Telzed

Making your own Telecom cost and profit system

A "DIY guide" to costing and accounting systems

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A Telzed paper to assist managers plan their approaches for developing costing and profit tools

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Table of contents

Executive summary

This Telzed paper provides a guide for those who see the need for advanced cost and profit data to help manage their business in better ways. A cost system (or cost model) is now seen by many managers to be a vital tool that supplements existing systems and data. Too many decisions are made based on inadequate information and the potential outcomes of, for example, pricing too high or too low can be catastrophic. A costing system does not make decisions of course, but it can enable better decisions.

Costing systems can be simple or complex, and if the demands are huge then there is no alternative but to plan for a very large complex IT system. Major projects can easily cost more than €5 million. This paper does not consider this approach, instead it looks at smaller systems and projects that do not require major IT procurements and systems implementations. These simpler models can still be very sophisticated and enable managers to do much of the design, build, testing or development in-house. This "Do It Yourself" (DIY) type of model can meet many operators' needs. Some external expertise will probably still be required to get the model started and designed, but more of the work can be done by your own teams.

A DIY model is not a lower quality or a deficient model – it is simply one that is more within control of your own teams and does not use proprietary IT.

This paper identifies key issues that should be considered in the planning and design of a costing system. This paper is not a discussion of telco costing systems in general or a discussion of Activity Based Costing (ABC – which is a central part of a costing system). It provides help with project planning and it gives ideas to help managers decide on how to build a costing system and implement ABC.

For further information and discussions, please contact Telzed.

1 Telecoms managers need cost and profit information

Managers need information on which to make decisions. There is a wealth of *data* in most operators, covering: volumes, costs, forecasts, revenues, network performance data, customer statistics, fault reports, complaints etc. Managers need to access the data, but also need it translated into *information* that provides more useful insights. Knowing how much a department spends is of limited use (but certainly interesting for some managers and it is useful for some decisions), but how knowing much this department's costs contribute to an existing product and how this might impact the cost of another new product, are likely to be much more useful.

Insights to the costs and profit levels of products, customer segments and channels to market, need information that is not readily available. The cost of a basic call or a data download is rarely known, never mind the total cost of a triple play tariff package (or "price bundle"). How can price decisions be made? Ideally the fixed and variable costs should be known to help with answering: what is the minimum profitable price; or what price would also make a full contribution to the common costs of the business[1]?

New products and investment plans require a business case: additional investments, costs and the expected revenues are normal inputs. In addition, a new product will make use of the existing network and staff. What are the costs from this usage of staff or for consuming some of the existing network capacity cost or the costs of a new customer's bill? The accounts provide a wealth of information, but this level of detail is not shown. A cost model is required to help.

In addition to your own managers' needs, Telecom Regulators often also require cost and profit data. Regulators specify a wide range of cost and revenue information that must be provided in accordance with their exact requirements. These demands are often similar to the information required for commercial managers, so one system may satisfy both internal and external regulatory parties, albeit with some differences. In any event…

Managers need costing systems, and often need profit analysis as well.

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[1] Also termed business sustaining cost – those costs that are not clearly driven by network systems, products or customers

2 Making your own cost and profit system

2.1 Why make your own system?

There are many types of cost and profit system. These are described in the Telzed paper "Options to evaluate telecom products' costs and profits" on the Telzed web site (www.telzed.com). These range from business plan discount cash flow systems, through complex Excel based models and stand-alone database systems, to high end systems based on proprietary Activity Based Costing (ABC) platforms and Enterprise Resource Planning systems.

Where there are 1000s of products and complex financial accounts to process with very demanding regulatory compliance, then an ABC type tool is probably needed. This is often expensive to build and maintain, but has many advantages and benefits.

This paper does not consider a system's selection. This paper considers only the issues and processes that are required to consider if a *non-proprietary IT solution* is developed (a "DIY approach"). These may not have the features of a full ABC tool but they can still be sufficient. There are some benefits from such building your own system:

- No licence fee costs.

- All processing is transparent – the user can check all functions and formulae.

- Bespoke features can be added.

- No specialist IT skills are needed (an inevitable barrier to some managers is the need to learn an ABC tool in order to take full advantage of it).

- Modifications can be done in-house, without vendor or consultant's support.

- The learning obtained from a DIY model can be used to select proprietary ABC tools and to build these later, if an upgrade is required. It is very hard to select a system and plan a major ABC project without prior experience.

