

# **PART ONE**

## **SECTION ONE: THE CHALLENGES FOR THE MODERN ACCOUNTANT**

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## Chapter 1 Introduction – Information not just data

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### ¶11-010 Introduction

If we accept the premise stated in the Preface regarding change – development, evolution and innovation is an essential part of every sustainable enterprise – and that many products and services have changed dramatically (especially over the last three decades), we must also acknowledge that the service function has not just been transformed in the way it is delivered externally to the customer but also in the internal demands placed on those within the organization.

Internally, the administrative support role has not kept up in many instances – too many organizations still do things in the same old way.

Managers and the SMT cannot wait weeks – up to two or so - for a report on the company's immediate past trading period. Generalized, broad-brush standard reports after the close of the month are also no longer acceptable. I would be a rich man if I had a pound for every time I heard the comment, "...but that's how the reports come out of the computer, it's the way the software is written...".

The source of this particular problem does not fall entirely to the accountant but it's because IT people write the majority of accounting software, and clearly they are not management accountants. This is not intended to be a criticism of IT people or to denigrate their work: There is an easy solution to satiate the needs that the 'hunger for useful, key data' management accountant has – determine exactly what you need to know, when, where and in what form, then make sure your software supplier fully understands this, and most importantly, delivers what you specified.

I recently heard about a manufacturing company that had its staff on cleaning and tidying up duties for three days because the new computer system was down – how is this acceptable in the 21st Century! For most



customers, especially in industry or B2B<sup>1</sup> [and with the rapid growth of Internet shopping], products that cannot be downloaded instantly, such as White Goods<sup>2</sup>, are still expected to have a delivery option of a day or two at most. One company I worked with delivered orders received in the morning by 3 o'clock same day and they are not the exception. Downloading a book, film or music streaming, or even a research report means, now, *right now!*

Then there's the issue of what to provide for management to be aware of and where does this data originate – each of these vital points will be worked through in detail later in this book. For now, by way of introduction, it is helpful to make a few important points:

- a) Managers may need information that is not automatically provided within the standard end of month accounting system reporting output.
- b) The structure of the accounting software's coding system is usually defined by the accountant's 'Chart of Accounts', and this is typically established from a financial accountant's auditor-based, 'custom and practice' experience: This is different to the needs of a dynamic business development decision based information system.
- c) The accounting software's coding structure must consider the needs of strategic management team and needs to help them drive the enterprise forward towards the achievement of the vision and mission.
- d) The accounting software's coding structure must support the SMT in their Risk Management planning and strategic focus.
- e) The accounting software's coding structure must consider the needs of operational managers in providing day-to-day detailed activity-based information on costs and performance.
- f) It may be necessary to train traditional audit/regulatory-focused financial accountants in the needs of management accountants as they seek to advise, guide and support decision makers throughout the enterprise.
- g) Do not forget to confirm the chart of accounts with each manager as it relates to them and confirm with them that it will provide for all of their management planning, monitoring and control needs.
- h) Do not impose an IT-focused reporting upon managers as it will simply be delivering the message, "...this is all you get..."

<sup>1</sup> B2B (business to business) means companies not trading directly with public consumers.

<sup>2</sup> 'White Goods' refers to [usually] domestic home appliances such as refrigerators, tumble-driers, washing machines, freezers, etc..

**How aware are you of the risk your enterprise is under from IT failure, really?**

- Do you have a back-up plan for a catastrophic failure of your IT system?
- Do you know how long you can afford for your system(s) to be 'down' before your customer satisfaction levels will become compromised?
- Do your monthly accounting routines create delays or inconvenience for other operational function in the enterprise?

**¶11-020 Building a reality picture**

The whole 'blame' for this ever-increasing pace cannot be laid solely at the feet of IT or software companies – and certainly some of the major accounting software packages are quite sophisticated – we need to consider the holistic<sup>3</sup> data collection process across the enterprise. By this, I do not just mean core activities such as doing things to achieve an output but also considering ancillary actions and supporting roles.

Building up a picture using this base data extracted from various systems across the enterprise enables management and executives to 'see' information which enables them to make better-informed decisions. Such decisions may be operational, tactical or for the longer-term future – the key word here being 'future'. Management Accounting is fundamentally the process, by which we take everyday events, facts and data, and present them in the context of a single or a range of future outcome for the organization.

Quoting from the recent publication<sup>4</sup> from CIMA<sup>5</sup> and the AICPA<sup>6</sup>, "... Management Accounting alone cannot resolve the full range of issues that organizations face. It does, however, offer an approach to organizational management that aids the development and delivery of strategy". It is also important to emphasize that only by using management accounting information techniques to effectively deliver goals and objectives will the organization have a realistic chance of a successful future.

It is surprising therefore, that the majority of companies fail to reassess either their everyday operational processes or their strategic planning

<sup>3</sup> Holistic in the business environment means applying to, or responsible for the whole enterprise.

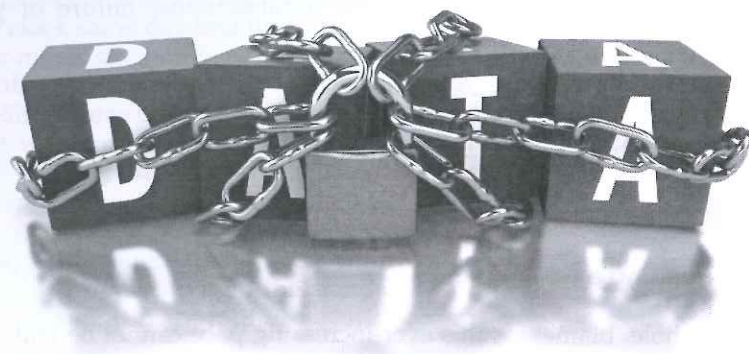
<sup>4</sup> Recent publication – 'Global Management Accounting Principles'©, jointly published by CIMA and AICPA, 2014.

<sup>5</sup> CIMA – The Chartered Institute of Management Accountants; the world's leading professional body for Management Accountants.

<sup>6</sup> AICPA – the American Institute of Certified Public Accountants.



processes. Possibly this is one of the main contributory factors to why most Small to Medium Enterprises (SMEs) remain SMEs throughout their life and perhaps why big corporations can fail.



Conceivably, it's the fear of change itself that keeps some locked into their existing ways (not entirely an unreasonable human emotion). Having made the organization fit what feels comfortable for them to manage over a period of time they will fight to retain such processes and routines. Too often I have seen a manager deliberately disrupt a process change that has been approved as it affects a 'treasured' routine of his own – ultimately this leads to only one outcome, a departure from the company.

One simple, and most common reason (for 'reason' substitute the word, excuse), is due to managers and the SMT<sup>7</sup> having built strong comfort zones based on their common understanding and ability to relate data to events in their experience. Unless their business is forced to change by external factors, many will resist any change to data collection techniques, operational planning tools and business information reporting.

Casting my mind back to the 1980s when I was employed as a Management Accounting Controller in a well-established and highly respected manufacturing company in South London, I recall the Managing Director saying to me once, "*Laddie, there's nothing you can tell me about this business, I've been here man and boy....*" The fact that he had started out his working life as a junior making tea and sweeping up some 50 years earlier seemed to justify his view that only he knew best because only he had grown up in the company.

<sup>7</sup> SMT is a generic term that means the Senior Management Team and differs in structure, job title and authority according to the size and relative success of the enterprise, e.g., in a MNC there could be top executives in a boardroom in one country overseeing sites in many others where operational responsibilities are executed by a subsidiary board that may have senior business unit managers reporting to them – all could be members of the SMT. In a SME the SMT may be owners, family shareholders, directors and/or senior, experienced managers.

The reality was that everything was still being done exactly as it always had been and was some 30 years behind manufacturing technology advances, operating the minimal amount of cheap, crude computers and was reporting the same data each month as had always been seen. Planning simply consisted of an annual budget process that became enshrined in law and used monthly as whip or reward depending upon whether managers stayed within their budget or failed to achieve what was expected. Sales forecasts (for word 'forecast' substitute the word 'guess') were simply based on what they had achieved before plus 'a bit more' – the latter being included to keep the MD happy!

As for market research, scientific activity forecasting, Monte Carlo Simulation and the like, they were never used: The actual expression often used was, "They're not needed, we've got along well enough without those academic ideas in the past so we don't need them now...". Is it wrong to think like this if you are already succeeding? It is a good question. But nevertheless, a question such as this does need to be answered by considering what is trending now, what are the key forecasters projecting for the short-term as well as medium to long terms, and, is your enterprise agile enough to adapt easily and quickly if necessary.

Sadly, my four decades of experience have shown me that the attitude of, "...we're alright doing what we do...", is not rare.

#### ¶1-030 What factors force a commercial enterprise to change?

Time and again one reads articles, hears business talk shows, even blogs discussing/reporting that the world of work is changing. How many times has a clear description of what that change looks like or the implications of change upon the enterprise, been explained satisfactorily, if at all.

We have many questions but not exactly clear answers, such as, what exactly are the factors forcing changes in the workplace? What do they look like? What are some of the outdated processes still being used by the enterprise today and what does a new, better alternative look like?

If the enterprise is to rethink how it is structured and wishes to function from a set time, then these new ideas must take actual form around the change-points. The most prominent of these change-points include:

1. New patterns of employment and working relationships.
2. The astounding pace and scale of the technological change.
3. The advances in digitalization.
4. The advances in the Internet of Things and with Cloud options.
5. The dynamic globalization influences.



Each of these will be examined and worked through in detail in one or more chapter in this book. Change has always been with us in both our personal world and for the commercial enterprise, so why is it different today? There are possibly three core reasons why the changes we are experiencing in today's more connected world are particularly different:

- a) The Increasing Pace of Change - the pace at which change is being presented has increased, and the implications ripple across ever part of human activity.
- b) Greater Connectivity - an intensely connected world comprising people and gadgets, seemingly connected 24 hours a day, seven days a week. This is unlikely to reduce over the next few years, quite the contrary, it is more likely to increase further. It can readily be envisioned that anyone and anything that can be connected, and therefore it will become connected.
- c) Reshaping Relationships – This includes everything both internal and external, from employee behaviour, working hours, loss of permanent contracts, partial home-working, and more. However this trend of guiding how work should be done is being completely reversed. The SMT and managers at all levels must adapt to this new way of working.

Just recognizing the changes that will have the most profound effect upon the enterprise is perhaps the biggest challenge. Whether it's change in business market demographics/competition status, change of experienced or senior personnel, change in the technology requirements (maybe due to a new software release), or change in what the business wants to do, the scale seems to be escalating. The speed or frequency of change also seems to continue to increase, especially regarding BI software tools, smartphones, tablets, and all other forms of portable computing breaking the mold - Having recognized the need for change and made your selection, the process of managing the transformation begins, and

that includes planning how to handle people's ability (or sometimes, inability) to absorb and adapt to that change.

Of course, the related challenge is that of simply staying current and in today's dynamic businesses it can be really difficult as there are so many new developments everywhere. Filtering all the news releases, press reports and hundreds of daily and weekly corporate communications to discover what is important to your organization is very challenging.



*Facing up to the existence of flaws.*

Perhaps one way of reducing this pressure is to avoid reading any of it but then you would also miss the news release about a new system, software or method that would readily cascade through to your bottom line or provide a great return on capital. It can be simplified by asking the question of each news release, etc., "Is this relevant to me, my business or my customers"? The follow up question is just as easy, "when will it make a difference, immediately, next week/month/year or in how many years' time"?

Typically, what factors can force a commercial enterprise to have to introduce some significant form of changes? This will vary depending upon a wide range of external and internal factors as well as the size and structure of the enterprise and the marketplace in which it operates.

Just taking two extremes as examples, a MNC<sup>8</sup> might have a regular or relatively frequent programme of change/evolution whereas an SME<sup>9</sup> might find time and resources limit its ability to restructure, reorganize or adopt new techniques, equipment, systems or technologies. The most common factors that lead to change being enforced upon the enterprise are:

- Continuing shortage of cashflow;
- Loss of markets;
- Changing market dynamics;
- Increasing inefficiencies;
- A rapid rise in the number of (and competitive nature of) alternatives;
- Technological advances;
- Loss of key personnel;
- Retirement of founder or sale of the enterprise.

Too many leaders find it too hard to let go of a work method, product line, or corporate service offering that has formerly been successful. Also, perhaps just as many persist with projects or initiatives that they have supported personally but are clearly not returning value for the effort involved.

