

CGMA TOOLS

How to
turn data
into decisions

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Two of the world's most prestigious accounting bodies, AICPA and CIMA, have formed a joint-venture to establish the Chartered Global Management Accountant (CGMA) designation to elevate the profession of management accounting. The designation recognises the most talented and committed management accountants with the discipline and skill to drive strong business performance.

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INTRODUCTION

Making decisions and taking action is fundamental for all management. The development of a global marketplace with competition from non-traditional sources has increased and continues to increase the number and frequency of decisions managers are required to make on a regular basis. The risk of making a poor decision has never been higher, nor has the number of required applications for analytical tools.

In addition, as technology has changed at an increasing rate, financial decision-making tools have been adapted to an ever-widening array of situations. The advent and expanded use of computers virtually assures the existence of volumes of data at any time. At times, the

sheer volume of data can confuse and delay decisions. Selecting and managing the significant data (evidence) and transforming it into information are important to making good or accurate decisions.

Royal Dutch Shell adds 15% to net present value using management accounting approach and skills

For the past four years, Royal Dutch Shell has engaged on a mission to improve the way it handles strategic and operational data about its energy projects around the world as a way of facilitating better strategic planning.

The system has helped inform a multi-billion-dollar portfolio management and acquisition programme due to the greater insight and granularity it provides and helped increase Shell's net present value by over 15%.

In an initiative spearheaded by group CFO Simon Henry, the company brought together data from some 1200 projects and opportunities across 40 countries. The idea was to implement a single system that would enable Shell to define strategies for asset groups and clearly report on risk profiles and likely returns.

Henry's team grouped projects by strategy type and then worked on developing a single system

that would ensure each class of project could be clearly reported on around the corporation and at board-level, with a workable economic model.

The approach meshes strategy with management accounting principles. Cash is king, says Henry, so financial and operational data is held together with the common language of cash flow, value and risk.

Bringing the information together was a vastly complex task, given the diversity of Shell's product portfolio, market sensitivities and the political risk associated with some locations. However, the system—operational in one year and efficient enough for external analysts to rely on its outputs in three to four—gives the executive committee greater clarity on where they should allocate resources and gives the board a better sense of current and potential performance. "We brought the data together and it was an eye-opener to look not just at what our assets were but also how the economic performance of our assets or opportunities in each strategic 'bucket' or asset class play out," says Henry.

A SYSTEMS APPROACH

Decisions are not made in a vacuum, but are products of the entire organisation. Successful decisions require a disciplined process for managing the resources of the organisation. Problems have become more complex. Therefore, it is vital that managers understand the influence that structural blockages can have to either slow down or destroy the decision-making process. A silo mentality can develop. An idea that does not neatly fit into a specific category or function can be quickly discarded.

A systems approach to decision making often incorporates “soft” variables, such as attitudes and beliefs (see box 1 on next page). While these variables are not easy to quantify, or even recognise, they have a significant impact on the decision-making process. The key components to consider are summarised as follows:

1. **Perceived risk** – Each of us has a unique risk profile. Tolerance for risk plays a major role in many of our decisions. This is also true of companies. Based on past corporate experiences and a number of other factors, decisions are made which determine the organisation’s future.
2. **Inertia and bias** – After a decision is made, the activities initiated from the decision can take on a life of their own and be blindly followed to their conclusion. This can occur even if subsequent events have modified the desirability of that conclusion. Bias can result for a number of reasons, including inertia and past experiences. Both prior failures and successes will form a bias toward future decisions.
3. **Organisational structure** – Be aware there are significant forces at work in every organisation to protect the status quo. Large organisations are typically set up in a hierarchical structure, which is designed with a number of objectives, including the protection of its current assets and businesses. Small venture organisations usually are in higher risk businesses and often dedicated to change.
4. **Reward systems** – Compensation systems and their effects on people are dynamic processes which can greatly assist in attaining or frustrating an organisation’s goals.
5. **Paradigms** – Question paradigms. Look outside your company and industry for ideas. Typically, people who disprove old paradigms are those that have no investment (outsiders) in the current situation. Acceptance of a scientific approach to solving problems can be key to eliminating this type of blockage.

Box 1: Behavioural Finance

The study of behavioural finance has exploded in the past decade. Behavioural finance attempts to explain how emotions and psychology influence our investment decisions. The famed investor, Warren Buffet, often comments that a successful investor needs a temperament to control urges that lead to trouble in investing. Psychologists have identified a tendency in people to think they have control over events even when they do not. This can lead them to imagine trends when none exist, or believe they can spot a pattern and thus predict the future. The toughest part of investing is not the intellectual analysis, but the emotional aspects.