- There is confidence in the system – complex IT tools sometimes create some doubts about the internal workings. Though often misplaced, if any managers believe a system is a "black box" that is not understood or doubted, then the results will not be used, and the investment is therefore wasted. By making a system using your own team, then confidence may be higher,

The limitations are however clear:

- Functionality is limited compared to a top-end ABC system.

- Reporting and user-front ends are limited.

- There are limits to how large and complex a system can be before it becomes unmanageable.

Despite this there is a wide range of situations where building your system is the best option. These leads to three common alternatives:

- Build it in Excel.

- Use MS Access.

- Use a combination of both.

See also the "Options to evaluate telecom products' costs and profits" Telzed document on the web site. Once a decision is made to consider building your own system then a project can be planned.

2.2 Planning the project

Building a costing system is a project like any other, and so planning, design and approvals are all vital before moving to building, testing and using it. Projects are constrained by the time, cost and complexity trade-offs that are common to all projects. Often a final decision cannot be made on these factors until some initial plans are made and the overall needs are clearer. Some recommended approaches include:

- Start with the business strategy. Knowing what you are trying to achieve and how you intend to get there are vital. This signals:

    o What you need to do to achieve these aims and this leads to

- Definitions of the decisions to be made. In turn this identifies:

- What information is required to make the decisions correctly.

This top down approach is valid for any project and any costing system solution.

The next steps are:

- Identify managers' needs. All relevant managers should be included in order to understand what they need and want to know. Clarify what information they have already and also what do they *really* need. Give examples of what might be possible from the new cost system as, unless they know what your costing system *could* produce, they will usually not ask for such if managers did not know they were possible.

- Are two versions needed? Often telecom regulators require a costing system and in this case there are very specific requirements to meet. The system must define product costs, business unit P&L and balance sheet reports. The commercial managers' needs will be different, but can often be accommodated using the *same* system, but with some additional features and altered values. Regulatory requirements are very specific and must be complied with.

- Identify what exists. Current systems and data need to be used. The new tool can link to these. It is also highly likely that some existing reporting systems and their data can be integrated into the new system – this gives benefits of better information, more consistent data and reduces the numbers of systems.

- Identify what does not exist. Some new sub-projects may be required to get the right data in the right format (say network data or to get billing data).

- Identify the sources of information (persons and systems) that will be required.

- Create project management structures and approvals processes.

- Define the resources for the rest of the project. Staff and budget.

The next stages are:

- Define the overall specification. This defines what features will be delivered by the system and also what will not be delivered. Every item that is desired by every manager usually should *not* be met. The project time, budget and the limits of complexity that are possible in the system, must limit the scope.

- Revise the project plan and budget. If the design has to meet complex specifications then more time/budget may be required than foreseen initially.

- Gain agreement and get sign off.

- Ensure the key managers accept the specification.

After the overall scope is agreed then the more detailed design work can begin. This fully defines how the features in the overall specification are technically implemented. The full lists of network elements, products, accounts etc. are defined. Experience shows that more time on the design phase and even testing out ideas by prototyping some analytical solutions, saves time later. After the detailed design is complete:

- Get final approval and signoff.

- Review the design with key personnel: users, operators and those who will make decisions using the outputs.

- The main part of the project can now proceed: systems build and data collection.

Of course if the time and cost are fixed at the outset, then clearly the design must be tailored to meet these limits. The building, testing, and final use of the system follow on from the design. Once a system is made and is used, then it should continue to develop over time – so on going developments should be planned for. *Using* a costing system is not a one-off project. In addition, some wider *business changes* are required to ensure the system is linked into new or modified business processes. For example:

- Investment plans might need to show the use of the existing cost data from the system before they are signed off.

- Bonuses might need to be linked to profit measures, and not just to volumes, revenues or sales. Many Key Performance Indicators may be linked to the system.

So getting a system to be part of the business requires processes to alter. Also managers' thinking should alter – they must be willing to use the information and think about profit targets and not just sales volumes and revenues (both are important but hitting a sales target with a loss making product is not something should normally be rewarded).

3 Building your own system

In this section the key components are described and some ideas are given to help plan the system build.

3.1 The GL processing

The General Ledger has all costs and revenues. Usually the GL requires processing to enable it to be used in the main cost and revenue allocation system. It is often sensible to consider the "pre-processing" of the GL as a standalone module before the main costing tool. Key areas to consider include:

- Group accounts to cost types. DIY systems usually cannot report every product broken down to every cost account. Few managers need great detail of cost types. Use as few cost types as possible.

