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## SAS® Activity-Based Management

### INTRODUCTION

The concept of Activity-Based Costing (ABC) has for many years highlighted the limitations of traditional accounting techniques for measuring the true profitability of, say, customers and products. Despite the usefulness of ABC as a technique, early implementations were hampered by the lack of adequate software applications and enabling technology. However, newer technologies are transforming the technique, from its historical position as a project based initiative into a sustainable process capable of supporting key management decisions throughout the year. In the face of increasingly competitive markets, companies require more intimate knowledge of their costs. As a result of this pressing need and the vastly improved technology available, Activity-Based Management (ABM) is enjoying a renaissance. This review examines SAS® Activity-Based Management, a key component of the SAS performance management suite of applications to illustrate how ABM techniques can offer insights beyond traditional accounting methods and form a regular part of an integrated performance management regime.

SAS is the largest privately owned software house in the world with annual revenues in excess of \$1.53 billion and an unbroken record of profitability and revenue growth since its formation in 1976. It has more than 40,000 customers world-wide, including 96 of the top 100 FORTUNE Global companies. It is an acknowledged leader in the IT industry and rapidly gaining recognition in the finance community for its ability to harness its formidable technology in a financial setting and to provide comprehensive business solutions to a wide spectrum of financial reporting and performance management needs.

Historically, the market for ABM applications has been relatively small and specialised, with many software houses providing niche technologies and tools which tended to support ABM techniques in a vacuum, i.e. distinct and separate from other management techniques and processes. However, recognising the growing importance of ABM to multinational corporations facing increasingly competitive trading conditions, SAS

acquired ABC Technologies in 2002; a then leader in ABM applications and set about re-engineering the product.

Making this acquisition was an unusual step for SAS with its tradition of self sufficiency and in house developed applications. For example, SAS consistently re-invests approximately 25% of its annual revenues in in-house research and development - around the highest in the industry. However, it could see that by applying the same web-based technology, analytical capability and data management techniques, available to rest of its performance management suite, it could propel ABM into the 21st Century.

### ACTIVITY-BASED MANAGEMENT

One of the problems of traditional management accounting methods is that they provide an unreliable picture of customer and product profitability. Countless implementations of ABM highlight examples of organisations which have axed profitable products, thinking that they were loss making or continuing to serve 'important' customer relationships, in the misguided belief that the high value of business placed with them was profitable.

This can happen because costs are allocated to products and customers on a fairly arbitrary basis, using, for example, total absorption costing which does not reflect the manner in which costs are incurred. ABM, on the other hand, identifies the true costs of business processes and what 'drivers' influence cost. ABM allows management to identify separately those costs which are adding value to the business, its customers and products and to concentrate on reducing or eliminating the non-productive activities and associated costs. Experience shows that non value adding tasks can account for around 50 percent of total overheads, so that there are very few businesses that do not stand to gain significantly from a better understanding of their cost base.

Whilst these limitations of traditional accounting systems are well known, the increasingly competitive environment in which businesses operate has begun to press home the need for an ABM approach. In many consumer businesses, margins are very slender and highly sensitive to minute changes in pricing structure. For example, understanding the true cost of serving customers in a modern telecoms business, such as a mobile phone operator, is vital to competitiveness and survival. Yet it is often difficult to identify which tariffs and relationships are profitable amongst the millions of customers served, or how to react appropriately when web based operators and others are frequently changing tariffs and 'bundling' product offerings. These businesses constantly measure customer churn but, in the absence of ABM, key questions often go unanswered, such as which customers should be encouraged to go and how many profitable relationships are being lost to competitors?

In these circumstances, measuring contribution (sales price minus variable costs) can give rise to misleading results. A contribution calculated in this way could lead to a correspondingly healthy profit after overhead absorption but fail to take into account a wide range of less obvious cost drivers which, once appreciated, could transform an apparently profitable product into a loss making one. Suppose a particular model of mobile telephone supplied as part of a contract attracts a disproportionate level of complaints, returned goods, credit notes, disputed invoices and late payments. It is not difficult to see how the cost of managing such a situation could render it unprofitable, yet total absorption costing provides no visibility of the issue. Or, how does the profitability of a customer who upgrades their telephone at every opportunity compare with a customer who retains their phone for a longer period? What value added activities, such as renegotiation at the point of cancellation, can reduce customer churn rate?