Some of the factors which significantly influence our interpretation of data, and therefore decision-making, fall into the following areas:

- **Anchor Effect** – Often a disproportionate weight is given to the initial information we received. This is particularly true if it supports our position. The situation can be further complicated if the initial data is shared with others and used to form a “preliminary” view. At this point inertia can take over.
- **Overreaction to Random Occurrences** – We tend to look for systematic patterns in data. While often underlying patterns do exist, sometimes so-called random events are actually random. Constructing a relationship which does not exist among data points results in our decisions being systematically wrong.
- **Overconfidence** – It appears that there is a human tendency to be overconfident in our abilities and knowledge. Overconfidence will ultimately result in mistakes, often of a significant size.
- **Optimism** – Another human trait. Optimists underestimate the potential of bad outcomes. A series of modestly, but consistently core optimistic assumptions can, when combined, make a forecast overly and dangerously optimistic.
- **Follow the Herd** – Following widely known actions by others. This provides a false sense of comfort to people that they are not alone. In addition, if their actions fail, they can make comments such as, “No one knew.” While this behaviour may provide comfort, it rarely leads to success or changes to the status quo. Remember, the old saying, “The fool does what the wise man did first.” Based on a study by Money magazine (July 2006), just before the 2000 crash, Wall Street analyst “buy” recommendations outnumbered “sells” by 37 to 1. The same article noted, only 5 out of 40 economists surveyed in June 1990 forecasted that year’s recession.
- **Loss Aversion** – People feel the pain of loss considerably more than the pleasure of an equal gain. This can be magnified by a misdirected reward system, which rewards even small short-run gains, and severely punishes reasonable and promising, long-term actions which fail. In such a case, innovation will suffer.
- **Endowment Effect** – People tend to value things more once they own them, no matter what has happened to their actual worth. To test this, ask a person about the value of their house or a stock after a significant drop in the market.

PROBLEM SOLVING TOOLS

Especially in a global economy, markets are dynamic and, therefore, are in a constant state of change. Products trend toward becoming commodities at an increasing rate of speed. Even those once seen as specialty or high-tech items can quickly move toward commodity status. Current competitors are continuously improving their processes, products and services. In addition, new entries can enter the market with products which either directly compete with you, or indirectly reduce demand for your product.

These competitive pressures present challenges in any economic environment. Difficult economic conditions put an even sharper edge on competitive demands. These dual forces put increasing pressure on pricing, which, in-turn, places pressure on development, production, delivery, and service costs. In this environment, management constantly looks for signals of events which will impact their competitive position. This can be in the areas of new products, competitors, or a new way to produce or deliver existing products.

Managers are constantly called upon to make decisions. Therefore, the outcome of analysis must have a direct implication for management's actions. Analytical tools and techniques cannot provide the entire basis for every decision, but using the right tool provides the discipline required when faced with complex problems.

These tools were selected based upon their applicability in a number of situations. Using these tools can provide several benefits including:

- Assistance in discovering the underlying causes of problems.
- Gaining acceptance of decision-making techniques by a large group of people.

The purpose of these tools is to increase your long-term potential for making the right decisions. This is the "science" part of decision-making. The "art" comes from interpreting the information and linking it in a unique way, thus providing insights missed by others.

ESB cuts costs by 20% while upping customer satisfaction by 79%

Achieving significant business savings is difficult in most circumstances. Cutting a cost base from €250m to €200m over five years is remarkable by any measure.

ESB Networks, part of Irish utility Electricity Supply Board (ESB), achieved savings of this order over a five-year cost cutting programme. Paul Stapleton was financial controller at ESB Networks at the time and led a strong and focused finance team. Driven by a regulatory price control, the initiative started with an assessment of costs and their drivers across ESB Networks.

Using management accountancy techniques, Stapleton and his finance team adapted the costing model already used at ESB to categorise labour costs in a more detailed way than previously. With finance people embedded within the business the finance team were able to talk to line managers and gain an understanding of the kind of work being carried out, its costs and constraints.

Next came the task of implementing the changes. Stapleton and his management colleagues established a performance improvement programme, identifying ten areas where cost was out of line or a step change in performance

was needed. "There was improvement needed in every area and we captured that in a general way through the annual budget process: we year-on-year ratcheted down the amount allocated to each area," he explains.