<sup>8</sup> MNC means Multi-National Corporations and may even include multi-site enterprises that only operate within their domestic country. MNCs are generally regarded as major global organizations that have a global head office in its country of domicile (this may not be its main operational centre but sited where taxation benefits can be maximized) and business units or operational centres in more than one other region of the world.

<sup>9</sup> SME means, Small to Medium Enterprise and refers to an enterprise – either commercial or charitable – that is small in stature either in terms of headcount, income stream or profitability. There are no hard rules that specify a turnover or net profit figure that delineates and SME from a 'large' corporation.



**How aware are you of the change that has arisen and its subsequent impact upon your organization?**

- 1 How many changes have occurred in your industry over the past (say) 5 – 10 years?
- 2 Could you rank these changes in terms of their impact upon,
  - Your marketplace either as a whole or regionally?
  - Your products and/or services individually?
  - Your enterprise?
- 3 Are you aware as to how your competitors have reacted to these changes and how many have been more successful or less so?
- 4 How aware are you of changes ahead that are,
  - Likely to occur and imminent?
  - Likely to occur but still some time ahead?
  - Less certain as to whether they could arrive or when?

Commercial history across the world is sadly riddled with many proud businesses that were once hugely successful but failed to recognize or implement the need for change.

**¶1-040 Information or just data**

Modern enterprise has grown up with an ever-increasing scale of potential information sources but have they really gained more information or just data?

In Britain of the mid-1970s, medium and large-sized companies started to introduce computers into the workplace often commencing with punched card or paper-tape readers then quickly moving on to magnetic tape. The infrastructure changes these machines and their storage-hungry devices created were significant in those days. Some examples of additional expenses to be covered included, dust-free rooms with vibration-free insulated flooring and strict temperature control, etc.

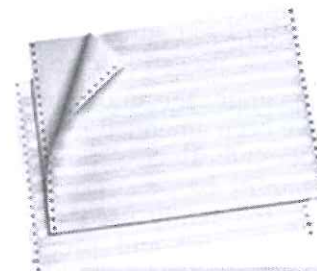
All these lead to increased costs ranging from the initial expensive capital purchases, premises modifications and on-running maintenance costs as well as day-to-day expendables. In addition there were the extra staffing requirements and changes to the way, and the amount of, data to be collected and keyed into the 'great hungry beast'.

Analysis of all this extra data became another challenge for managers and finance teams alike. Finding the time to understand the 'new data' and persuade those still developing their newly won IT programming skills to write output reports that were focused and tailored, were all part of the 'new evolution'.

In 1973, whilst working as a Production Management Accountant for a mid-sized timber products manufacturer, I vividly recall the reams of noisy dot matrix printer generated, green lined paper with its sprocket holes down either edge that clattered its way out of the machines at the end of every week.

Somehow I had to trawl through a stack typically two inches deep (fan folded) to extract the data I needed to go into the weekly production and productivity report: And we thought this was progress!

Tailored reporting had not been considered a necessity and therefore not an option in the package that came with the system. It was part of management accountant's job to analyze data and hand copy [only allowed in pencil] whatever data that seemed relevant, along with summaries, onto forms for secretaries to type out for management. Such data would be revised once or twice before publication, each time being returned to the Secretarial Pool for retyping. This purely administrative process was simply a LEAN Waste activity although we did not know about efficient report writer software then.



COMPOSITE INVENTORY STOCK STATUS HISTORY

DATE	ITEM	QTY	UNIT	PRICE	TOTAL	AVG	MAX	MIN	STDEV	VOL	TURN	WIP	FIN	INVT
1973-01-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-02-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-03-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-04-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-05-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-06-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-07-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-08-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-09-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-10-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-11-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1973-12-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...
1974-01-01	...	...	...	...	...	...	...	...	...	...	...	...	...	...

The next evolution, perhaps it could even be called a 'revolution' came with the advent of the computer-based spreadsheet. A widely used and very well respected pioneer of this technique that became the standard for this activity was called, Lotus 123<sup>10</sup>.

<sup>10</sup> Lotus 1-2-3 is a spreadsheet program from Lotus Software (now part of IBM). It was the IBM PC's first 'killer application', was hugely popular in the 1980s and contributed significantly to the success of the IBM PC. The first spreadsheet, VisiCalc, had helped launch the Apple II as one of the earliest personal computers in business use. Lotus' solution was marketed as a three-in-one, integrated solution, which handled spreadsheet calculations, database functionality, and graphical charts: Thus the name, '1-2-3'. It quickly overtook VisiCalc, as well as MultiPlan and SuperCalc, two VisiCalc competitors. 1-2-3 was the spreadsheet standard throughout the 1980s and into the 1990s. 1-2-3 migrated to the Windows platform, as part of Lotus SmartSuite and later, IBM Lotus Symphony, both fully integrated office functions packages. Lotus was passed by Microsoft in the early 1990s and



Things have moved on of course. We now have sophisticated data systems and can relatively easily tailor reports to our specific requirements and deliver them in different formats electronically if required. But how much is information and how much of this is just data?

Let me take just three common reports found in most businesses, the monthly 'accounts', the standard cost report, and the variance analysis. Please note that the following comments are based on real-world experience gained in both the SME sector and in major corporations:

- 1 **The monthly accounts pack** – what exactly is being reported? Usually it is the outcome of the accounting system's machinations typically known as the 'end of month cycle' or, 'shutdown'. This means, an amount for each account's code in the general ledger or accounting system; some of which are aggregated into groups and reported as a single amount, others shown independently. In either case, there will be a page for each department, cost centre, business unit or strategic operations section.

Amazingly, the amount shown is not necessarily a 'real' figure, it may have been amended making it greater or less than the actual 'ledger' amount for that code number.

Two frequently used adjustments are known in accounting terms as, accruals<sup>11</sup> and prepayments<sup>12</sup>. There may also be 'correcting items' representing adjustments from prior/future periods that have proved to be wrong, either as a result of a misposting, or due to an incorrect value having been input previously, or some other approved adjustment.

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never recovered. IBM purchased Lotus and continued to sell Lotus offerings, only officially ending sales in 2013.

<sup>11</sup> Financial statements are prepared under the Accruals Concept of accounting require income and expense must be recognized in the accounting periods to which they relate rather than on a cash basis. An exception to this general rule is the cash flow statement whose main purpose is to present the cash flow effects of transaction during an accounting period. The inclusion of accruals greatly increases the amount of information on accounting statements (before the use of accruals only cash transactions were recorded on these statements). Accruals provide information about important business activities, such as revenue based on credit and future liabilities, i.e., showing what it owes looking forward and what cash revenue it expects to receive based on sales made on credit. It also shows assets that do not have a cash value, such as goodwill.

<sup>12</sup> Prepayments are payments in advance for goods or services not yet fully received. Management of prepayments - if they have not been received by the end of the financial period the amount prepaid will appear in the Balance Sheet as a prepayment and not as part of the costs in the Profit and Loss account. In the following period the relevant amount that has been prepaid will then be subtracted from the Balance Sheet and added to the costs of the P&L. This way the costs involved will be charged to the correct accounting period.

The result of all these adjustments is called the 'actual' for the period.

These so-called 'actuals' are then compared with the budgeted amounts for the same period – another minefield of management information. Without spending too long at this stage in discussing the merits or otherwise of the typical annual budget process – this is dealt with in much more intimate detail later in this book – let us say that the allocation of an annual budget into a sub-divided sum for each account code for each accounting period is often less specifically precise and more the result of a mathematically-driven formula.

Herein lies one of the most common accusations levelled at the annual budget process – the results do not represent a likely day-to-day reality.

#### Key questions to ask about Accruals & Prepayments

- How well do your finance team understand the need for, and the importance of the accruals and pre-payments process?
- How accurately do you believe these processes are carried out?
- Do managers in other functions across the enterprise fully understand the need for and importance of the accruals and prepayments process?
- Do other managers or functional leaders – beyond the finance function – give full attention to end of month accounting processes?
- If not, what are you doing to improve this situation?

Financial regulators such as FRS, and for use globally, those of the International Financial Reporting Standards (IFRS)<sup>13</sup>, amongst others, approve such 'adjustments'.

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<sup>13</sup> International Financial Reporting Standards. The International Financial Reporting Standards Foundation was established to develop a single set of high quality, understandable, enforceable and globally accepted financial reporting standards based upon clearly articulated principles. They achieve this through the following mechanisms:

- An independent standard-setting board, overseen by a geographically and professionally diverse body of trustees, publicly accountable to a Monitoring Board of public capital market authorities.
- Supported by an external IFRS Advisory Council, an Accounting Standards Advisory Forum of national standard-setters and an IFRS Interpretations Committee to offer guidance where divergence in practice occurs.
- A thorough, open, participatory and transparent due process.
- Engagement with investors, regulators, business leaders and the global accountancy profession at every stage of the process.
- Collaborative efforts with the worldwide standard-setting community.



The result of all these adjustments tends to be called the 'actual' for the period by accountants and managers across the globe.

At this point, let us examine another aspect of confusion for non-accountant managers. As much of the activity of an organization is focused upon providing goods and/or services for customers it seems logical to assume that the sales budget is one of the most important documents to be created.

Therefore, the precision by which the sales team establish their plans for the ensuing twelve months (a typical budget period) should be fundamental to the subsequent operational planning of the enterprise. Incorrectly calculated, erroneous or 'gut-feel' bases will lead to ineffective reporting, resource-wasting and squandering of precious management time, as well as leading to internal inefficiencies and compromising best-practice customer relationship management. Three examples are shown below to demonstrate how the per period figures can vary significantly according to which method of projection is shown.

Sales Forecast A - straight projection (\$HKm)													
Prod/Service Group	Total sales	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
Prod Group A	120	10	10	10	10	10	10	10	10	10	10	10	10
Prod Group B	72	6	6	6	6	6	6	6	6	6	6	6	6
Prod Group C	24	2	2	2	2	2	2	2	2	2	2	2	2
Total sales	216	18	18	18	18	18	18	18	18	18	18	18	18
Sales Forecast B - phased by seasonal (\$HKm)													
Prod/Service Group	Total sales	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
Prod Group A	120	35	25	10	15	10	5	0	5	10	0	0	5
Prod Group B	72	15	20	25	0	0	0	0	1	1	3	3	4
Prod Group C	24	12	4	0	0	0	0	0	0	0	2	3	3
Total sales	216	62	49	35	15	10	5	0	6	11	5	6	12
Sales Forecast C - phased using marketing promotions (\$HKm)													
Prod/Service Group	Total sales	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
Prod Group A	120	25	10	5	15	10	5	0	5	10	20	10	5
Prod Group B	72	11	10	2	0	0	0	5	10	15	12	3	4
Prod Group C	24	2	0	0	0	0	2	8	10	0	2	0	0
Total sales	216	38	20	7	15	10	7	13	25	25	34	13	9



The only way to eliminate this risk is by using reliable scientific forecasting techniques coupled with comprehensive, highly detailed market intelligence. From this valuable base the phasing of the anticipated sales revenue stream(s) can be carefully built up period by period. But what do we see in practice for many organizations? Either a simple division of the total sales budget for the year by 12 periods, or a quarterly phasing based on a previously seen cycle or some other arbitrary basis.

Of course it's not easy to predict what will be sold, to whom and when but that is why successful businesses employ highly skilled sales planners in their teams. The skills they use can easily be learned by anyone in a managerial capacity, even in the SME sector. This is explored in more detail later in this book.