Similarly thorny issues affect the financial services industry and utilities that have to offer a wide range of complex products, wrapped in ever increasingly imaginative ways, to a large and internet savvy customer base. Customer loyalty is no longer guaranteed as companies find it increasingly difficult to differentiate themselves and customers seek out the lowest prices available on the internet. In these circumstances, the basis of competition inevitably becomes price and not all business gained is profitable business. Margins are cut to a whisker and it is crucial that companies are intimately familiar with their cost base, so that they can discern profitable customers from unprofitable relationships and can target marketing spend accordingly. Understanding branch costs in banks or the total cost of servicing customers with a mix of say, branch and internet accounts has become a high priority for financial institutions exacerbated by the increasing costs of regulation and compliance. But, as before, costs allocated to products

purely by department or function fail to throw any light on the true cost of servicing customers or profitability.

In an effort to improve product loyalty, manage customer churn and enhance profitability many organisations have embarked on major initiatives around customer relationship management (CRM) to solve their problems and provide insights into customer behaviour and profitability. However, the CRM agenda is failing to live up to expectations and although organisations have harvested vast amounts of information, few have gained any meaningful insights into their cost base and identified unprofitable customers. Profit improvement has once again proved illusive.

Measuring true customer and product profitability has always been a challenge and the foundation on which ABM techniques have thrived. However, in recent years, newer management methods and ways of carrying out business have further exposed the vulnerabilities of traditional management accounting and highlighted an even stronger and more pressing case for ABM techniques. Notable amongst these has been the trend towards shared service centres, outsourcing and other internal service arrangements governed by Service Level Agreements (SLAs). It is now common, for internal services, such as the provision of information technology (IT), marketing and human resources to be provided on an arm's length basis. Naturally, putting these services on a commercial footing requires cost 'transparency', so that business managers can benchmark services and decide whether to source products or services internally or whether better value can be obtained from external providers. Increasingly, ABM techniques are being applied to these situations in an effort to understand the true costs of providing services and to confidently provide business managers with a 'menu' of prices from which to select the products and services they will buy.

Selling products through different channels to market is a prominent feature of modern business practice and because of the complexity of the arrangements, provides some of the most challenging conditions in which to understand profitability. In the networked or 'wired' economy, companies find themselves involved in elaborate trading ecosystems in which there are many relationships, such as channel partners, that have to be managed. Traditional accounting systems, with their internal departmental focus, are ill equipped to identify the true cost of doing business across these channels. Very few accounting systems can provide 'line of sight' across business channels so that the total profitability of selling a product through a variety of channels can be seen. However, with the appropriate enabling technologies and applications this is exactly the kind of modern day challenge that SAS Activity-Based Management is well suited to.

## THE TECHNOLOGY

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The SAS platform provides a number of fundamental building blocks that are essential to running an effective ABM application. For example:

- The ability to leverage multiple data sources using ETL (Extract, Transform and Load technology)
- The capability to manage and share very high volumes of multidimensional data on a consistent basis across the application set
- The availability of web-based analytical tools and reporting capability that make information instantly available
- Tight integration with budgeting, financial consolidation and strategic planning modules
- The ability to leverage portal technology to meet the information needs of different stakeholders.

## LEVERAGING MULTIPLE DATA SOURCES

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Almost by definition, an ABM application looks at the business in a very different way from which transactions are normally recorded in financial systems. Transactions are usually recorded by cost centre and functional area, for example, “selling expenses for London,” whereas ABM tends to require a cross functional view of a process, e.g. “all of the activities associated in a sale from marketing, sales calls and quotations to invoicing and collection of cash. The need to identify and record cost drivers and activities quickly places exceptional demands on ‘normal’ information systems. In the past, collecting this information was an onerous task since the raw data could be scattered throughout the organisation and primitive integration tools required considerable manual intervention. The absence of suitable enabling technology could turn a well meaning ABM initiative into a massive ‘paper chase’, too onerous to undertake on anything other than a one-off basis.

With the growing complexity of business, the deft management of data sources becomes an essential part of successful delivery of ABM. Fortunately, this is an area in which SAS has unparalleled expertise. Extracting information from multiple information sources is handled by the SAS® ETL (Extract, Transfer, Load) application which resides in SAS®9 Business Intelligence. This wizard driven product allows the data fields of the source and target systems to be defined and for business rules to be developed which determine how information is to be ‘mapped’ between them. Using the ETL tools, an automatic process can be established for bringing information say, current ‘year to date’ actuals, from an underlying ERP system, or FTEs (Full Time Equivalents) from an HR (Human Resources)

system into an ABM model. Once the process is set, there is full control to ensure that the data is brought across completely and accurately. However, if the metadata, i.e. the structural data is changed inadvertently, (perhaps a new cost centre is added to the HR system) then the ETL layer will trap the change and provide audit reports warning that data might be rejected and why.

Once established, the ETL process provides a highly effective, controllable and repeatable method of pulling high volumes of data into an ABM model without manual intervention. As such, SAS Activity-Based Management represents a step change in capability over older systems.

