

Abstract

The decision maker must resolve many challenges and do this within a dynamic and uncertain world. The goal of predictable value is one of the most significant for the manager. There are long standing problems of forecasting need and regulations which guide or constrain action. A focus on value has become an essential component of corporate governance. This paper briefly examines the problems of 'achieving consensus', 'right first time', and 'legitimate decision making'. Solutions offered by standard guidance, e.g. EN 12973:2020, are explained. The discipline of Value Management supplies understanding and methods which top managers use in making policy decisions and setting direction and which guides every manager to make effective decisions within operational situations of scoping, conceptualization, optimization and redesign. Practical examples of approaches to sustainable decision making within environments of infrastructure projects, manufacturing, and public service identify that a focus on value as distinct to focus on cost, time or quality during decision making can more than double productivity.

About the author

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Michael's passion is working with people to make a difference for organisations, customers and the community. Michael Graham is Managing Partner of the business which operates under the brands UKValueManagement and UKVM. For over twenty years his international specialists supplied consultancy advice, research, facilitation, accredited training and support in connection with value management, lean management, risk management, project management, and arrangements for assuring sustainability. The team improves value for product development, capital projects, and operational activity in public services and business market sectors. Michael has served an active member of the Institute of Value Management (UK). He has been appointed as UK Expert by British Standards Institution to international standardisation groups working on Value Management, Risk Management Methods, and Reuse and Recycling. He has served as Convenor of CEN TC 279 which sets international standards for Value Management. His interests lie in developing the discipline of Value Management by researching the elements of theory which can be harnessed by managers to create predictable value and right first time solutions.

Value Management for Decision-Makers

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Introduction

This short presentation focuses on some of the challenges which managers face when making decisions. Sometimes situations are straightforward: there is a simple cause and effect model; and sometimes situations, and people's understanding of situations, are quite complex or chaotic, even to the extent that people can neither agree on priorities nor recognise problems which require to be tackled. In those difficult situations the real problems can often only start to emerge when people discover the solution they purchased is not what they need. For example a public policy to create a new town involves so much more than building homes, infrastructure, schools and workplaces. Success follows satisfaction of expectations and residents enjoying life in the new community. That 'success' cannot be predicted by cost benefit analyses which focus on the quality of the built environment and the size of investment. Valid decisions require consideration of many factors. This paper explains and illustrates ways in which the discipline of Value Management guides leaders and managers who have responsibility and authority to make decisions.

Forecasting value is a long standing problem, e.g. Knight (1921). The systems we work within and the expectations of people are constantly changing, uncertain and often unpredictable. These dynamics can be unsettling for people, therefore governments establish some controls, and consequently businesses and public sector organisations operate within a regulated environment. Whilst budgets and price points may appear to be set at the outset of a project, reality is that the budget is the result of prior decision. For example the decision may be to establish a budget which corresponds to average local productivity or the decision may be made to establish a budget which corresponds to best possible productivity world-wide incorporating a step change innovative technology too. The assumptions and values which guide the decision maker therefore bring a direct influence on cost and time constraints.

The cascade of authority to make decisions is guided by corporate governance. Directors are expected and sometimes legally required to understand how their organization creates value, e.g. ISO 37000:2021, and FRC (2018). Regulation guides organisation to develop capability and understanding by introducing a regulatory focus on value, FRC (2018), and by regulating the balance of priority of interests between firm and consumer, CMA (2019a). FRC, the financial Reporting Council Ltd and CMA, the Competition and Markets Authority, are UK based bodies which maintain regulation of firms and consumer protection. Consumer interests are increasingly important. The CMA's existing statutory duty is to "promote competition, both within and outside the United Kingdom, for the benefit of consumers". It is proposed that this duty be changed so that the "economic interests of consumers, and their protection from detriment, are paramount", CMA (2019b) and Tyrie (2021). Today's 'regulations' are therefore increasingly focused on 'value' FRC (2018) and 'value generation', ISO 37000:2021. The question arises about how leaders and managers should address this call for a focus on 'value'. Some very practical answers are given in the Value Management standard EN12973:2021.