**The Parisienne**

	Actual		Budget		Actual		Budget	
	One Month Ended August 31 <sup>st</sup>	% of Sales	One Month Ended August 31 <sup>st</sup>	% of Sales	Eight Months Ended August 31 <sup>st</sup>	% of Sales	Eight Months Ended August 31 <sup>st</sup>	% of Sales
<b>Sales</b>								
Sales - Food	134,144.15	77.63	126,317.94	79.12	631,368.06	76.20	637,096.51	77.19
Sales - Liquor	38,649.58	22.37	33,857.45	20.88	197,022.16	23.78	185,236.46	22.81
Miscellaneous Income	00.00	00	00.00	00	206.00	02	00.00	00
Interest Income	00.00	00	00.00	00	00.00	00	00.00	00
<b>Total Sales</b>	<b>€ 172,793.73</b>	<b>100.00</b>	<b>€ 162,175.39</b>	<b>100.00</b>	<b>€ 828,596.22</b>	<b>100.00</b>	<b>€ 825,324.99</b>	<b>100.00</b>
<b>Cost of Goods Sold</b>								
Cost of Sales - Food	40,131.30	23.82	44,658.77	34.80	208,758.75	33.06	227,055.39	35.64
Cost of Sales - Liquor	10,211.12	26.42	14,149.83	41.79	64,861.76	32.92	72,001.21	38.25
<b>Total Cost of Goods Sold</b>	<b>50,342.42</b>	<b>29.13</b>	<b>58,808.60</b>	<b>36.26</b>	<b>273,620.51</b>	<b>33.02</b>	<b>299,056.60</b>	<b>36.24</b>
<b>Gross Profit Margin</b>	<b>122,451.31</b>	<b>70.87</b>	<b>103,366.79</b>	<b>63.74</b>	<b>554,969.71</b>	<b>66.98</b>	<b>526,268.39</b>	<b>63.77</b>
<b>Operating Expenses</b>								
Staff Costs	€ 37,650.01	21.76	€ 40,077.84	24.71	€ 209,810.48	25.32	€ 224,687.37	27.22
Restaurant Supplies	5,110.84	2.96	1,358.80	.84	23,298.75	2.81	17,366.23	2.10
Equipment Expenses	2,073.65	1.20	3,060.98	1.89	17,485.04	2.11	20,800.70	2.52
Rent Expense	4,950.00	2.86	4,950.00	3.05	39,400.00	4.76	39,600.00	4.80
Real Estate Taxes	00.00	00	00.00	00	94.66	.01	104.80	.01
Repairs & Maint. Facilities	262.76	.15	3,697.00	2.28	5,613.96	.68	11,247.19	1.36
Utilities Expense	6,285.11	3.64	7,387.88	4.56	47,821.95	5.77	43,065.01	5.22
Refuse Disposal	351.63	.20	537.48	.33	3,015.40	.36	4,365.86	.53
Cleaning & Janitorial	00.00	00	00.00	00	97.92	.01	113.47	.01
Facilities - Other	37.00	.02	487.00	.30	4,220.96	.51	3,834.20	.44
Advertising & Marketing	2,673.18	1.55	2,281.35	1.41	27,569.82	3.33	16,414.32	1.99
Entertainment - Bands/D.J.'s	2,027.62	1.17	1,950.00	1.20	9,518.03	1.15	10,687.39	1.22
Food Comps	00.00	00	5,650.00	3.48	19,215.00	2.32	25,200.00	3.05
Insurance - General	1,278.79	.74	1,808.75	1.12	11,659.72	1.41	12,494.55	1.51
Credit Card Merchant Fees	3,758.64	2.18	3,544.10	2.19	18,609.49	2.25	16,406.17	1.99
Interest Expense	00.00	00	00.00	00	00.00	00	524.98	.06
General & Adm. Expenses	8,447.93	4.89	5,570.23	3.43	39,893.46	4.81	39,086.96	4.74
<b>Total Operating Expenses</b>	<b>74,907.16</b>	<b>43.35</b>	<b>82,361.41</b>	<b>50.79</b>	<b>477,324.64</b>	<b>57.61</b>	<b>484,969.24</b>	<b>58.76</b>
<b>Net Operating Profit(Loss)</b>	<b>47,544.15</b>	<b>27.52</b>	<b>21,005.38</b>	<b>12.95</b>	<b>77,645.07</b>	<b>9.37</b>	<b>41,299.15</b>	<b>5.00</b>
<b>Key Financial Highlights</b>								
Food Costs	40,131.30	23.82	44,658.77	34.80	208,758.75	33.06	227,055.39	35.64
Liquor Cost	10,211.12	26.42	14,149.83	41.79	64,861.76	32.92	72,001.21	38.25
Total Labor Cost	37,650.01	21.79	40,077.84	24.71	209,810.48	25.32	224,687.37	27.22
Kitchen Labor Cost	13,983.30	16.42	16,195.30	12.62	83,433.50	13.21	93,844.57	14.73
Prime Cost Total	67,992.43	39.24	68,808.44	42.32	453,430.99	54.79	523,743.97	63.46

Additionally, there are other demands for content, layout and compliance: 'Financial Reporting Standards'; these are established by *The Financial Reporting Council (FRC)*, an effective, accountable and independent regulator, actively helping to shape United Kingdom, and to influence European Union and global approaches to corporate reporting and governance. It ensures that the FRC is recognized in

the UK, and globally, as independent, credible, authoritative and influential. The FRC effectively engages with, and influences, relevant EU and international organizations and regulatory authorities in other major jurisdictions.

Accounting standards developed by the FRC or, previously, by the Accounting Standards Board (ASB) are contained in 'Financial Reporting Standards' FRS.<sup>14</sup> Soon after it started its activities, the ASB adopted the standards issued by the Accounting Standards Committee (ASC), so that they also fall within the legal definition of accounting standards. These are designated 'Statements of Standard Accounting Practice' (SSAPs). Whilst some of the SSAPs have been superseded by FRSs, some remain in force. FRS' in hard copy can be obtained from [www.frcpublications.com](http://www.frcpublications.com).

**Key questions to ask about financial reporting**

- As a professional accountant, how current is your knowledge of the FRS that are applicable and relevant to your organization?
- How well do your finance team understand the need for, and the importance of FRS?
- How current are your finance team players in their knowledge of FRS (as relevant to their work and responsibilities)?
- Do managers in other functions across the enterprise fully understand the need for and importance of FRS?
- If not, what are you doing about it?

So what does all this mean? It means that managers spend considerable amounts of time discussing monthly accounts reports that show and compare two sets of figures, neither of which represents the real world. In this book we will build a more effective route to better business management, through management accounting.

<sup>14</sup> FRS means Financial Reporting Standards; these are established by the FRC. The Financial Reporting Council (FRC) is an effective, accountable and independent regulator, actively helping to shape United Kingdom (UK), and to influence European Union (EU) and global approaches to corporate reporting and governance. It works to ensure that the FRC is recognized in the UK and globally as independent, credible, authoritative and influential. The FRC effectively engages with, and influences, relevant EU and international organizations and regulatory authorities in other major jurisdictions. Accounting standards developed by the FRC or, previously, by the Accounting Standards Board (ASB) are contained in 'Financial Reporting Standards' (FRSs). Soon after it started its activities, the ASB adopted the standards issued by the Accounting Standards Committee (ASC), so that they also fall within the legal definition of accounting standards. These are designated 'Statements of Standard Accounting Practice' (SSAPs). Whilst some of the SSAPs have been superseded by FRSs, some remain in force. FRS' in hard copy can be obtained from [www.frcpublications.com](http://www.frcpublications.com).



- 2 **The Standard Cost report** – This report can take many different forms based upon many different criteria depending upon industry sector, business size and scale, tradition or norms, and in some cases, personal preference. But exactly what is it telling managers? That's such a good question that I have asked it of different executives many times and mostly without satisfactory value-based explanation.

**Answer these questions about your monthly report pack**

- Have you asked the managers who receive a copy of your month-end accounting reports, how useful they find the data included, the format and the timing?
- Have you asked each manager and person responsible for the application of resources (money, people, equipment, etc.), what they need to know and when?
- Do you know how long it takes to produce your month-end accounting pack?
- Do you know how much it costs to produce your month-end accounting pack?
- How long ago did you last carry out a review of the content of the monthly business update reports – including the finance reports?
- What is the proportion of the monthly reporting pack that is produced automatically by the system and how much is calculated manually and input as adjustments or additional information (as a percentage)
- If you still produce paper-based period end accounts or cost centre reports why not consider converting to electronic versions instead (soft copies) and enabling managers to access and read directly from their desktops.
- If you have converted to non-hard copies, do you know how successful this process is, especially determining how many actually read the reports, how many are printed out (thereby negating any gains) and how the level of enquiries has changed?

Most publishers of these reports will proudly and enthusiastically explain that the Standard Cost Report clearly shows the 'standard cost' of the products being assembled/manufactured - in the service sector, the same but for the standard services offered. In pure and simple terms, it is the equivalent of statistics that purport to represent, 'the man in the street'.

The problem with this is that usually there are very few 'typical man in the street' people in the real world as everyone is very different, both

physically, and from an attitude and psychological profile. Here are just a few examples of what cannot practically exist in the real world:

- i. Hong Kong has one of the lowest birth rates of 1.1 children born to women of childbearing age – what does 0.1 of a child look like?
- ii. According to the CIA World Factbook, the average age is 41.7 – how many Hong Kongers do you know that are 41 years and 255.5 days old?
- iii. 0.2% of the population is Nepalese, how many of these 14,374 do you know?
- iv. Apparently 80% of Hong Kongers claim no religion and yet a large number of religions are practiced across HK.
- v. With traffic density of 600,000 cars (excluding commercial vehicles and public transport) and a population of 7.2 million that means everyone has 0.08 of a car or from another perspective one vehicle for every 12 people (what does 0.8 of a car look like and how useful is it?).

The relevance of the 'man in the street' to the Standard Cost Report is that the standard cost is in reality, more a hoped-for, estimated average standard cost created at one point in time but designed to last for a longer period of time, commonly specified as 12 months. Therefore it is akin to an average in that its relationship to the real, or actual cost will be different at each end of the time period but when the whole period is considered it becomes the mathematical average.

Looking at this in simple terms, it should be obvious that for the first part of the relevant period the price paid for the item should be less than the calculated (average) standard but this will reverse during the second half of the period. In an ideal situation the positive and negative differences – known as material price variances, either favourable or adverse – should cancel each other out by the close of the relevant period. For those of us who live in the real world, we know this is unlikely to be the situation.

In times of price fluctuations, especially when materials are sourced from non-domestic markets and thereby suffer currency exchange changes, the standard can vary from 'actual' frequently.

The example that follows overleaf is a simplified illustration related to material cost for a manufactured product:



## Chapter 4 Costing & Cost Accountancy

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### ¶4-010 The need for cost data in strategic planning

In the previous chapter we explored the minimum required input for successful strategic planning and listed a number of key areas that must be examined. In addition a number of specific areas should be clearly understood:

- Alternative scenario analytics;
- Sensitivity analysis;
- Risk-management examination;
- Customer and market projections;
- Resource availability [people, skills, materials, products/services, cash, equipment & facilities];
- Stakeholder interests;
- Competitor positioning actions and reactions;
- Governmental and regulatory interests;
- Environmental, social and political implications and reactions, etc.



In each of the above there is a cost element. Determining the relevant degree of detailed cost data necessary is a key role for MAs to focus upon. Additionally, whilst there may be elements that cannot be defined accurately, such as future-based, non-contractual costs, the majority of known costs can be accurately assessed.

**Some questions to be considered regarding costs for strategic planning**

- When preparing to commence the strategic planning process – whether as part of the annual budgetary cycle, or as a restructuring/acquisition activity – does your SMT review its cost base to test for accuracy and relevance amongst other key needs?
- Do you include the MA function in your strategic planning process from the beginning and use them as guidance/advisor?
- If not, why not? How much weaker is the strategic planning process without detailed costing used prior to decision making?
- If you do not have a separate MA role, do you include an experienced member(s) of the finance team in detailed costing calculations where relevant within the strategic planning process?
- If not, why not? Even at the highest level [where detailed costing to the nth degree of detail is not required] cost estimation should be as accurately carried out as possible, being based on reliable expertise.

Incorporating the utmost accuracy into the strategic planning process is the only way to ensure a more sustainable future. Accuracy is but one key ingredient in the mix required to maximize the effectiveness of the strategic planning process; the others include:

- a) The costs must be accurate.
- b) Where estimated, the basis used [including any assumptions made] must be clear and as reliable as possible given their relevancy.
- c) When put together, they must support and help to enhance any decision making necessary for the strategic plan to be effective.
- d) Costs should enable comparisons to be made without substantial reworking or adjustments needed.
- e) Costs should be minimized whilst also supporting the desired quality standards of product, service or brand image.
- f) The same rules or procedures must be followed across whole company, even where it operates in different sites or countries

but being mindful of the constraints of countries with differing laws, regulations and cultural or ethical considerations.

- g) Costs should be easily calculable.
- h) Relevant & appropriate important, i.e., avoiding spurious accuracy.

**Some questions to be considered regarding the basic rules for costs**

The following questions should be asked of the SMT, in the boardroom and of each management level:

- Do you believe you understand your company's cost base?
- Do you believe that your company's cost base is consistent?
- Do you believe your company's cost base is as accurate as it needs to be?
- Do you believe your company's cost base is reliably maintained?
- If you have answered No, to any of the above questions, is this based on lack of understanding, lack of accuracy/reliability, lack of trust, or simply missing data/information? Are you taking any action to correct this situation?
- And answer this last question - What would you change and how soon?

