not used, and is to be expected. We recommend working to 70-80% average utilisation rates, so that the occasional excess usage does not result in large excess charges, and so that there is room for natural usage increases. So, in our example, if 80Gb of the 100Gb allowance were used in a month, then in the usage-based apportionment model the relative cost of each Gb of usage will vary month by month, and will increase with less usage.

So, for example, at 80Gb the cost in our example is £12.50 per Gb, whereas at 90Gb usage it is £11.11. So whilst the cost is proportionate to usage, the unit cost per Mb of usage can, and will, vary from month to month, which can be confusing, and in extremely low usage scenarios can create very high recharges for individual cost centres.

Unit Based Apportionment

The unit-based apportionment model is similar to the fixed apportionment model, but instead of charging all users equally, the usage profile of the user is established and used as part of the calculation to recharge the costs. So, for example, a basic voice-only user in the UK may be allocated 1 charge unit, whereas a roaming user may be allocated 10 or more charge units, to reflect the different real costs of these two user profiles to the business, and the cost of the overall shared bundle.

Example, unit-based model:

Profile Category	Charge Units
UK voice only user	1
UK data only user	2
UK voice and data user	3
Roaming voice only user	6
Roaming data only user	8
Roaming voice and data user	10

The right number of charge units for each user profile is not an exact science and will be influenced by the type of contract and tariffs that your organisation has in place, and the cost of the roaming element (if visible). Therefore, it is worth modelling several charge unit models before implementing this approach.

Once the profile and number of charge units has been established for each user, then the total number of charge units for all users is calculated, and the overall monthly bill value is divided by the total number of charge units to calculate the cost of each charge unit.

Example calculation:

Profile Category	Charge Units (A)	Users (B)	Total Charge Units (AxB) = (C)
UK voice only user	1	10	10
UK data only user	2	20	40
UK voice and data user	3	50	150
Roaming voice only user	6	5	30
Roaming data only user	8	5	40
Roaming voice and data user	10	10	100
Total		100	370

So, for an example month total invoice of £2,775, the total cost per charge unit is (£2,775/370 units) = £7.50 per charge unit. This then creates the following charge for each usage profile:

Profile Category	Charge Units	Recharge Cost
UK voice only user	1	£7.50
UK data only user	2	£15.00
UK voice and data user	3	£22.50
Roaming voice only user	6	£45.00
Roaming data only user	8	£60.00
Roaming voice and data user	10	£75.00

Whilst this model is more complex to manage that the fixed apportionment, it provides a fairer mechanism of recharge than simply allocating the same charge to all users. It therefore lends itself to organisations that have a wide variety of usage profiles in their mobile estate.

Managing Excess Usage Charges and Apportionment

Whilst regular monitoring of usage should allow a suitable shared bundle to be maintained to meet user needs, there may be instances where the allowances are exceeded, creating excess usage charges. Typically, these charges tend to be at 'standard' (or higher) rates than those charged in the bundle. As a result, action should be taken to avoid breaching allowances wherever possible.

When they do occur, however, there can be associated challenges with respect to apportionment. Taking our example where the business has 100Gb of data and 100 connections, notionally each user has 1Gb of data. If, however, a single user consumes 50Gb of data through streaming content, it effectively reduces every other connection's allowance to 0.5Gb.

This may result in the overall allowance being breached. Excess charges can often be charged at a connection level and not a shared level, and, therefore, individual connections may incur excess usage charges on their data, even though individually they may not have exceeded their own notional allowances. They were simply the first user to breach the aggregate allowance.

Where excess costs occur, all users can be equally charged the additional costs – which clearly is to the detriment of the low volume users. However, this does require more complex processing of the billing data to remove the excess charges, and aggregate these before they can be equally allocated.

Alternatively, the rental charge can be equally allocated, and the excess usage is simply charged to the individual connections – again, causing some cost centres effectively to be penalised for another cost centre's excess usage.

With usage-based apportionment, it is possible to allocate the proportion of the overall rental and excess usage charges based on proportionate usage, but this is a much more complex and costly process to manage.

Unfortunately, where excess usage charges are involved, there are no easy solutions that don't involve one set of users receiving a higher charge than is proportionate to their own usage. And so it is important to consider in advance how these challenges will be addressed, if possible, and to understand that shared bundles, whilst often offering very good value for the business overall, do result in disproportionate charging at a user level.

It is, however, important to remember that without shared bundles, users and the business would likely pay significantly more for their mobile services. As with individual bolt-ons there is always significant under-utilisation that is automatically paid for, and more occurrences of excess data usage. As a result, our recommendation is to keep the recharge model as simple as possible, and accept that very occasionally there may be some disproportionate charging.

Shared Service Billing and Tariff Based Charging

A greater number of businesses are adopting a shared services model for IT, where the IT function acts as a service provider to the business. This creates an opportunity for IT to recharge for telecoms services based on a different model entirely.

With shared services billing, the IT function negotiates terms with their suppliers, and manages the support of the telecoms services centrally for all business divisions and users. However, the IT function funds the cost of this support and management, by recharging the business units and users based on an uplifted, or fixed rate tariff. The difference between the cost of the services bought from suppliers, and the recharged costs to the business, is the service margin, or retained charge, for delivering the service.

By operating this way, IT acts more like a telecoms services provider, and by doing so it is also free to set its own tariffs and service charges. Whilst more complex to establish than traditional recharge, this model enables IT to deliver enhanced value to the business. It also encourages continuous optimisation of usage and costs – creating more funds to improve service and fund technology investments.

There are a range of existing billing and management solutions available to support the shared service model, and so IT departments can give this model serious consideration without fearing that the process will be unmanageable. Finally, by using this model, it also enables IT to charge cost centres on agreed tariffs that remove the recharge issues outlined in this document, but still enable IT to buy services on a shared bundle basis. This offers the best of both worlds – highly competitive purchasing and reduced overall business costs, but with cleanly-apportioned costs, based on usage, for cost centres.

Recommended Actions

We recommend the following approach:

- **Complete an initial assessment** – does your business need to recharge telecoms charges? Which models of recharge are currently used? How will shared bundles and new tariffs impact upon existing arrangements?
- **Understand your recharge costs** – what is the real cost and resource of recharging telecoms costs? How many people/processes are involved from receipt of invoice to recharge? Are these processing costs understood? Can processes be streamlined?
- **Keep the model simple** – recharging costs can be made extremely and unnecessarily complex, leading to significant hidden costs. Agree a simple model, communicate it to finance managers and explain the positives and negatives, and what actions IT will take to mitigate excess usage costs.
- **Finance import file** – can the process of importing cost centre charges into the accounts system be automated to free up finance resources?

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