The practical challenge is quite often to answer the question, “Well, given the uncertainty and change that might happen in future, what should we do now?” . The manager must answer the very practical the problems of ‘achieving consensus’, ‘right first time’, and ‘legitimate decision making’ within the regulated environment. This paper explains how the discipline of Value Management supports managers in this situation, presents a few tips based upon real life examples, and poses questions for future discussion.

About Value Management

The British and European Standard BS EN 12973:2020 Value Management, supplies guidance for managers with responsibility to make decisions. This recent standard updates and significantly extends the earlier version of the standard which was published more than twenty years ago. That earlier version focused on effective deployment of methods by specialists whereas the recent update incorporates considerable additional guidance which can be applied by any manager in their work.

Value Management as introduced by EN 12973:2020 is established from four essential principles. The standard explains how organisations can tailor their approach to decide on strategy, optimise performance, and satisfy stakeholders. The way an organisation applies and strengthens application of those principles become its Value Management approach. The four principles can be summarised as

Strengthen value orientation -	this requires awareness of value, aligning value culture to goals, and people having a common understanding about value and the measures for value acquisition, monitoring and implementation
Apply function thinking -	this requires realisation that a value increase requires change and creativity in addition to applying function thinking
Apply a structured holistic approach -	this requires taking regard and evaluating the perspectives of all stakeholders, teamwork and recognising sustainable systems and timescales
Managing complexity, risk and uncertainty -	complexity, risk and uncertainty are particularly important when making strategic choices

These principles are relevant to every decision taking into account circumstances and what is at stake.

The standard also gives guidance on methods and their use.

Setting and communicating direction and targets

needs and priorities: Function Analysis / FNA / FPS

option selection: Value Analysis

Better design, innovation and change

challenge, creative thinking: Value Engineering

Delivering the product

management systems: Design to Objectives and DTC

cost efficiency analysis: Function Cost Analysis

Understanding situations

When we make decisions we are normally influenced by external pressures, stakeholder requirements, personal interests, and unconscious biases as well as the obvious and unexpected difficulties of tackling the problem at hand within some context.

Situations vary in complexity, e.g. Kurtz and Snowden (2003), Snowden and Boone (2007). Guidance in EN12973:2020 calls for organisations to eliminate unnecessary complexity and consider significant risks to value by examining the nature of uncertainty and the effect of this uncertainty on objectives for how well needs of consumers are satisfied, impacts of and on the organisation, anticipating and responding to uncertainties and resources required to satisfy needs.

Whilst complexity may create value by introducing choices and options desired by customers, efficiency is compromised. Even in a predictable simple situation process cycle efficiency is compromised by increasing the number of different tasks involved or number of steps in a process. This can be measured and assessed by consideration of complexity cost ratio ($\text{Cost}_{\text{NVA}}/\text{Cost}_{\text{VA}}$) and process cycle efficiency (value-add time / total lead time), e.g. George and Wilson (2004), Wilson and Perumal (2010). The essential ingredients in tackling complexity in these production process situations are to minimise non value adding cost and time. The ‘value adding’ and ‘non value adding’ can be identified by performing a function analysis of the production process, differentiating the desirable and undesirable functions and then allocating cost and time of activities accordingly. This sort of approach is described in Graham (2017) where supply chain production volumes for Highway Maintenance road surfacing were more than doubled by planning ahead to allocate work in line with a standard working shift productive capability rather than varying the work squad and working time to minimise costs at an individual project level.

In complex situations managers are faced with ambiguity and uncertainty. People may be close to agreement or far from agreement. The Stacey model, e.g. Stacey (2007), suggests that managers should consider degree of agreement and degree of certainty when selecting their approach. In obvious situations, where people are close to agreement and cause and effect relationships are close to certain, decision making processes are technically rational. In complex situation where people may be far from agreement or far from certain people can ‘muddle through’ or adopt more structured approaches such as focus on outcomes rather than solutions and incremental approaches involving identification, development, and selection. The core Value Management methods set out

in EN12973:2020 supply the structured approaches which manager need to work in complex situations. Further guidance on needs analysis and output performance specifications is also given in EN16271:2012.