Considering the need for cost data in strategic planning further, it is important to understand your purpose; what is it that your enterprise is trying to achieve or deliver. Companies do not always fail due to poor management, market collapse or through corruption but can often fail because they have not matched their cost base to their product or market sector in one or more ways [see box for some of the most common causes].

It is therefore important to both include such costs as will enhance the strategic planning process but also ensure that as an on-going process, costs are managed and controlled effectively. This is not the same as adopting a cost-cutting strategy, which is explored in more detail in the next section.



Common cost-related causes of business failure	
➤	Used too costly materials minimizing margins, and/or damaging cashflow.
➤	Used scarce minerals/materials/precious metals with inelastic prices.
➤	Weak supply chain, e.g., many suppliers, varying degrees of cost/quality/ delivery.
➤	High overhead to output cost to selling price relationship.
➤	Manufacturing plan to reduce costs to low level by maximizing productivity creating high stock & cashflow problems.
➤	Planning used a 'build-to-order' process with long lead time, causing customer dissatisfaction/low repeat business.
➤	Used low-skills Labour and/or worn or inefficient [cheap] tools & equipment creating poor productivity, diminished quality and low morale/motivation affective customer perception adversely.
➤	Failed to modernise the product/image or update tools and equipment to current specifications.

Cost cutting kills! There are many studies to show that such an instruction as, "the strategic plan calls for managers to cut costs by 10% across the board", will have serious adverse consequence on the business in both medium and long-term. It has been repeatedly shown that cost-cutting leads to an increased cost base within nine to 18 months of it being carried out. However, for sustained success at controlling costs, a cost reduction plan is the only way forward [see later sections on costing in this book].

Do you really know all your costs? It is a valid question but when was the last time the SMT embarked upon a rolling plan to examine all key cost areas that are essential for strategic planning purposes in your enterprise? Under LEAN Management, there would be a continuous programme running – Kaizen of course. The following table identifies a number of cost areas where the data must be accurate, up to date, reliable and relevant for use in the strategic plan:

Cost Item	Application/Purpose	Determined by/Source
ACQUISITION COSTS	Costs associated with an acquisition – whether to obtain a new customer, for a new business [for investment or commercial purposes] or a capital purchase. Could include direct and indirect costs.	Includes all relevant or associated costs expended net of discounts; including any installation or special one-off charges/fees, etc. New customer costs include planned marketing expenditure.
ACTUAL COSTS	Important in assessing any production process profitability & comparing by period, against standard cost, or for benchmarking. [More on this later in this book, see chapter five].	An actual amount paid or expended, rather than an estimated or standard cost. Comprises all direct costs including direct overhead.
ADVERTISING/PROMO COSTS	Determining marketing expenditure actual & budgetary needs. Also for product life-cycle costing, e.g., further investment or curtailment decisions.	Direct expenditure on all advertising activities and promotional costs including sums expended as well as PoS <sup>1</sup> materials, Give-aways, discounts & special offers [BOGOF <sup>2</sup> ].
ASSET COST	Predominantly used to value a business by examination of its Balance Sheet, it does not show how much assets are worth but instead shows how much the enterprise has invested in them.	Generally, fixed asset costs are its purchase cost & others to bring it into operation, inc., import duties; inbound freight and handling; interest costs; site preparation; installation and assembly; asset startup testing; fees.

<sup>1</sup> PoS = Point of Sale materials such as banners, display stands, leaflets and promotional literature, etc.  
<sup>2</sup> BOGOF = special [usually] short-term promotions such as, 'Buy One Get One Free'. Or multi-buy packs to encourage buyers to spend more in store.



Cost Item	Application/Purpose	Determined by/Source
BUDGETED COSTS	These costs are generally used for short-term planning purposes or for comparisons with actual costs. Especially useful for determining where cost variances have arisen. These costs should be treated with all accuracy, essential detail and reliability to ensure projects and assumptions included in strategic plans are based on sound data.	Created when the budget process is undertaken & can be based on a variety of sources from current actual costs, historical or period trend [often three years or so], estimates and where necessary [important strategically], using mathematical-based statistical forecasting techniques.
BUYING/ PROCUREMENT COSTS	Purchasing is a strategic SCM <sup>3</sup> activity in dynamic businesses today with greater focus on reducing input costs & eliminating quality/reliability issues.	Typically, the largest component of buying costs is item's purchase price but there may be other costs associated with the procurement.
CAPITAL COSTS	These are part of the costs of financing an enterprise. Refers to equity cost if financed solely through equity, or cost of debt if financed solely through debt. Most use mix of debt & equity so report cost using weighted average cost of capital (WACC <sup>4</sup> ).	Most commonly capital costs are once-off & cover expenditure incurred by buying land/premises, or high-cost/value tools & equipment, or building a plant or structure for business use, or use in a major project.

<sup>3</sup> SCM = Supply Chain Management takes an intensive professional approach beyond simple buying to encompass all aspects of the supply chain from demand through sourcing, operational management to logistics and customer satisfaction. See Section Three of this book.

<sup>4</sup> WACC = A calculation used to measure an organization's capital costs and often associated with risk evaluation or due diligence for investment purposes. The weighted average can include the cost of debt, market value of equity equivalents and the total capital amount projected for business sustainability.

Cost Item	Application/Purpose	Determined by/Source
COMPUTER COSTS	The strategic plan needs to have an accurate figure for capital costs for financing needs as well as reliable forecasts of on-going costs for profit & cashflow planning aspects within the short and medium term	In two parts – capital IT costs and operating IT costs. The former covers buying, installation & commissioning costs. The latter covers the on-going running costs including software updates & program enhancements.
COST-BENEFIT ANALYSIS [CBA]	Technique for deciding whether to make a major purchase or carry out a significant change, or deciding whether to pursue a project.	Costs are either one-off or on-going. Benefits are most often received over time. Most accurate CBA include financial value on intangible costs and benefits [often subjective] & problems of NPV <sup>5</sup> & IRR <sup>6</sup> calcs.
CURRENT COSTS	Provides a more realistic evaluation of business' assets than historical costs.	The replacement cost of an asset valued at present-day acquisition and/or production costs.
CUSTOMER SERVICE COSTS	Balancing costs & benefits is how to view customer service spending; keeping customer retention & brand values high profile in strategic planning.	If service speed is crucial to customer satisfaction, labour & logistics' costs critical. If quality high on customers' agenda, facilities & quality service level costs vital.

<sup>5</sup> NPV = Net Present Value is the difference between the present value of cash inflows and the present value of cash outflows. NPV is used in capital budgeting to analyze the profitability of an investment or project.

<sup>6</sup> IRR = Internal rate of Return is a financial measure for cashflow analysis, often used for evaluating investments, capital acquisitions, project or programme proposals, as well as business case scenarios in terms of an investment perspective of anticipated financial outcomes.



Cost Item	Application/Purpose	Determined by/Source
DATA COLLECTION COSTS	Relevant for a strategic planning decision [buying/ major upgrade hardware/ software] as well as continuing operational costs.	Needs to include capital acquisition costs plus: set up costs; training [live & web-based] costs; support & features bundling extras; loading costs; hosting support cost; data prep [inc systems admin]; data validation and/or verification; power, paper & people costs, etc.
DELIVERY COSTS	Use to determine cost effectiveness of in-house logistics or compare with other sub-contract services.	Collect actual data from in-house activities on vehicle cost [buy or hire/ lease] plus running costs & taxes, divided by usual or projected annualised mileage; include driver costs per driving time.
ENERGY COST	Most essential in strategic planning if a major part of business costs along with trend/projected future consumption requirements	Price of petroleum, coal, oils, renewables & other fuels change rapidly, and are critical data for business so best decisions need current price trend & usage or consumption data. Collect by machine, tool, equipment, and/ or area by users or [say] Ft <sup>2</sup> or Mt <sup>2</sup> .
EXPLORATION COSTS	In oil, gas, ore & minerals extraction, etc., is vital to forecast based on sound geological data, previous history & future demand projections.	Most typically grouped into four sections – acquisition, exploration, development, and finally, production & distribution costs. Further details later in this book.

Cost Item	Application/Purpose	Determined by/Source
FIXED COSTS	These are costs regardless of product/ service quality or volume produced. For planning, these need to be covered by sales revenues before production costs are considered. Usually fixed annually.	Include inputs that cannot be flexed short-term, such as buildings, plant & machinery, insurances, plus some salaries. May not be permanent, e.g., rent or leasing costs.
FORECASTED COSTS	Not all costs can be determined accurately from known data. For strategic plans to succeed they need reliable forecasts of unknowns & projections of trends, etc., using statistical analysis, BI and Big Data.	Various methods used for cost forecasting, common ones - Risk-based, Regression-based, and Performance based methods. Cost drivers and materials pricing needs detailed assessment
FREIGHT COSTS	Where these can be passed on to customers cost must be controlled to remain competitive. If large volumes involved it becomes an important part of the strategic plan.	Actual costs per weight, load or mileage can be calculated from previous patterns and amended by freight industry published data along with global projections of fuel, shipping, handling charges, etc.
FUTURE COSTS	For the strategic plan this is the value of an asset [inc., cash] at a specified date in the future that is equivalent in value to a specified sum at the date of creating the plan.	The usual formula for future cost shows current cost multiplied by the inflation rate for every year of future projected. This practice is important to determine how much resources needed for activities/projects to expend within strategic plan's time frame.



Cost Item	Application/Purpose	Determined by/Source
HEALTH & SAFETY COSTS [H&S]	Creating safe working environment is critical to enterprise success; effects of not including detailed H&S costs in strategic planning can be severe.	Costs must be calculated/ forecasted for providing: <ul style="list-style-type: none"> <li>• safe premises;</li> <li>• safe plant, tools &amp; machinery;</li> <li>• safe materials handling facilities;</li> <li>• safe work methods;</li> <li>• clear H&amp;S info, instruction, training &amp; supervision.</li> </ul>
KAIZEN COSTS	This is the need for every strategic plan to contain a project specifically to improve a number of processes during the planning period; therefore the relevant costs must be allocated in the plan.	'Costs' are the time value of the team set up to plan, carry out and monitor the process improvement projects including any new equipment required as an outcome. Also, the time costs to implement subsequent changes. All of these costs should be considered as an investment, not 'cost'.
INCREMENTAL COSTS	Calculating incremental cost [aka, marginal cost but not identical] will help enterprises to determine most cost-effective production volumes.	The incremental cost is the additional cost for producing one more unit; calculations show the change in production cost if the enterprise produces one more unit.
INTERNAL COST		Generally all those cost expenditures related to admin, organization & control. They are all NVA costs [Non-Value-Adding].

Cost Item	Application/Purpose	Determined by/Source
INVENTORY & STOCK-HOLDING COSTS	Essential to manage cash locked up in stocks & storage. Is also a measure of the sales-production balance and helps provide to inform SMT of planning efficiencies.	<ul style="list-style-type: none"> <li>• Storage charges (rent, lighting, heating/air-conditioning, etc.);</li> <li>• Warehouse staff, equipment maintenance &amp; running costs;</li> <li>• Handling costs;</li> <li>• Audit, stocktaking or perpetual inventory costs;</li> <li>• Insurance &amp; security;</li> <li>• Theft, deterioration, damage &amp; obsolescence;</li> <li>• Interest on capital invested in stock values;</li> <li>• Opportunity costs.</li> </ul>
LABOUR COST	Usually a relatively fixed cost so is a key measure of obligated cash expenditure & critical measure of actual against projected. Is often the 'victim' in any damaging cost-cutting instruction from SMT.	Cost of wages/salaries paid to employees during an accounting period on daily, weekly, monthly, or job basis, plus payroll/ related taxes, benefits (if any), bonuses, incentives, or commissions.
LEGAL COSTS	With zero added-value as seen from the customer's perspective, it's essential to keep it to a minimum & carefully consider legal implications of all actions & defensive costs.	External legal fees can be billed by the hour, flat fee, monthly retainer, as a contingent fee, or a hybrid fee. Internally these are the whole costs of corporate compliance with all government or industry regulations – local, national or global.