Achieving traction with the programme meant changing people's behaviour. Analysis showed that ESB was at times shouldering costs for faults caused by third parties—builders or developers damaging cables, for instance. Here the onus would be on frontline ESB technicians to identify the cause of the fault, but technicians would find the paperwork onerous. "Technical staff want to be doing technical things. They do not want to be doing administrative processes. So we made the administration much easier and centralised some of the work."

Working with colleagues in HR and line managers, they also introduced a performance-related reward programme, with a bonus directly linked to delivering targets, which helped to communicate their importance across the business.

Improvements in delivery and processes helped to increase customer satisfaction, which rose 2% year-on-year, as well as cost efficiency at ESB's call centre. "By improving our own processes we were able to significantly reduce the volume of calls coming in."

TARGET COSTING

The time between a product's introduction and market saturation has been significantly reduced for a wide range of products. As competitors enter the markets, pricing pressures can stop a producer from achieving sufficient margins or market share.

Market shifts during a product's development can make it obsolete or inappropriate for its original target market, even before its introduction. Cost reductions by producers of similar or substitute products, can result in a new product being non-competitive at an early stage in its life cycle.

Target costing is a discipline process to address this environment.

Target costing provides a framework to continuously focus attention on the dynamics of the market, a product's features and production or delivery or service costs. It helps us to be customer-centred. Target costing begins with market analysis and R&D and continues through the complete life (disposal or service termination) of the product. It focuses on the lifetime cost of a product versus its purchase price. This forces management to address four key questions:

1. Does the product meet a market need?
2. Are there modifications to the product which would provide increased value to customers?
3. Can or do we provide it at a cost which gives value to the customer?
4. What products are we competing against; is our competition changing or improving?

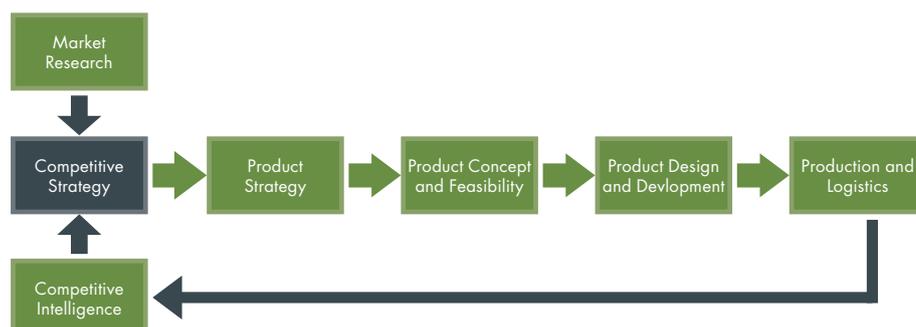
Figure 1 provides a general series of steps in the target costing process. It begins with the customer and designing a product (good or service) which meets a current or anticipated need. The process focuses attention on the cost and value over the product's life, from design to disposal. For example, when we purchase a car battery there is a built-in cost for the disposal of the old (lead based) battery. The cost of a car not only includes its original price, but gas consumption, maintenance, and the ultimate trade-in (sale) value.

Target costing begins with the customer and immediately examines the design process.

Various studies indicate that 80–95% of the total cost of a product is determined by its design. Therefore, to be efficient we must focus on R&D and design efforts to achieve customer satisfaction and maximum efficiency. It is simply too late to wait until the product enters production.

Target costing provides the systematic approach needed to answer the four questions concerning value to the customer and marketplace changes. It involves all members of the value chain (design through follow-up services).

FIGURE 1: Target Costing



PROCESS MAPPING

Process mapping is a tool that provides a more focused look at a specific part of a larger system or process. A process map provides a picture of the current situation. In its simplest version, it shows the current flow of work including interfaces and bottlenecks. It must include all physical and technological flows (people, paper, and electrons).

Mapping is often done by a cross-functional team, where people map that portion of the process they know best. Be careful. Draw what actually happens, not what you think or want to occur. It is a snapshot of reality. Map the process while you are performing the tasks. Even if it takes longer than you originally planned (more cycles). Do not rely on your memory!

For best results, use a long roll of paper for the final map. Put it on the walls of a room so that the participants can see the picture and agree. Do not try to put it on a small screen or make it look good (pretty). Be accurate, simple, and visual. The use of stick figures, and so on, will assist in achieving this goal.