## HANDLING MULTIDIMENSIONAL DATA

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Understanding the true costs of interactions between resources, cost drivers and activities in a geographically dispersed and heterogeneous trading organisation is a multi-dimensional problem. For example, a fairly rudimentary examination of the total selling cost of an insurance company selling, say, home contents policies for a particular period, could involve the complex assessment of sales by geography, broker, sales channel and promotion, to name but a few dimensions. Slicing and dicing data in order to examine results from different viewpoints is essential to gaining deeper business insight into performance. This level of complexity is handled easily in SAS’ multi-dimensional database which is capable of handling high data volumes and recalculating costs on the fly.

## WEB BASED ANALYSIS AND DEPLOYMENT

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Users of SAS Activity-Based Management have a choice of deploying and accessing the application over the web or using client server technology. Power users or administrators of the system can use a client PC (“thick client”) to carry out more processor intensive tasks whilst the web client provides a cost effective and low maintenance method of deploying the application so that users across the organisation can query the multidimensional database and drill down through the application to discover more information.

## INTEGRATION AND PORTAL

Historically, limitations in technology and the specialist nature of the suppliers has meant that ABM has been deployed as 'point' solutions performed in isolation from related applications such as strategic planning and budgeting or helpful business intelligence technologies such as scorecarding and portals. SAS on the other hand fully leverages its other applications and technologies, propelling ABM from a specialist back office function to an application which has significant business relevance and can be regularly monitored.

SAS Activity-Based Management can be used in conjunction with SAS® Performance Management to calculate the real cost and resource implications of strategic plans. Similarly, budgeting SAS® Financial Management can leverage the same cost and resource information contained in SAS Activity-Based Management so that operational plans are aligned with the strategic objectives of the business. Since SAS has a tradition of developing its own technology it is a very straightforward matter to share data across the entire technology platform so that, for example, scorecarding and portal applications can be used to develop highly personalised views of information residing within the ABM system alongside relevant information from other applications at the same time.

## CREATING AN ABM MODEL

Building an Activity-Based Costing model using SAS Activity-Based Management is a surprisingly straightforward task. The basic model structure expects the definition of "resources", usually the chart of accounts, rolled up into a departmental or other hierarchical structure. This can be imported directly from the general ledger using the ETL tools mentioned earlier and displayed as a normal windows style tree structure that can be expanded or collapsed as required.

Once the resources are defined, the next step is to define the activities within the system at an appropriate level of granularity. Deciding upon the activities to include in the model is a matter of judgment and it is quite normal for a significant proportion of the time spent to implement an ABM application to be dedicated to such design issues. SAS does not 'force' any particular methodology or tools for defining a business process and its activities. SAS suggests organisations make use of a number of commonly used flowcharting tools, such as "Visio" to define their processes or will make use of existing process models where available. Resources, (actual costs) are then allocated to activities on the basis of cost drivers identified by the organisation. For example, IT costs might be allocated on the basis of FTEs, whereas depreciation or rent might be allocated on the basis of floor area. Finally, the cost of an activity

is allocated to "cost objects" such as products, customers, and distribution channels based on the consumption of the activity, i.e. driver volumes. As the system is multidimensional, costs can be allocated across combinations of, say, customer, product and distribution channel using one or more cost drivers as appropriate. Additionally, the system allows the number of items produced to be recorded so that the cost or revenue per item can be traced.

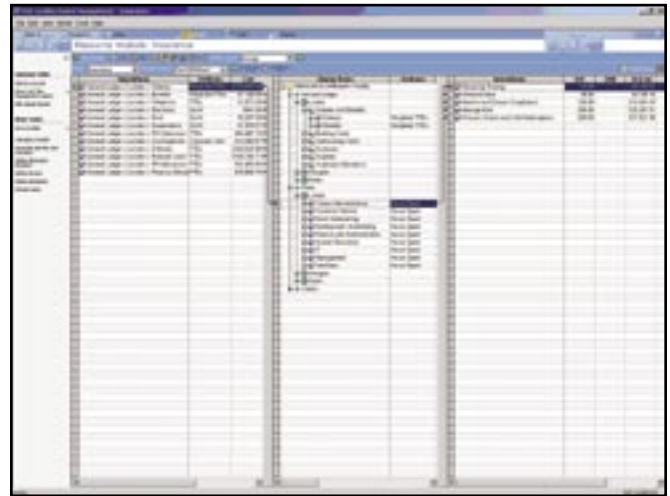


Figure 1: Costs are allocated to activities and cost objects on screen

Once the model is built and populated with data the multidimensionality of the ABM application and SAS' experience of presenting complex information in an understandable manner really comes into play. Unlike slicing and dicing in many products, which tend to expose information in spreadsheet style layers, SAS uses a unique graphical interface which allows layers of drill down to be revealed very intuitively. A hierarchical arrangement of boxes graphically shows the relationships between successive parts of the drill down. However, the drill downs are not 'orchestrated' in any pre-determined way and the direction of the drill down through the model can take the route most appropriate to the user's particular line of enquiry. In this way, SAS Activity-Based Management supports ad-hoc discovery of the relationships between costs, activities and resources and provides better insights into customer and product profitability, which business segments to grow, costly activities, excess capacity and bottlenecks.