Cost Item	Application/Purpose	Determined by/Source
LIFE-CYCLE COSTS	Life-cycle cost analysis (LCCA) is a method for assessing the total cost of facility ownership. Also applied to the life-cycle of products and services. Used to project/forecast costs at each stage of life cycle & predict break-even point.	Includes all costs of acquiring, owning and disposing of an item of capital value. For internally generated goods/services, includes all costs through each stage of the life cycle as they accumulate. These then matched to revenues to determine, continue or revise, or cease.
LONG-RUN AVERAGE COSTS	Represents average cost per output unit over long run, where all inputs are considered to be variable. Leads to lower overall unit costs with expansion.	In the long run, all costs of become variable. The factors of production can be used in varying proportions to achieve increased output. Over long enough time-period larger scale or more efficient plant brought in to produce more output.
MARGINAL COSTS	Marginal analysis helps make decisions about alternatives with limited resource [people, tools, P&M, inventory, cash, facilities, etc.]. Decisions such as being able to answer - at what point do we need one more resource to achieve one more unit of output?	Increase or decrease in total cost of a production run for making one additional unit of an item. Calculated where the Breakeven Point <sup>7</sup> has been reached.

<sup>7</sup> Breakeven Point means the point in the business cycle where the fixed costs have already been covered by the items produced already, and only the direct (variable) costs remain to be accounted absorbed.

Cost Item	Application/Purpose	Determined by/Source
MARKETING COSTS	These costs are what is available to raise profile of the enterprise/brand or its products/services but must be considered as strategic costs not operational ones.	Can include advertising expenses & promotional materials; meals & some entertainment cost whilst hosting clients; brochures & literature; seminars & trade shows; modest gifts; local sponsorship.
MATERIAL COST	Two forms of cost here: 1) Of significant value; 2) Relating to materials used in production. The first need careful planning with a cost-benefits analysis showing RoI & any RM matters. The second are on-going operational control items, pricing decisions, margin analysis & cashflow.	For the first group, any cost item can be included if the enterprise classes it as a major cost item & reports/notes it separately. The second group may just be the actual cost of the material or may include shipping, handling, storage costs in addition according to the enterprise's practice.
NET COSTS	In commerce it is used to see the long-term cost of an item taking its total costs and reducing them by any benefits/gains made as a result of having that item [by comparison, Gross Cost is simply the total cost of obtaining an item].	In Insurance, is total premiums paid minus their cash value and any dividends generated by policy at time the difference is calculated. In medical, is the cost-saving for each piece of clinical treatment as per pre-agreed structure. In commerce, is gross cost of an item, less any benefits gained from owning the item, e.g., gross cost of a machine, less margin on all items produced by that machine.



Cost Item	Application/Purpose	Determined by/Source
ON-COSTS	These enable decision makers to see the whole cost of delivering an output or outcome for the time that work is actually being carried out, beyond the wage/salary cost per day. This provides the true cost paid for the time actually spent.	There are two forms: Cost accounting: It's an expenditure arising in the manufacturing process or the performance of work carrying out work that cannot be charged directly to a specific task, job or work done, so must be allocated in some way to derive a full cost. Employee costs: as well as direct wage/salary cost, add tax, social benefit charges, holiday & sickness allowances to 'gross-up' labour costs.
OPERATING COSTS	The routine costs of running an enterprise & include all costs except those directly related to the product you sell. Some are variable, some fixed. These costs need to be covered by the net value of the products sold or services offered.	Costs collected include sales & marketing costs, rent, inventory, office salaries, supplies and utilities.
OPPORTUNITY COSTS	Used in decision making and is cost of a decision based on what must be given up (the next best alternative) as a result of the decision.  By showing cost of one option against foregone benefits of another, marginal costs & benefits of options can be compared.	The value of next-best alternative needs consider in choosing production potential, calculating cost of capital, analyzing comparative advantages, and choosing which materials to buy or how to spend working time. Every resource - P&M, cash, time, etc. - can be put to an alternative use.

Cost Item	Application/Purpose	Determined by/Source
OUTSOURCING COSTS	Direct costs of investing in outsourcing are only one part as research has shown. Overall cost could be up to 55% higher – transition management, layoff/ redundancies, short-term lower productivity, revising software & overall management time.	Selecting an External Service Provider requires personnel resources and access to data, key processes and procedures. Costs include: Cost of selecting the supplier; putting recommendation; distributing report & discussing; analyzing & short listing; Due Diligence; Obtaining SMT sponsorship; implementation costs.
OVERHEAD COSTS	Without calculating overhead costs, an enterprise cannot know exactly its profits. How overhead costs are categorized depends on the accounting system & procedures. Essential for pricing decision making.	Generally includes all non-direct costs and expenses & can vary depending on corporate culture/practice. Usually includes admin wages/ salaries, power/ utilities, logistics, accounting & audit, HR costs, etc.
PROCESS COSTS	Used to allocate business costs related to each production process, rather than to each individual item. MAs determine the cost of operating each individual function used in the production process.	In simple terms it is the total process cost divided by the number of items produced during each specific function. This value is then allocated to each item produced by the process.
PRODUCTION COSTS	Necessary to manage effective and cost-efficient utilization of resources. Also vital in considering make-or-buy decisions.	Usually the direct costs – materials, direct labour and for some, direct production management/ control costs and direct overhead costs both fixed semi-variable, and variable costs.



Cost Item	Application/Purpose	Determined by/Source
PROJECT COSTS	Whether an internal change management/ BPR type project or for a client on a fixed-cost basis, it's vital to monitor progress and match costs as well as overall project cost to determine profitability.	Covers both direct & indirect costs, e.g., direct includes salaries for project team members; specific project materials, supplies & equipment; travel to carry out work; subcontracts that provide project specific support.  <b>Indirect costs</b> include overhead costs, and general & admin costs.
PROMOTION COSTS	Important to measure this expenditure as detailed in the strategic marketing plan against expected benefits/gains to brand or increased sales revenue.	Part of marketing costs & can be costs for a wide-range of individual activities/ projects – direct expenses & labour costs.
QUALITY COSTS	Whilst quality levels are dictated by customer's needs, cost of achieving it must be acceptable & balanced with profit satisfaction.	Four main areas of QC – Prevention, Appraisal, Internal failure, External failure costs. TQM links all elements. <i>[See specific details of QC later in this book]</i>
RECRUITMENT COSTS	Should not be seen as overhead but as direct cost of working with people. Should be considered part of direct labour costs in service environments & indirect or on-costs in production to see a true labour cost.	Recruitment agency cost typically 15-30% of salary, higher if executive search. Other costs inc advertising, subscriptions to social media and database aggregators, attendance at recruitment shows and the time cost of any in-house admin & interviewing plus 8-10 week's lost output or temporary contractors.

Cost Item	Application/Purpose	Determined by/Source
REDUNDANCY & DISMISSAL COSTS	The enterprise needs to consider all potential cost, inc statutory or company redundancy terms, pay in lieu of notice, National or social obligated insurance, accrued holiday, and outplacement.	The financial terms to be offered to redundant employees may be influenced purely by affordability, contractual obligations or custom and practice.
RESEARCH & DEVELOPMENT COSTS [R&D]	Many analysts see it as positive sign when large amount devoted to R&D costs – is an investment in medium & long-term.	The R&D cost centre/ budget as well as any outsourced to contract research organizations, universities, or agencies.
REMEDIAL COSTS	Remedial cost estimating important in planning to determine resources needed to rectify, resolve knock-on impact & any damages.	Capital, operating & maintenance costs for remedial action includes: Tools/ equipment costs; material, labour cost; for studies, remedial design, site-work and/or utilities. Contingency costs are estimated, including environmental liability.
RESTRUCTURING COSTS	Short-term expense; necessary to make the enterprise more profitable in the long term.	Can arise when needing to make redundancies, close factories or offices, relocate production or write off assets.
RISK MANAGEMENT COSTS	Risk Assessment is not about creating paperwork but identifying practical measures to: a) control risks in your workplace; and, b) protect the enterprise from threats – fraud, corruption, competitor activity, etc.	Costs considered should only be those necessary & sufficient for purpose of implementing the risk reduction measures. On-going production losses as a result of RM, e.g. if activity slowed down or new plant requires more maintenance) included.



Cost Item	Application/Purpose	Determined by/Source
SALES COSTS	High sales costs/expenses can be a serious problem. Calculate & show as a % of sales or net income compared [benchmarked] can indicate management spending efficiency or wasting valuable cash.	Sales cost include sales commission, advertising, promotional materials distributed, showroom rent, sales office(s) rent, salaries & fringe benefits of sales personnel, utilities & sales dep't telephone usage, etc.
SEMI-VARIABLE COSTS	An important area when planning output levels as these costs may restrain profitability at higher production levels & erode bottom line.	Cost made up of fixed & variable elements some fixed for a set level of production or usage, becoming variable after this level surpassed.
SCRAP & WASTE MANAGEMENT COSTS	However the 'scrap' item has arisen, in each case, scrap – along with rework – costs time, money, and possibly your reputation.	Only when the total cost of waste is known will it be managed. These can usually be grouped into material, labour & waste management costs. Raw materials and labour are the most overlooked waste costs.
STANDARD COSTS	Very useful for planning, budgeting & inventory management but not for competitive pricing.	<i>See the section in Chapter 4 on costing systems comparison.</i>
SUNK COSTS	When making business or investment decisions SMT usually look at future costs that may be incurred, as well as money already spent that they cannot get back, e.g., R&D, inventory. Machinery, etc.	Sunk costs are costs that cannot be recovered once they have been incurred & are independent of any future event, e.g., cost & time spent in training cannot be recovered; for direct mail/advertising, etc; specialist tooling.

Cost Item	Application/Purpose	Determined by/Source
TRAINING [LED] COSTS	More organizations [all sizes & sectors] adopted LED/Continuous Learning to achieve employee skills' growth. Highly skilled employees & their continued improvement through training, widely recognized as vital to ensure long-term success and a profitable business.	Costs to be considered include: facilities; Coach/ Instructors; Delegate costs [inc Opportunity Costs]; materials costs & media suitability; if off-site delegate expenses; if internal, cost of designing training; maintaining employees' training records, etc.
VARIABLE COSTS	Fluctuate with volume changes and important to strategic plan to link resource needs according to sales levels planned. If sales are over-optimized resource planning can lead to high inventory and cashflow scarcity.	Vary with output & increase at a constant rate [can be stepped] relative to labour, material & some overheads. Often include wages & utilities, and may include mixed costs - part fixed and part variable.
WAREHOUSING COSTS	This reflects what is incurred over period of time, to hold & store its inventory.	Four main areas for cost of carrying inventory: capital cost; storage space cost; inventory service cost; inventory risk cost.
WARRANTY/ GUARANTEE COSTS	If product is damaged & is returned to company, or if service delivered is inadequate or defective, the enterprise must pay the cost of replacing the item [or redoing the work], or issue a refund. Important to monitor & minimize these costs.	Guarantee usually free & promises to sort out any problems within specific, fixed period of time by manufacturer or selling enterprise. Warranty is like a [usually] paid insurance policy; can be called an 'extended guarantee'. May last longer than a guarantee and cover a wider range of problems.



The reader is encouraged to explore each of the above to determine its relevance to their own enterprise. Where it is deemed important, the appropriate section of this book should be explored with any essential additional research on that cost item carried out to ensure complete awareness.

The above table only encapsulates a number of cost elements that are most commonly seen in enterprises of all sizes and market sectors; it is not intended to represent the only cost elements that should be monitored and controlled by the management team. To produce a list of every cost element is beyond the scope of this book but may appear in a separate edition on costing techniques.

To emphasize the need to take a careful look at all cost elements, the following comments regarding the determination of the total cost of ownership for the enterprise's Data Centre may be of support as reported in a White Paper<sup>8</sup>. In the introduction Rasmussen writes, "Predicting and measuring total cost of ownership [TCO] for the physical infrastructure for network rooms and data centres is required for return-on-investment [ROI] analysis and other business decision processes. In addition, an understanding of the cost drivers of TCO provides insight into opportunities to control costs. Many users are surprised when they consider that the TCO for physical infrastructure may be comparable to or larger than the TCO of the supported Information Technology equipment.

In this paper, a method for determining TCO of physical data centre and network room infrastructure will be described. In this context, the physical infrastructure means all of the facility equipment needed to provide power, cooling, and physical protection of IT equipment but not the IT equipment itself.

There are no recognized standards for measuring the TCO of the physical infrastructure of data centres. Simple methods of summing various capital and operating expense items do provide insight into total cash outlay but they do not account for the utilization of the equipment.