Work on the map until it captures all activities and then look for obvious inefficiencies.

These can or will range from double handling to excess waiting periods and unneeded investments in inventory. Follow the flow. Remember, all work must be organised around results. This requires doing activities once, minimising paperwork, and removing variations (steady state).

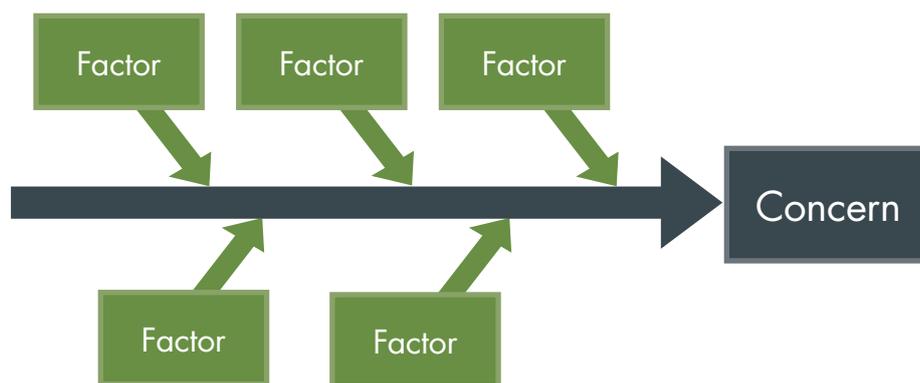
After the map is complete, review it first from its starting point. Then trace the steps beginning with the end point, going back to the starting point. This will provide the perspective of the customer. This is the equivalent, in a factory, of going from the raw material pile to the truck dock, and then reversing the review starting from the truck dock. The process is helpful for locating inconsistencies between the customer's need for a good or service and the supplier's response. Remember, everyone internally is both a supplier and a customer.

While you are collecting information for the mapping effort, keep a record of the time it takes to complete each step in the process you are mapping. By tracking the steps in the process and adding the time estimates, you can identify which sequence will require the most time. This is the critical path. Therefore, if you want to put speed into the process, attack the actions that add to the critical path first.

CAUSE AND EFFECT ANALYSIS (FISHBONE) CHART

Developed by Kaoru Ishikawa in the 1950s as a quality control tool, Fishbone Charts can provide a structure to help think through all the possible causes of a problem. A Fishbone Chart is a cause and effect diagram which basically is a pictorial display of a list. The design of the diagram looks much like the skeleton of a fish. Therefore, it is frequently referred to as a Fishbone Chart (figure 2). This technique is equally useful for problem solving as it is for exploring successful actions. Its value is to assist in categorising the potential causes of problems or issues in an orderly way to identify root causes.

FIGURE 2: Fishbone Chart



To develop a Fishbone chart begin a group brainstorming session and continue to ask questions concerning the problem or concern being addressed. Divide the questions into five major areas:

- **Procedures** – Performance criteria, standards, and so on.
- **Products** – Consumables used.
- **Environment** – Space, location, and equipment employed.
- **People** – Skills, abilities, motivation, and so on.
- **External** – Outside people or factors.

Continue to ask: **WHY? HOW? WHO? HOW OFTEN?**

Record the responses. Try to identify major and minor factors. Do not try to make it complicated. Remember, it is meant to provide discipline for problem solving without cutting off the flow of ideas.

As you identify potential causes (factors) to the problem (concern) being addressed, put them on the chart. Using, as an example, late payments to vendors, delays in approval or receiving invoices could be factors.

Repeat this procedure with each factor (category) to identify sub-factors. Continue until no new information comes from the process. Analyse the results of these sessions. Identify those items that appear in more than one category. These are the “most likely” causes, and should be further reviewed to place them in order of priority.

THEORY OF CONSTRAINTS

Theory of Constraints (TOC) is based on the view that in any system there usually is only one factor that limits the overall ability or production of that system. Therefore, the entire system must be managed knowing where the constraint exists. Eliyahu M. Goldratt demonstrated this using an analogy of marching soldiers.

Throughout a system there are points with excess capacity (fast soldiers) and a bottleneck (slowest soldier). The overall marching pace of the troop is dictated by the slowest soldier. By not identifying the constraint, management frequently will enact policies which add to establishing groups or departments, and compensation systems based on their individual production. The system will become more imbalanced, leading to poor quality and increases in working capital. What is likely to happen, is that management will push the “fastest soldiers” to continue to produce. Therefore, each unit will produce to its capability and not to the constraint capacity of the system.