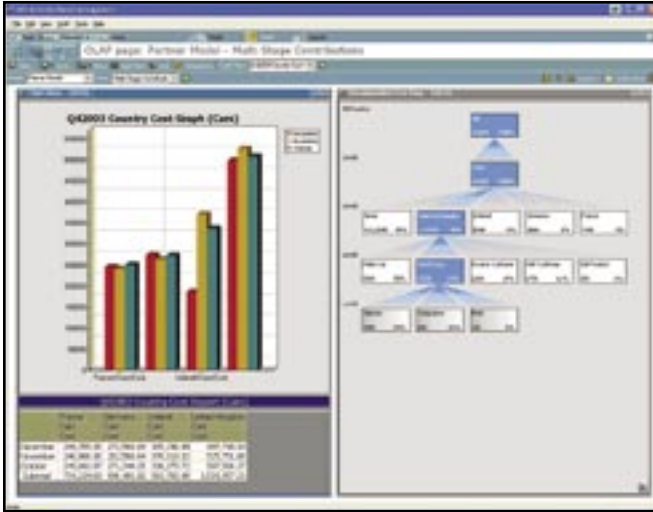


Figure 2: Drill down is highly graphical and intuitive

The ABM model supports ad-hoc reporting by dragging and dropping dimensions as required onto a reporting template. Similarly, on demand reporting can be achieved by real time links to Excel or SAS' own tools. The integrated nature of the SAS portfolio means that key elements of information derived from the ABM model can be surfaced in a management dashboard, scorecard or portal.

## SUMMARY

In today's highly competitive trading environment, ABM is an increasingly important and valuable technique which can provide management with full visibility of the costs of doing business; value added activities and areas for potential growth. However, early attempts to manage businesses in this way were often abandoned because of the limitations of technology platforms available at the time, in particular, the difficulty of extracting and managing large volumes of data from a variety of data sources.

By decisively acquiring an ABM product and 'grafting' the application to its renowned technology platform SAS has transformed the management of ABM from a labour intensive paper chase into a sustainable business process. For example, once an ABM model has been established, SAS' technology platform uniquely provides the essential ETL tools, multidimensional databases and business intelligence capability that allow data to be effortlessly harvested, manipulated and reported as part of a regular management process. By blending technical and applications expertise, SAS has been able to propel ABM from an isolated and specialist back office activity into a mainstream component of a modern performance management capability. ABM has truly come of age.

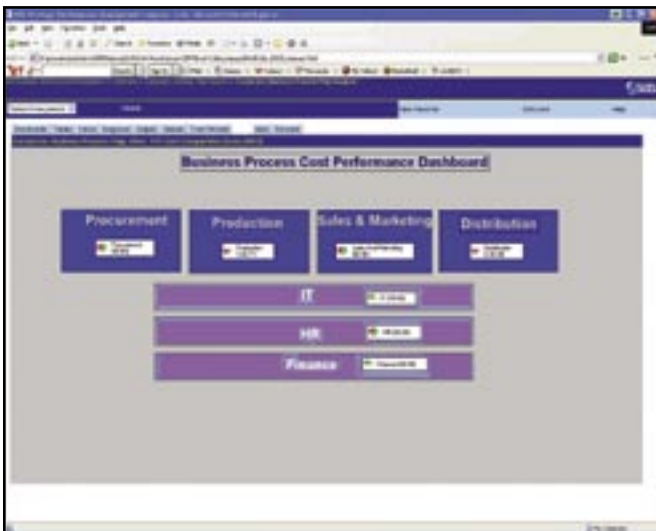


Figure 3: Integrated dashboards are part of the technology solution

## ABOUT FSN

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FSN Publishing Limited is an independent research, news and publishing organisation catering for the needs of the finance function. The report is written by Gary Simon, Group Publisher of FSN and Managing Editor of FSN Newswire. He is a graduate of London University, a Chartered Accountant and a Fellow of the British Computer Society with more than 23 years experience of implementing management and financial reporting systems. Formerly a partner in Deloitte for more than 16 years, he has led some of the most complex information management assignments for global enterprises in the private and public sector.

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