Consider the case of two data centres, each 100 kW capacity and built identically; in one case the data centre is fully utilized to 100% of the space and power capability; and in the other case the data centre has only a single rack with 2 kW of information technology equipment. Whilst the cash cost of operating these two facilities over their lifetime is comparable, the useful return on that investment is totally different. In the totally utilized case, the TCO of the data centre is spread over a large amount of IT equipment providing useful services. In the lightly utilized case, the entire burden of the expense of the physical data centre infrastructure must be borne by the single

<sup>8</sup> Determining Total Cost of Ownership for Data Centre and Network Room Infrastructure; White Paper 8, Revision 4 by Neil Rasmussen. © Schneider Electric – Data Centre Science Centre.

rack. When TCO of physical data centre or network room infrastructure is measured from the point of view of the useful work performed, namely how much IT equipment is supported, underutilization can drive extraordinary cost.

This paper will show that when TCO is viewed from the point of view of the useful work performed, the single largest cost driver of TCO for data centre and network room physical infrastructure is the unabsorbed overhead cost of underutilized infrastructure. The highest return investment that the average data centre operator or 'specifier' can make in relation to physical infrastructure is in right-sizing. The practical and feasible financial return from a right-sizing strategy is quantified.

Most attempts to quantify TCO end up expressing TCO per data centre, per square foot of data centre, or per kW of data centre. These metrics are not useful when considering the useful work performed, and are unhelpful to IT staff in determining project ROI. They don't at all help an individual attempting to determine the TCO associated with the deployment of a new IT application in an existing data centre or network room environment.

One measure of physical infrastructure, which is commonly understood by both facility and IT personnel, is the rack itself. The power, cooling, and area requirements of a rack are reasonably well standardized from a facilities standpoint. The amount of IT functionality and equipment that can fit in a rack is reasonably well understood from an IT standpoint. This has led to the concept of expressing facility infrastructure in terms of 'racks', or 'rack units', which is now beginning to gain wide acceptance. For this purpose, the term 'rack' refers to an open frame rack or rack enclosure, and it also refers to proprietary cabinets such as mainframe computers and large disk systems.

Research shows that the typical data centre is only utilized to 30% of its capacity. Whilst some data centres are utilized to 90% or more of capacity, there are similar numbers utilized to only 10% of capacity. Furthermore, the utilization of a data centre varies during its lifetime according to a relatively consistent pattern. Fraction of utilization, and its variation with time, is an important input into a TCO model.

For a more complete discussion of this topic, consult White Paper 37, *Avoiding Costs from Oversizing Data Center and Network Room Infrastructure*. When TCO is expressed in a per-rack basis, the total cost of the data centre or network room is allocated across the utilized racks. In this way, no unallocated overhead costs are created, and costs associated with data centre or network room physical infrastructure can be more accurately and directly related to the IT infrastructure.

To determine TCO and express it on a per-rack basis requires a significant amount of data, including capital, engineering, installation,



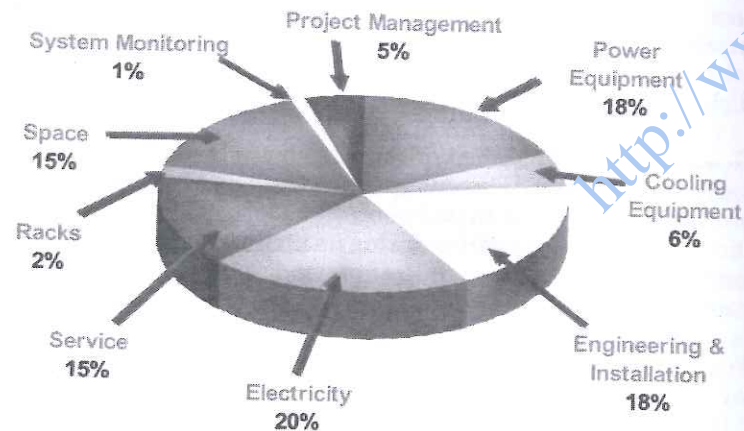
and operating cost data for the various elements of physical data centre or network room infrastructure, as well as design-related parameters such as sq. feet per rack, watts per rack, utilization schedule, expected lifetime, redundancy options, etc.

For the data presented in the subsequent sections, TCO calculations were performed using the Schneider Electric TCO Calculator software application, developed by the Schneider Electric Data Center Science Center. The TCO Calculator was set up to use average costs for capital equipment, installation, engineering and operating costs. The results presented reflect values based on industry and site averages.

To determine TCO data for a typical data center, the typical data center was defined to be one exhibiting the following characteristics:

- Power rating: 100 kW.
- Power density: 50 W/sq ft.
- Life Cycle: 10 years.
- Average rack power: 1,500 W.
- Redundancy: 2N.

Tests confirm that changing these parameters over typical ranges does not materially affect the results or conclusions of this paper.



A variety of strategies to control lifetime total cost of ownership are apparent. These include efficiency improvement, improved planning, right-sizing the system, negotiating costs, self-service, etc. Using the TCO calculator, it is possible to examine the effect that various scenarios have on TCO, in order to identify fruitful areas for investigation and investment.

The per rack TCO savings for a typical 2N data center or network room resulting from a variety of scenarios can be summarized.

**Some questions to be considered regarding your cost structure**

- Of the cost elements shown in the table above that are relevant to your enterprise, how many do you include in your strategic planning process?
- Of those that you do include, can they be relied upon for accuracy, being up to date, realistic and compatible with the strategic vision, mission and objectives?
- Where you are aware of shortcomings in those cost elements used in the strategic plan, what are you doing about resolving these matters?
- For the cost elements that are relevant but you do not have detailed input to the strategic plan, have you quantified the risk that this omission is presenting to the enterprise?
- When are you planning to overcome these shortcomings, remove the risk from the strategic plan and produce a more reliable route to achieving the enterprise vision, mission and goals?

**14-020 The need for accurate cost input for operational planning**

In the table in the above section, the majority of the cost elements so described as being needed for strategic planning purposes, are also just as essential for operational planning. Let us be clear about what the term means:

The strategic plan will have been created to establish direction and drive the enterprise toward achieving its vision and mission. The timeline for this achievement is likely to be a period set in the future, which may be several years ahead [see the illustration].





Whilst strategic planning provides the vision, direction, targets and goals for the enterprise, operational planning moves the process one step further and translates that plan into the routine functions of the organization that delivers the outcomes described in the strategic plan. In reality, operational planning focuses on the production, equipment, personnel, inventory and processes of the enterprise.

**Some questions to be considered regarding your operational plan**

- Do you have a strategically-focused operational plan that defines the operations to be carried out over the duration of the enterprise's strategic plan?
- If yes, is this clearly defined for each of the years of the strategic plan – albeit at a strategic level rather in day-to-day detail?
- If you answered no to the first question, why not? What is your justifiable reason [not excuse] for not mapping out the high level operational requirements for each of the years of the strategic plan?
- When will you rectify this rather haphazard and luck-based approach to business success?

Most commonly the overall driver is that of increasing [or maximizing] profitability. Therefore, from the MA's perspective a major benefit of operational planning is that of being able to analyze the effect of the enterprise's activities on profit. By applying a MA perspective on operational planning it scrutinizes the financial position by identifying activity inefficiencies and overspending. From this detailed analysis the MA can develop amendments and changes to make better use of the resources applied and increase the bottom line.

However, discrepancies between financial and factory-level productivity measures will continue to exist at many manufacturing facilities [and beyond manufacturing into retail or service sectors]. Part of the MA's on-going responsibilities is to establish an improved alignment between these two sets of data. Achieving this can result in improved efficiency, more effective pricing tactics, and product or service strategies that can deliver greater benefits to the enterprise as well as enhanced retained profits.

The Operational Plan can be seen as providing the detailed requirements for the elements of the Strategic Plan than can be likened to the, '...six good honest serving men...' of Rudyard Kipling<sup>9</sup>:

<sup>9</sup> J. Rudyard Kipling was an English author, poet and novelist [Just So Stories, Jungle Book, Gunga Din, and many others], awarded the Nobel Prize for Literature in 1907], as well as being a journalist living in Lahore, India. In his poem, 'The Elephant's Child' he wrote of the importance of asking the right, simple questions; an extract printed here:

**What** – the activities and operations are that must be undertaken.

**Why** – must this be done; why it needs this amount of resource; why these tools, equipment, skills and expertise are necessary, etc.

**When** – the timelines through which activities and operations must be completed and delivered.

**How [much]** – the amount of resources provided to complete each activity and/or operation including the most critical one of financial resource.

**Where** – should each input item be sourced and to where it should be delivered; should the activities be carried out; where should the plant & equipment as well as premises be situated.

**Who** – the individuals who have responsibility for carrying out, supervising and managing each of the activities and operations to ensure achievement of the strategic plan to required quality and timeliness.

All of the above questions need to continue to be asked until the answers that will be used for operational planning can be relied upon as being the most accurate possible. Inaccuracy in any piece of input data will lead to a risk of compromising future operations as the plan is put into effect. Amendments, corrections or essential changes are costly in both time and resource usage and must therefore be avoided. Time spent in ensuring accurate data collection for input to operational plans is always an investment worthy of the time spent.

The sextet of key elements of an Operational Plan: These can be summarized as follows:

- 1) A detailed plan for the application of the enterprise's resources in order to achieve the specified objectives outlined in the strategic plan. The strategic plan must not only pre-exist the operational plan but must clearly state the objectives, the overall time map complete with Gateways<sup>10</sup> and progress reporting requirements.

"I keep six honest serving-men  
They taught me all I knew);  
Their names are What and Why and When,  
And How and Where and Who.  
I send them over land and sea,  
I send them east and west;  
But after they have worked for me,  
I give them all a rest."

<sup>10</sup> Gateways are the clearly defined stages where a part of the plan has been completed and can be clearly verified as to cost, quality, accuracy, timeliness, etc., in accordance with the



- 2) Specifies the individual action and activities that must be carried out at each stage along with any control measures necessary to deliver the quality-cost-profit balance.
- 3) Provides a management plan for the 'day-to-day' operations including key performance measures. Most typically it will be for a one-year time frame but could be shorter in an industry sector that is short-term, such as the fast-food industry.
- 4) There will be clear links to the previously created and agreed strategic plan. These enable progress against expected timescales to be monitored and cost-quality assessments to be checked during the progress of the operational plan.
- 5) Within the concept of the strategic plan's timeframes the operational plans may carry an evolutionary aspect and thereby differ considerably from year to year as the stages of the plan are delivered.
- 6) In most organizations, the operational plan will probably be established and agreed by the CEO and the SMT. There may be input from other managerial levels and from specialist or expert individuals who may be internal staff or external to the enterprise.

Operational plans can carry their own hierarchy that may be period based, cost based, or stage of achievement with a cascade of responsibilities for individual actions allocated to different tiers of management. These plans can be created for both single-use or as on-going plans [sometimes called continuity plans]. A simple example of a single-use plan would include all the activities and cost elements along with performance success indicators for a new product launch campaign. Such plans are intended to be used once only.

On-going plans are established to be used repeatedly or perhaps several times over. These latter versions may undergo changes over time where modification, amendments or improvements become necessary. An easy example of on-going plans is with the annual employee performance review and TNA<sup>11</sup>.

It may be helpful to also mention a term sometimes encountered called, 'Tactical Planning': This is an extended phase of strategic planning. Such plans can be applicable to different levels, departments, functional units or

strategic and operational plans. There is most commonly a 'sign-off' at each Gateway stage to ensure full compliance before further resource is applied to additional processing toward the final objective.

<sup>11</sup> TNA = Training Needs Analysis, which is an on-going programme of learning, education and development [LED] for all employees, generally reviewed once each year and updated according to skills obtained and any new skills required.

projects within the enterprise as they seek to establish the key phases to be achieved to deliver the strategic plan. Tactical plans are typically short-term in nature and describe the overall actions sequence and resources required to meet the strategic vision and mission. For operational planning managers must plan the routine tasks of the cost centre, department or function, using a high level of detail.

Some organizations use Tactical Planning as a stepping stone between the high-level strategic plan and the highly detailed low-level operational plan. Enterprises that have a very open structure with good levels of mutual trust and respect may also include input from employees at all levels in building a strong tactical plan. One of the major limitations of tactical planning - and can be imposed as a criticism of operational planning as well - is the [excessive] time needed to obtain the data, assess, verify and apply. This may lead to a much-reduced time left to actually implement, manage and control the activities. Another disadvantage of tactical planning is that it can cause a slowdown in the enterprise operations, especially if the plan is wide-ranging.