- Very few managers (if any!) need to know the contribution of any one account or cost centre to a product – so there is no need to have this data reported on at the end of the system. Too many models (including proprietary tools) get stuck by this type of detail that slows a system down and makes it unnecessarily complex. A simpler system is often better and some very simple techniques[2] enable the contribution of any account or cost centre to a product to be easily seen.

- Group non relevant costs.

- Ensure there are automated checks for new accounts and cost centres – this avoids errors when new accounts are made.

- Use the chart of accounts as a reference to check in the GL inputs.

- Unless required, avoid short term balance sheet accounts. The net working capital is relevant in regulatory accounting systems but commercial tools can often avoid these costs (group and park the costs). Balance sheet accounts are vital in regulatory accounting systems and can be included, if required.

- Use sub-account codes. Many Accounts systems have details that identify some costs and revenues and these enable direct allocations to products or network elements. Use these fields in addition the main Account and Cost Centre codes.

- Beware of multiple accounting systems and inter-company transfers. DIY models have been made to cope with more than 10 separate accounting systems, but care is needed.

- Define the initial cost assignments – this assigns the costs to the first stage of cost pools in the main system. Do not manually define the assignments to the input costs each time a system is run – it should be automated.

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[2] Contact Telzed for more details

Remember: keep it simple! Note that the number of special assignments that are unique to one <account.cost-centre> code-combination should not be excessive. These *are* required, but something is probably going wrong in the approach if there are many 100s of such elements.

Huge numbers of costs should default to the cost centre or to a parent cost centre. These are then processed by the ABC drivers of the cost centre. This default allocation can be done using simple techniques.

Revenue accounts:

- The GL product codes (sub accounts) may be sufficient to break the revenue accounts to the products needed.

- If not, then a breakdown of revenues based on the full product set is required.

- For many decisions, only costs are needed, so a cost-only model is sometimes sufficient. Revenues are then excluded.

The linkage of revenues to every product may need a specialist module on its own. This could link to billing system data and be reconciled to the GL totals. This is not discussed further in this paper: the required IT can be complicated. In most cases it requires a "DIY" solution.

3.2 The Asset Register processing

The GL has the depreciation accounts but it is usual to include the asset net values and the depreciation by asset group and to take these from the fixed asset register (FAR). The asset categories (or sub-categories) enable initial allocations to cost pools that should relate to useful detail network or building elements. This means the GL depreciation accounts are often not used – the FAR data is used instead.

Items to consider in the asset processing include:

- Corrections of wrongly posted assets. Sometime assets are put in the wrong category. This can be corrected.

- Correct asset lifetimes to be more realistic. The FAR should be realistic: what is defined for audit in the source FAR might not be realistic.

- Sunk assets that will never be replaced can be "parked." NB this needs some careful thought.

- Some individual assets within a category can be assigned differently to the rest of the category.

- Re-value assets using Current Cost Accounting. This is often not as complex as it seems. It is most important for the major asset classes, especially if values have altered significantly since bought. An 80:20 rule usually applies so most asset categories may not need changed: concentrate on the major civil works, cables, buildings, switches etc.

Ensure the initial allocations are pre-defined and an automated system is used. Do not use a manual entry of how each asset category is allocated each time system is run. Also ensure there are reconciliations to the GL data. Note that the assets' net value and depreciation are both allocated together through the model as separate cost types.

3.3 The main ABC cost model

The GL costs and revenues plus the asset data are now allocated into the main cost model.

Revenues should go direct to the final products. The main costing system has to consider the following issues:

- How many allocation layers? A DIY system needs more than three but too many allocation layers might make a system slow and harder to manage. Too many systems try to have too few allocation stages and this often compromises the system.

- Circulating costs (also called reciprocal costs) must be avoided in a DIY system. This happens when department A helps departments B and C, but C also supports A. This means after support allocations, there are still costs in A, when a proprietary ABC tool can do the full calculation and have zero costs in A. There are a number of simple work-around techniques for this in DIY models. Please contact Telzed to discuss this further, if required.

- Keep the allocation data separate from the allocations. Too many DIY models mix up allocation driver data-entry with the application of this driver. Keep the list of allocation drivers and their values in one place. Then the main model requires the user to simply enter the driver name – everything is then done automatically. This keeps the system "clean."