The discipline of Value Management supplies understanding and methods which top managers use in making policy decisions and setting direction and which guides every manager to make effective decisions within operational situations of scoping, conceptualization, optimization and redesign.

Common problems of 'achieving consensus', 'right first time', and 'legitimate decision making' arise. Solutions offered by standard guidance, EN 12973:2020, are explained below.

Legitimate decision making

Public Value Management, Moore (1995), addresses the importance of authority. This paper focuses on decision making within the context of problem situations. There are at least different types of problems situations, and it is not unusual for problems themselves to go unrecognised or misunderstood. The term 'wicked' problem is sometime used to identify those intractable problem situations wherein people are dissatisfied but there are conflicting perceptions and great uncertainty which problems could be causing the dissatisfaction and where to take action, e.g. Rittel and Webber (1973). In those situations it is very much down to the authorised leaders to direct informed action. Value Management approaches supply the basis for informed action. Specifically strategic analysis is guided by function analysis and value analysis, e.g. EN12973:2021 (section 5.2). Sometimes it is necessary for the leaders to assess situations in confidence but more typically leaders require information from supply chains and communities involved in order to make the decision to act. A case study example, Graham (2017) describes development of a value improvement programme which combines traditional lean management methods and core Value Management methods to make a step change to both cost efficiency and cost effectiveness in highways maintenance. In financial terms improvements of order 8% were sought across a £15Bn programme of work. The whole approach was guided by Value Management principles. By cascading responsibility and incentivising the supply chain the Highways Authority actually realised improvements in excess of 25-50% in major areas of work. A key motivator was to change the focus from 'price reduction' to 'cost reduction' and to make increasing supplier profitability a key measure of success within individual contracts. The procurement cycle and competitive tendering for work packages enabled the Highways Authority to gain price reductions and continue the value improvement process of increasing supplier profitability by cost reductions. In parallel with this 'efficiency work' existing standard designs of products were improved, innovative technologies were developed and the procurement cycle was planned to introduce these better products and innovative technologies at a time when benefits of national scale could be realised. Two key points are evident in respect of 'legitimate' decision making 1) championing the process of value improvement is a core responsibility of top management and 2) regulations should not be treated as hard constraints. This value improvement programme was actively championed by top managers leading the supply chain companies as well and the Highways Authority.

The presence and personal efforts of those top managers enabled problems to be resolve quickly or 'pilot action' to be agreed to make a change when the problems may not have been clear. One of

the specific difficulties which was solved in this way related to data gathering to measure value improvement. All parties had to build some degree of trust and ability to deal with sensitive commercial data in a manner which enabled the supply chain to reduce costs without compromising commercial interests. At the outset it was impossible to establish some basic 'cost' data. Prices were known but internal costs were not known. The choice around where to focus initial improvement work raised a dilemma. In the absence of ready data there is an immediate need to make a decision: is it worthwhile gathering data? Some contractual mechanisms may motivate people to stay in an iterative loop of data gathering so that a robust decision can be made that does not place a supplier or internal project leader at risk of making a flawed decision. Recognising that no matter how much data might be assembled some situations were so uncertain or perceived in such different and conflicting ways that it did not make sense to try to fish first for the best fish in the pond. What was important was to fish for all the fish and the order did not matter. Review of the pilot experience of searching for data before setting direction for a product improvement led to the decision that tacit data and management judgement by top management from the relevant stakeholders are what count. The personal and committed efforts of the top managers throughout the value improvement programme really motivated and realised benefits quickly.