In an SME, there is less likely to be time available nor the need for the three levels of planning from strategic through tactical to operational.

It is worthwhile stressing here the importance of the accuracy of data collection, evaluation and applied usage at each level of the planning. For operational planning to be effective and therefore enable management to deliver the strategic objectives, accuracy of cost input has an impact upon:

- ✓ Maximizing efficiency levels;
- ✓ Maintaining high productivity performance;
- ✓ Minimizing waste;
- ✓ Ensuring input to output resource utilization optimized;
- ✓ Adhering to required completion/delivery schedules;
- ✓ Initiating minimum disturbance to production for tool & equipment maintenance scheduling;
- ✓ Optimizing TNA implementation;
- ✓ Minimizing effective inventory levels;
- ✓ Achieving least-cost to required high-quality product/service levels;
- ✓ Generating Kaizen recommendations for programme initiatives.

It can be seen from the foregoing that an operational plan is vital to the sustainable success of the enterprise because it helps everyone to be clear about what resources are required, where they will be sourced/obtained and



how they will be used in the most cost-effective, efficient manner. This is also supported by a clear understanding of the risks involved and how those risks will be reduced or minimized throughout the operations. The additional benefits of ensuring accuracy of cost input at each and every stage will also facilitate an effective production of contingency plans where necessary for high-risk areas especially relevant when thinking about the long-term future of the enterprise as a whole or any individual projects, including their sustainability.

**Some questions to be considered regarding cost accuracy of the input for operational planning**

- Considering the cost elements of the input for the operational plans, do you know how much is based on accurate, reliable calculations, how much on estimates and how much is just guesswork?
- Where estimates are involved, is the basis consistent with previous methods? Is it a result of statistical analysis? Has it been produced using relevant forecasting techniques?
- Is the cost input for the operational plans rolled up [produced from detailed calculations by managers involved in the activities] or decided upon by the SMT in the boardroom?
- In the question immediately above, if it is the latter, when was the cost input data last verified as being accurate and current as well as incorporating any known future trends/modifications, etc.?

There can be many challenges for the MA and operational managers where large, multi-tiered structures are present such as in a Biotech facility or semiconductor plant. In one such company, the plant had seven distinct production areas and thousands of stock-keeping units [SKUs]. In one laboratory-like section, PhDs mixed customized chemical products by hand. Elsewhere, fermentation and cracking lines processed biologic inputs. In another wing, staffers surveyed a continuous stream of capsules and vials as they passed through a fully automated production line. An assembly line for medical instruments occupied one wing; other areas housed testing and packaging lines. Some product families had hundreds of SKUs because of slight differences in key ingredients or concentrations. Swings in the monthly volumes and mix of production compounded the difficulty of pinpointing cost problems.

An article from McKinsey & Company, *A better way to measure shop floor costs*<sup>12</sup> provides a useful insight into the problems of imprecise

<sup>12</sup> McKinsey Quarterly: *A better way to measure shop floor costs* by Jon Duane, Nazgol Moussavi, and Nick Santhanam with Susan Ringus, Copyright © 2010 McKinsey & Company. All rights reserved.

cost accounting and its distortions, in this extract from their case study they quote,

“This plant was complex but its problems are common. The issues facing its managers resemble those bedeviling myriad processes used in the fabrication of semiconductors, the production of specialty chemicals, and other applications with thousands of SKUs and complex production environments. Similarly, in our experience many managers who oversee shop floors consider traditional cost-of-goods-sold accounting—the widely used measure of operational performance—a blunt instrument. Fixed costs for capital equipment and inventory charges, for example, are averaged across SKU groups, masking changes in variable costs.

When products are scrapped, that could often be due to poor forecasts by the marketing and sales functions, an issue that should be recognized in productivity measures. In most factories, multiple products often pass through the same production lines and share the same workers, making true cost assignments difficult, so the averages applied distort the true cost picture. Volume and mix swings accentuate the problem. Finally, when input volumes rise or fall, costs often don't follow in lockstep, since there's a time lag in consuming inventory.

The effects of getting measurements wrong can be substantial. Without good cost data, it's hard to decide how to price products or even how much to produce. A hazy understanding of which production areas in a plant perform poorly leads to bad investment decisions.

Multiplied across a large corporation's manufacturing footprint, even minor plant-level miscalculations can have a significant impact. That's a serious handicap in the current economic climate, since slower growth and more intense competition put a premium on operating efficiency. In plants we have examined, true costs vary from those assigned by traditional cost-accounting methods by 30 to 100 percent”.

**A new basis for measuring costs**

The plant manager, knowing that he had no time to waste, quickly put together a team of experts, from a variety of functions, with the best knowledge of the plant's processes and costs. The members of the team divided up the tasks facing it. Some undertook full-day fact-finding missions across the plant to get a more detailed understanding of the way processes flowed and the production staff was configured. Others pored over data on the cost of materials, labour, scrap, and overhead. After two months, the group had a plan for tackling the issues.

Clearly, the key was developing a radically-detailed understanding of what happened to costs as the product mix and volumes shifted. The team mapped out three steps to accomplish this goal. First, it would define new



product pathways and sub-pathways – granular ‘factories within factories’ that made it possible to assign costs more accurately.

Next, using a regression analysis of historical data, the team would detail cost drivers for each sub-pathway, an analysis based on past relationships between input costs and output produced. Finally, to account for dissimilar products, as well as for changes in the product mix and volumes, the team would define standardized ‘manufacturing units’ [see below] that would allow productivity to be measured across time periods.

### Using pathways to fine-tune product segments

The team grouped the plant’s product lines into pathways according to their common characteristics, such as the types of workers handling them and the processes used to manufacture them. In some cases, different pathways share labour or machinery. These high-level pathways, for example, separated biologics from chemical solutions and from instrument assembly. To delineate costs clearly, each pathway had its own measure of output: grams of gel for biologics, milliliters for chemicals, and pieces for instruments. The result was a set of distinct product families, each comprising several narrowly focused lines that shared common traits.

### Building profiles of cost drivers

The next step was to identify cost drivers for each sub-pathway to help estimate input costs by the amount of output produced. Team members mined data on materials, labour, capital costs, scrapping charges, and other costs for each sub-pathway’s finely tuned production units. The team used statistical estimates to build these profiles, because materials and labour costs don’t rise and fall in linear fashion as output changes. A 15% increase in the output of chemical solutions, for example, raises total hourly wages by only 10%, thanks to scale economies. To estimate these cost and volume relationships, the team performed hundreds of regression analysis on historical cost data.

With the pathways and information on cost drivers in place, the factory team could accurately assign the amounts of chemical and biological compounds, labour inputs, and in-process scrap that went into, say, the creation of a vial. Take the example of a shop floor area that processed both vials of chemicals and biologic capsules. Traditional accounting averaged labour costs for this area across all the biologic and chemical products that passed through the line; only minor adjustments were made for variations in the mix or in volumes. The new data on cost drivers, by contrast, made it possible to measure labour costs down to a fraction of a penny for each of the more precisely defined product pathways.

### Standardize output with manufacturing units

These new metrics gave a highly accurate picture of how costs varied within each pathway when volumes or the product mix changed. But the team still had no way to get a broad picture of productivity fluctuations across the entire facility and across time periods as mixes and volumes changed. This was an apples-and-oranges problem: as the mix of vials and capsules fluctuated, there was no meaningful way to add vials measured in milliliters to capsules measured in grams across time periods to get a baseline output figure.

With pathway and cost driver analysis, the team could assess productivity change across periods by modeling the predicted production costs of each pathway and comparing them with actual incurred costs. To solve the apples-and-oranges problem, the team denominated these input costs in standardized manufacturing units, which allowed costs at the most granular levels to be rolled up to pathways and, critically, to the site level. This approach provided the big picture on costs and changes in productivity.

Although the implementation of better measurement methods may vary by factory, five principles apply across most facilities:

1. Supplement the reporting of monthly financial metrics with daily operational ones.
2. Invest judiciously in new IT.
3. Invest in training.
4. Seek broad support and “ownership” to push change.
5. Track performance against a dashboard of key performance indicators.

What about productivity? An analysis based on manufacturing units showed that it had risen by 5%. While the product mix had shifted substantially, total output, as measured by manufacturing units, had risen by 3%; the inputs used to produce those manufacturing units had fallen by 2%.

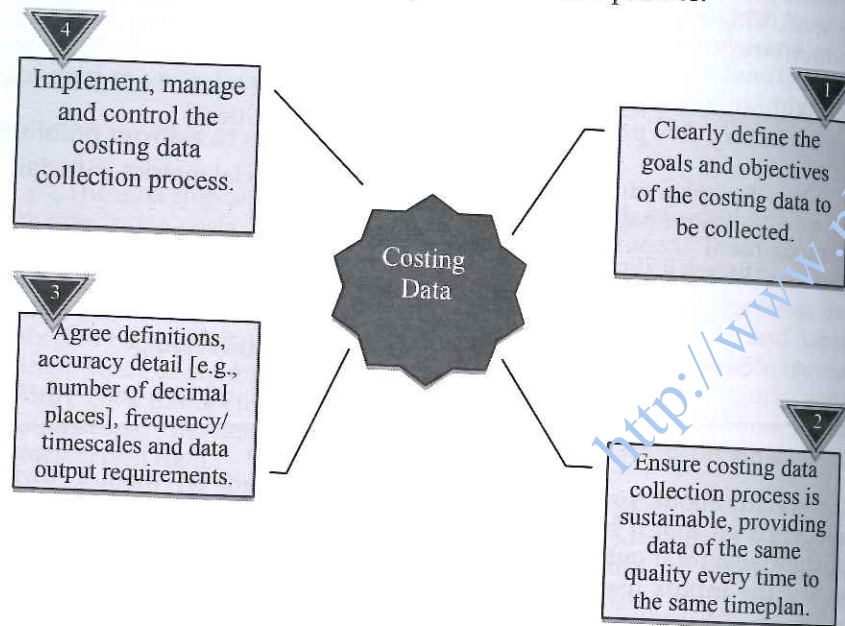
In the wake of the recession, the demand for increased operating efficiency remains high. But disparities between financial and plant measures of costs and productivity exist at many manufacturing facilities. A better alignment, based on the enhanced gathering and analysis of data, can improve efficiency and provide a stronger foundation for pricing and product strategies.



### ¶14-030 Collecting costing data from internal and external sources

There are a vast number of sources for the collection of costing data from across the various areas of the enterprise some of which will have greater reliability, more accuracy and will be easier [therefore more cost-effective]. Unfortunately one key ingredient in this mix is often missing leaving the outcome less than useful for decision making or planning. Checking everyone linked either directly or indirectly truly comprehends the use to which the data will be applied, and therefore its significance, is how this will be delivered.

The starting point for collecting costing data is to ensure that the enterprise has an efficient, reliable, sound and verifiable data collection process. Ensuring four crucial steps are incorporated into the process will help to confirm that the data is reliable and can be used for costing and planning purposes without risk. The following illustration shows the four cornerstones for driving the costing data collection process:



It is useful to look at each of these four cornerstones in more detail:

**Cornerstone 1:** Define the costing data's ultimate process objectives. This begins with a brief description of the requirement or purpose of the process including the specific costing data that is needed and why it is required along with its importance and the risks of wrong/incomplete/inaccurate data collection. It is also helpful to all involved to state how the costing data will facilitate a more stable enterprise from the strategic plan through to the day-to-day operations.

At this phase it is also important to ensure all involved in the specification of the data collection system [including validation and verification] are clear about what will be done with the data once it has been collected at each point, and what happens to the original source data - to ensure an audit trail completeness - should also be mandated.

As much time as possible should be invested at this stage to maximize the potential of achieving the accurate and efficient collection of data.

**Cornerstone 2:** This is where the cost data definitions and techniques to be applied are specified in detail by the MA or by a working group set up to bring the process through to a successful conclusion. Within this challenge the MA or group will need to overcome a number of challenges including, how any performance criteria and/or quantifiable values will be given, so as to facilitate measurement. Other aspects to be considered and agreed upon at this point are:

- Clearly define and gain acceptance for all the applicable definitions, procedures and guidelines that will be used in the project – try to minimize the number of terms that cannot be closely defined. This avoids the many danger arising from decisions being based upon misinformation.
- The number of activity observations needed and at which stages of the process should they be measured and for how many repeats.
- Consideration needs to be given to the impact of historical data and whether it is still relevant or should be considered obsolete due to new methods, skills, materials or machines now in use.
- Part of the planning stage that must be given due discussion is the consideration of what data collection techniques to employ, i.e., how it will be gathered and input to the system [almost certainly a digital-based system in today's fast-paced world].
- The start to finish timescales need to be allocated to the project and any time-period breaks that may be necessary to minimize work disruption, etc. Within this and the previous three bullet points a contingency plan with risk management should be established.