- Keep it simple (if possible!). Spare capacity for example exists in many businesses. Many managers request the cost of this. There are many reasons why this is often not useful and can make a model more complex without adding any real value. It can certainly be done, but it can create problems. Some such features are best left out of DIY models, at least in the initial versions.

- In many stages of an ABC system, only a few cost pools are allocated to other pools. A good DIY system does not need a lot of manual work to assign these cost pools "to themselves."

- A good DIY tool should have a simple navigation front end. Some diagrams of the processes that shows how data and calculations are cascaded are very useful: these ought also to be navigation tools that any model user should be able to use. This allows bespoke user front ends to be made (one of the benefits of a DIY approach).

Beware of complexity and overload. Excel based DIY tools in particular can get into an overload. Too many cost types or too many cost pools and allocations stages can make it slow and hard to manage. Of course normal Excel good practice techniques are vital, but a system can become too slow or too hard to modify, to be useful.

A database DIY solution (or combined Excel-database) can be taken much further in terms of numbers of stages and numbers of pools and cost types, than Excel.

3.4 Using the information

The power of a costing system for managers comes from using the outputs. There are huge numbers of ways that cost and revenue data can be used. Some techniques to consider include the following.

Allow the managers to use the basic product cost data in *add-on reports*. Basic costs of line rental calls and data can be combined to analyse price bundles – often this can be an "add on" analysis. Keeping these ad hoc calculations separate, helps to ensure the main costing system is kept simpler and easier to manage.

Use the basic costs of network elements – per km or per minute or per Mbyte or Mbit/s. Use these as inputs to new product plans or for investment business cases. They may be used as KPIs.

Build on customer segment and dealer channel costs after the main DIY model and basic products costs are working. This could be in a separate module if the main model is already complicated. Similarly with "full lifetime costing" – this can be an add-on.

Adjust the model to get the fixed and variable costs. This is hugely powerful for decision making, but it often does *not* require huge complexity. This is a major subject (too complex to explain in this paper), but a DIY tool *can* be adapted to identify the full cost (including some of the chairman's office and annual audit fees), and also the marginal cost – those costs that are directly varied by a small increase in product X. There are a number of relatively simple approaches that enable a good measure of the marginal costs – these often do not need complex cost-volume functions. Of course varying costs with changes in volumes *can* be done in a DIY model (sometimes this is hard to do in some proprietary tools).

Bring the model into other processes and systems. A new project and network build out will usually have the plan and forecast of costs specific to the new project. Real value then comes from combining this with the existing costs (from the cost model) of billing a customer or downloading X Mbyte of data etc. This means a new business plan and budget data to be combined with the cost system so that new products can be fully evaluated, and the net outcome over time can be seen.

Look carefully a retail costs. These are real and must be recovered, but they rarely relate to one product or one customer type. Cost drivers are often imprecise. Too often some product managers assume every other product bears the retail costs. General marketing and sales must be paid for by something. These costs and other fixed costs that are not related direct to a product, must be recovered. This is more of a pricing decision, but the cost model provides the data to make an informed decision. A good costing system allows flexibility for how these costs can be included or excluded.

4 Conclusions

This paper provides a number of insights that help any telco plan to build a cost and profit system to meet their business needs. Many of the points are also relevant to building a system based on a proprietary ABC tool, though the focus here is on a system that is based on Excel or MS Access. These "DIY" type systems can be built in house and need no IT licences. They may still need consulting services to get them built, but as they are open platforms, on-going developments should be possible using your own staff – and this is one of the main reasons for using the "DIY approach in the first place.

Although DIY approaches do have limitations, they can be taken to very advanced levels and can meet complex regulatory accounting demands, as well as commercial manager's needs. Although some DIY models can get into a mess with 100s of spreadsheets and become very hard to develop without errors, this is usually because they were not structured properly in the first place, not because there is problem inherent in using a spreadsheet. Similarly, database solutions should not need huge numbers of tables and queries – most tables anyway should be static and rarely need to be altered (and can be hidden from most users' views of the costing tool).

Even if a project to build a DIY model grows and it is found that a proprietary ABC system is required, almost all of the design ideas and the data can be ported over into the new tool, so the work is not wasted.

For more advice and help to build a DIY system or for help with a proprietary ABC tool or for help with regulatory accounts, please contact Roger Steele at Telzed.