Assume you manage a non-bottlenecked area and rewards are based on production. What would you do? Produce. This would result in growing inventory (work-in-process). However, it would not occur in your area but farther down the system (“not your concern”). Even if sales fall off, you will produce.

TOC addresses several areas of waste identified by “lean” thinking—overproduction, waiting time, motion, and underutilised people. In order to protect the output of the overall facility, buffers are established. Stock is strategically located in front of the constraint point. Therefore, it will continue to operate at all times, maximising the system’s production. In addition, the constraint capacity (slowest soldier) is linked to earlier operations. The combination will result in steady state operations and maximising production, with minimal inventory.

TOC focuses on total throughput. The following measurements are often used to capture this concept in a production environment.

$$\text{Productivity} = \frac{\text{Throughput}}{\text{Operating Expense}}$$

$$\text{Turnover} = \frac{\text{Throughput}}{\text{Inventory}}$$

However, TOC can be equally powerful in non-manufacturing scenarios. A clearer focus on throughput can be helpful in improving systems for financial closings, processing accounts receivables or payables, budgeting, reporting, and so on.

Consider the following:

- Attempting to maximise a system by areas or groups can reduce efficiency
- Steady state = balance between fast soldiers and the slowest soldier
- To maximise the total system:
 - Identify constraints
 - Set realistic goals
 - Link units (physical, logistics, rewards)
 - Focus on system throughput
- Process management requires identifying bottlenecks
- Increasing throughput requires continuous improvement in terms of productivity and turnover

Metropolitan reduces cost base by 6% in three years

Metropolitan Retail has set itself the goal of reducing its cost base by 20% over the next ten years. Maryvonne Palanduz is at the heart of measuring the effectiveness of this effort and guiding management to opportunities in both the pricing and operational realm.

Metropolitan Retail holds the largest life insurance customer base in South Africa with turnover exceeding R7 billion (\$1.8 billion) and more than 4,500 staff employed. Metropolitan recently merged with Momentum forming one of the largest life insurance-based financial services groups in South Africa. The combined group is now listed as MMI Holdings.

Before the costing model was developed, line management across various cost centres in the business was asked for their input to what they thought it was costing them to do business. As Maryvonne explains, "In the absence of a solid costing model our best guess was the accumulated best guesses of our line managers. Our new model means it isn't a guess any more—it's an accurate science. We are well positioned to evaluate the financial impact of merger-related business plans and inform decision making."

The working group responsible for implementation was made up of Maryvonne,

a management accountant dedicated to the project, accountants in business, a consulting company, and a systems analyst and developer to deal with the IT role. The executive sponsor's commitment and dedication to the working group was invaluable.

Maryvonne explains, "Our consultants were selected because they are very strong in management accounting. The team were really good at quickly grasping our conceptual thinking to practical implementation of a solution, whilst staying focused on project scope."

"The result is a solid costing methodology that is applied consistently across the business that reflects the 6% cost reduction and highlights areas of opportunity. We are well placed to inform tactical and strategic business decisions for the merged entity as well as support the longer term cost targets."

In two years, the model was designed, tested and implemented to the business. "Operational managers are responding really well because they now see where they are doing well or where they need to improve operational performance. Executive management have comfort in evaluating the longer term expense impact of an uncertain future."

THE SCIENCE AND ART OF DECISION MAKING

Management accounting skills are critical to both the “science” and “art” of decision making. As noted above, the purpose of these tools is to increase your long-term potential for making the right decisions. Selecting the right tool and knowing how to use it is the “science” part of decision-making. The “art” comes from interpreting the information and linking it in a unique way, thus providing insights missed by others and effectively communicating those insights.

One of the keys to uncovering those unique insights is to focus on causal relationships. In analysing causal relationships it is equally important to study events that succeed, as well as actions which fail. As a detective, you are seeking clues from the best of outcomes (BOB—Best-Of-The-Best), as well as those from failures (WOW—Worst-Of-The-Worst). The reasons for successes and failures are often more easily seen in the extreme.

It is also important when trying to uncover a cause-effect relationship to not stop at the first apparent answer or relationship. When diagnosing a problem, focusing on extremes (BOB and WOW) can often help to uncover the factors that actually contribute to an outcome.

Attempting to discover the cause(s) of BOBs and WOWs can be very helpful in focusing management’s attention on important factors, thus, eliminating the noise that exists in the decision making process of every organisation.

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