To ensure success it is vital to ensure there is a complete understanding and agreement on the data collection process. Paying insufficient attention to this cornerstone can lead to confusing and/or ineffective outcomes, especially if structural or procedural changes are involved in affecting data collection. As should be recognized by MAs and managers at all levels, significant challenges could arise if business decisions are made based on information or recommendations originating on unreliable data.

Where cost data is collected from historical sources as part of the data analytics it is important to validate the reliability of that data. Such verification



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**SECTION FOUR: RECOMMENDED SOLUTIONS &  
APPENDIX FOR PART TWO**



## Recommended Solutions

The following pages provide guidelines and suggestions in response to the questions posed in each chapter. This section works best if the reader tackles each question for themselves within the concept of the discussions preceding the questions and prior to turning to this section for a possible solution or guide. It should be noted that in answering the questions, the reader should consider their responses from the perspective of their own enterprise, and, as it currently, actually exists, rather than how it should function, or is meant to work, according to some internal manual.

There are always going to be exceptions and no guidance of this nature can hope to cover every eventuality or account for every intrusion, challenge or nuance in commerce. Specific or individually focused support may be necessary in some rare situations: Always seek out a specialist or a professionally qualified person who is backed up by a major global body, such as the Chartered Institute of Management Accountants [CIMA] who's requirement for its members is soundly placed upon practical experience, expertise and application of techniques in the real world of modern, dynamic, global business.

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## CHAPTER 4 – COSTING & COST ACCOUNTANCY

### **Some questions to be considered regarding costs for strategic planning**

164. When preparing to commence the strategic planning process – whether as part of the annual budgetary cycle, or as a restructuring/acquisition activity – does your SMT review its cost base to test for accuracy and relevance amongst other key needs?

*Every MA, CFO and SMT member should know that the strategic planning process is about determining what's best for the enterprise in moving from its current position to attaining its vision. Clearly, if the starting point is wrong [assessment of current position] then the strategic plans will be inappropriate and possibly damage the enterprise.*

*It is essential that a review of the current assumptions relating to the cost base – both direct and indirect costs – is undertaken and in as much detail as time and systems allow. The MA should work with the operations team – this review should not be carried out at SMT level as the awareness of detail is not sufficient [despite the SMT's personal beliefs and/or egos]. Ensure known facts and estimates of uncertainties or allocations of costs are soundly based; verify and validate accuracy; consider any future changes or impacts that may affect the cost base.*

*Only once this detailed review has been thoroughly completed should the strategic planning process continue to map out a route towards vision attainment. Any shortcuts to these processes will place the enterprise at risk, waste resources, likely to incur additional costs and produce a sub-optimal bottom line.*

165. Do you include the MA function in your strategic planning process from the beginning and use them as guidance/advisor?

*A professionally qualified MA is able to assess performance realities and match to needs, understand cost behaviour and provide recommendations for maximizing profitability as well as being an invaluable link between financial controls/regulatory requirements and operational needs.*

166. If not, why not? How much weaker is the strategic planning process without detailed costing used prior to decision making?

*Large or small, all organizations need the benefits described above.*

167. If you do not have a separate MA role, do you include an experienced member(s) of the finance team in detailed costing calculations where relevant within the strategic planning process?

*Working in a number of SMEs over the years I have seen costing carried out by R&D directors, Sales directors, Production directors, even an MD*

*[who had never had any accounting or costing training]. It is astounding how so many C-suite executives treat product or service costing so lightly as to ignore those with costing or financial training [perhaps because such individuals are not high enough in the structure, perhaps because of ego, perhaps because they simply believe they should be the ones to do such important work due to their 'seniority', or some other invalid reason].*

*In one case the MD and Sales directors jointly 'calculated' the costing for a new product and then put it into production complete with marketing literature and marketing initiatives for global promotion. They did all this without informing the Cost & Management Accountant who only found out when asked by the FD to set up the cost structure on the inventory management system. In doing so the MA discovered that the price they were to sell the product for did not cover all the costs of manufacturing, production and admin overheads. A short-term financial crisis ensued!*

168. If not, why not? Even at the highest level [where detailed costing to the nth degree of detail is not required] cost estimation should be as accurately carried out as possible, being based on reliable expertise.

*It is essential to maximize the use of people's skills and expertise; to do otherwise would be to effectively be wasting the costs of their employment, which is most inefficient. A further reason is that of being able to consider input from a number of sources to be sure that the most cost-effective decisions are made. No one person has all the answers.*

*Cost estimation does not mean guessing or averaging past data. Where actual, real data is not available a projected cost should be calculated and there are several tools that can be used to ensure this is as close as possible to the likely cost including, Expert Judgement; Analogous Data; Parametric modelling; Bottom-up calculating; Three-Point PERT; Reserve Analysis; Total Quality Cost Assumption; Evidence-based scheduling; Weighted Micro Function Points; Wideband Delphi; Constructional Cost Model [COCOMO].*

### **Some questions to be considered regarding the basic rules for costs**

The following questions should be asked of the SMT, in the boardroom and of each management level:

169. Do you believe you understand your company's cost base?

*This does not just mean knowing what the costs of various products or service offerings are but also how those costs are compiled including cost relationships. It should also include an understanding of how costs can change following supply chain movements, the influences of the marketplace and/or cost and price elasticity. A further key area of cost understanding is in relation to volume changes and the true costs of inventory management.*



170. Do you believe that your company's cost base is consistent?

*Each element of cost should be calculated using the same rules and principles – consistency is essential. This is applicable to material prices, labour costs and overhead charges. Each product or service offering should carry all the costs that are relevant to the ability they have to deliver customer satisfaction.*

*Where costs cannot be specifically defined any cost estimating must be fair, equitable and consistently applied across the range of products supplied or services delivered.*

171. Do you believe your company's cost base is as accurate as it needs to be?

*See the previous answers immediately above.*

172. Do you believe your company's cost base is reliably maintained?

*There is a challenge here for most companies, that of deciding how frequently cost changes are rolled-up to generate a more current cost. In today's dynamic markets materials, component and sub-assembly prices are subject to frequent variation for reasons of political instabilities, stock markets gambling/hedging, and the basic laws of economics. In addition, there are ECNs [Engineering Change Notices following a revision to the way an item is to be produced], new tools, systems and processes that can change the time taken to deliver the outcome(s).*

*The majority of organizations consider the evaluation of the change and if [relatively] insignificant to the effects upon the bottom line, will leave these changes to a once or bi-annual roll-up/revision. Where the cost change is more significant, the cost implications may be incorporated either by system changes or supplementary reporting.*

#### **Some further questions to be considered regarding the basic rules for costs**

173. If you answered No, to any of the above questions, is this based on lack of understanding, lack of accuracy/reliability, lack of trust, or simply missing data/information? Are you taking any action to correct this situation?

*Carefully consider why you may have answered 'No' so that the root cause(s) can be agreed and then an action plan can be created [cross functional ones are often the most effective] to reduce or remove this risk to the planning and management processes.*

174. And answer this last question - What would you change and how soon?

*See the response to the question immediately above.*

#### **Some questions to be considered regarding your cost structure**

175. Of the cost elements shown in the table that are relevant to your enterprise, how many do you include in your strategic planning process?

*It is recommended that you should include all that are relevant to your enterprise and its planning needs. Where others [relevant] are not included, how can you be assured that their exclusion is not placing a risk to either resource allocation or bottom line stability? Take action now to ensure that even where exact costs are not known, a sound estimate or projection is included.*

176. Of those that you do include, can they be relied upon for accuracy, being up to date, realistic and compatible with the strategic vision, mission and objectives?

*Whilst the normal process may be to revise costs only once per year – although many of today's MNCs using their sophisticated software systems revise at least twice – it is recommended that a rolling programme of continual examination and validation of major cost items is conducted [Kaizen]. The focus could either be by product or service offering, or it could be by volume sold, or by high inventory value, or high/low profit margin – your MA can advise the SMT.*

177. Were you aware of shortcomings in those cost elements used in the strategic plan, what are you doing about resolving these matters?

*Please refer to the responses from 169 onwards.*

#### **Some further questions to be considered regarding your cost structure**

178. For the cost elements that are relevant but you do not have detailed input to the strategic plan, have you quantified the risk that this omission is presenting to the enterprise?

*Please see the response to question 115 and from there an estimate or projection of the risk can be quantified.*

179. When are you planning to overcome these shortcomings, remove the risk from the strategic plan and produce a more reliable route to achieving the enterprise vision, mission and goals?

*Having identified that the risk exists and/or that there is a shortage of accurate, current, reliable cost data it would be inadvisable [foolish] to delay the implementation of an action plan to overcome this risk. Whilst time may be in short supply, it always will be. Prevarication is only to delay the inevitable – acute enterprise failure or disaster.*



**Some questions to be considered regarding your operational plan**

180. Do you have a strategically-focused operational plan that defines the operations to be carried out over the duration of the strategic plan?

*This plan will provide an outline of the output volumes that will be required, item by item, market by market for each of the time periods covered by the strategic plan. From this a resource requirements schedule can be established [recommended to be in high-level outline if the time horizon is greater than one or two years] and following this a cashflow projection.*

181. If yes, is this clearly defined for each of the years of the strategic plan – albeit at a strategic level rather in day-to-day detail?

*See the response to question 180.*

182. If you answered no to the first question, why not? What is your justifiable reason [not excuse] for not mapping out the high level operational requirements for each of the years of the strategic plan?

*It should be apparent from the text in the section [4-010] and the responses to the questions from 175 to 180 that it is very important to the sustainability of the enterprise to be able to 'see' into the strategic future. Such vision will highlight challenges and problems ahead as well as help to provide clarity of route and direction, which may need to be refocused in some areas from the original route map.*

**Some further questions to be considered regarding your operational plan**

183. When will you rectify this rather haphazard and luck-based approach to business success?

*The only recommended response is, Now!*

**Some questions to be considered regarding cost accuracy of the input for operational planning**

184. Considering the cost elements of the input for the operational plans, do you know how much is based on accurate, reliable calculations, how much on estimates and how much is just guesswork?

*In most organizations accurate, reliable cost data is not available for every single cost item. The difference between success and lack of success in cost accuracy is how the missing data is handled. As has been seen in a previous response, there are many MA tools available so no excuse exists for taking the lazy way out and just guessing [see question 168].*

185. Where estimates are involved, is the basis consistent with previous methods? Is it a result of statistical analysis? Has it been produced using relevant forecasting techniques?

*For business trend analytical needs it is always preferable to use a consistent methodology and basis for estimating cost and/or performance data. To do otherwise would be like comparing apples with pears – one commonality [fruit] but many other differences.*

*However, situations do change and new tools or techniques may become helpful. Where there is a change to the basis it is initially advisable to calculate the estimates using the previous and the revised method so that the difference can be understood as well as its implications [past, present and future].*

- a) Is it a result of statistical analysis?

*It is always preferable to use a proven statistical basis for calculating estimates of costs for the reasons of consistency, reliability and as a basis for forecasting projections.*

- b) Has it been produced using relevant forecasting techniques?

*There are a considerable number of MA forecasting tools available including, qualitative vs. quantitative methods; Average approach; Naïve approach; Drift method; Seasonal naïve approach; Time series techniques; Causal/econometric forecasting methods; Judgemental methods; AI methods, as well a other methods.*

**Some further questions to be considered regarding cost accuracy of the input for operational planning**

186. Is the cost input for the operational plans rolled up [produced from detailed calculations by managers involved in the activities] or decided upon by the SMT in the boardroom?

*Much research has been carried out into top-down and bottom-up planning with benefits of both in different structures or under certain circumstances. However, in terms of cost data, those who are actively involved in operational activities almost always have a more detailed understanding of how costs arise, the influences upon them and the reliability of cost data.*

*The Cost Accountant or MA, working in partnership with operational managers will always produce more accurate and reliable cost data than those in the boardroom working in isolation. It should also be remembered that almost without exception computer-based cost structures are inaccurate either due to omission of data, or commission or input errors.*

187. In the question immediately above, if it is the latter, when was the cost input data last verified as being accurate and current as well as incorporating any known future trends/modifications, etc.?