Traffic and work on highways is heavily regulated for safety as well as to deliver levels of value for money and efficiency in maintenance of standardised products. Examination of the functional requirements of the process and the effects created by following current process typically uncovered perceived constraints which actually could be removed if only the right stakeholder was involved. For example apparent 'legal' constraints could be addressed when the delegated public servant responsible for the specific road transport regulation was involved and it became apparent that legal constraints dating back many years had originated from technical suggestions made those years ago, so the regulations could be changed when there was a valid new technical recommendation. Perceived constraints were therefore generally not fundamental constraints. This recognition that any constraint could be challenged and perhaps updated to reflect today's environment was rapidly realised by the whole supply chain because of the active participation by top management.

The active involvement of top management from all interested parties created collaborative networks to realise value improvements rapidly. For example a 50% improvement to national productivity for road resurfacing was realised within three years which was quite a step change from the circa 10% change over five years which had been envisaged in the previous national procurement process cycle. Legitimate decision making within this national level work rapidly enabled productivity to more than double.

Achieving consensus

Consensus building may be required within an organisation or within a community. Some approaches to decision making are based on power or ability to pay. In the absence of consensus there will often be a substantial minority or even a majority of people affected who consider their needs are not satisfied and resources will not be used to best effect for a community, e.g. Rogowski (2018). These difficulties explain some of the reasons why governments regulate the balance of interests between consumer and firm and take responsibility for essential public services.

Sustainable decisions are required which have the support from the community and other relevant stakeholders. Value Management methods can be deployed in simple workshop environments and can be deployed by establishing organisational systems which have the capability to deploy structured participative programmes of work spanning months to tackle complex challenges and wicked problems, Hayles et al (2010). The participative research approach is enabled by Value Management methods of Function Analysis and methodologies of Value Analysis. These approaches seek information from those affected, those who have responsibility for making changes and those who have authority to set regulations or impose decisions in complex or chaotic situations. This participation can be checked by applying an ACID test: people involved have authority, people involved communicate and share, people involved hold all relevant information and people involved 'do' decide and act. Structured use of Function Analysis methods ensures that all needs are identified and builds a shared understanding of need and priorities so that consensus is achieved on the values which govern decision in respect of each need. One very practical outcome from making sure all the people who had an interest were involved was that decisions could be made to initiate joint working between public bodies to address matters which affected the community but which lay outside the responsibility of any individual public body. This case study and several others lead to the conclusion that effective Value Management forms a "framework which has the potential to be the standard methodology for sustainable decision making", Hayles et al (2010)

Right first time

Often the level and nature of work required is quite uncertain particularly when maintenance is being carried out or when new supply chains are involved. The work which is actually required may only become apparent after maintenance works starts and new supply chains typically experience a learning curve as people develop their practical communication channels and working arrangements.

A simple risk management approach which focuses on probabilistic estimation of deviation from objectives and then agreeing a contingency cost budget or time allowance builds inefficiencies into the programme of work. Contingencies typically are used as people encounter the effects of uncertainty. More is required to optimise performance. A right first time strategy must focus on customer satisfaction and other desirable functions. The activities which fulfil those desirable functions are 'value-adding'. Function analysis methods, EN12973:2021, are necessary to identify those functions and to understand the logical relationships between the functions. Overall customer satisfaction is directly related to satisfaction with right first time and the impact of being right first time enables supply chains to become much more productive. A case study example, OGC (2007), describes a programme of very disruptive work to renew kitchens, renew bathrooms and sometimes rewire more than 25,000 social housing units. That paper explains how focus on identifying and fulfilling the desirable functions 'right first time' eliminated defects. As result the maintenance teams doubled production and at the same time significantly increase overall satisfaction for elderly and other tenants.

Conclusions

This paper has considered the types of problems and a range of situations and briefly discussed three examples of Value Management work in complex situations. In each case sustainable decisions have been made. Furthermore productivity was more than doubled by attention to Value Management principles strengthened by structured deployment of core Value Management methods across supply chains. It is therefore concluded that the effectiveness and potential of Value Management methods to guide managers to make sustainable decisions and step changes in productivity are corroborated. It is recommended that every organisation should take steps to deploy Value Management methods in place of the common place strategy of 'muddle through' when managers make decisions in complex situations. As a first step managers are pointed to the guidance in the recent standard EN12973:2021, Value Management.

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