

## INTEGRATION - THE KEY TO VALUE MANAGEMENT

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### **Introduction**

The focus of the AGILE construction initiative is to identify ways that may improve the performance of the industry. Supporting AGILE is one of the ways in which WS Atkins seeks to pursue its goal of excellence. Our participation reflects our endeavours to improve our own performance as well as realising that a high performing industry is a better place in which to do business. We have already commenced a number of initiatives to assist the AGILE researchers to gain insight into the role of the designer in major construction projects. The information will help to identify improvements that may be of benefit to ACI in meeting its goals - and to ourselves. We have no more desire than anyone else in the industry to give away our competitive advantage, but see participation in AGILE as an opportunity to increase it - rather than as a threat.

The construction industry represents a major part of WS Atkins' business. However, it is far from the only industry in which Atkins operates. Working in WS Atkins Management Consultancy, gives me the opportunity to see a wide range of industries and organisations. Each has reason to believe that it is unique and faces unique problems. There are certainly many aspects of the construction industry that are unique - or perhaps it is just the combination of factors that makes it unique. However, there are inevitably many lessons that can be learned by carefully analysing current practices as well as by taking cues from other industries that experience similar challenges.

Value is a key concept in today's construction industry - and rightly so. WS Atkins has already embraced the concept of value management and is introducing it into diverse areas of its business in addition to construction design and management. Like all new developments, it is not an entirely new concept and is not a panacea. It does, however, provide us with a tool for better meeting our customers' requirements.

Managing decisions, activities and their outcomes to provide a lean, agile, value driven industry is the key challenge facing us.

### **WS Atkins and the ACI**

Atkins' interest in ACI is by no means philanthropic.

Atkins is participating because we believe it will help us to achieve long term commercial benefit in our construction-related business. We would not advocate anything else from participants in this initiative. AGILE is about achieving mutual benefit.

One of Atkins' principal tenets is the excellence of our people and services that we provide to our customers. We are looking to ACI as a source of pursuing excellence.

We believe that our success in business is based on serving our customers better than our competitors. We value our competitive advantage and will seek continually to improve it. We are looking to ACI as an opportunity build on our competitive advantage not to diminish it.

WS Atkins operates in the international market place. If we can be a strong player in a strong UK industry, we will be strong in the face of international competition. The purpose of ACI is to raise performance of the UK construction industry.

We are participating in ACI and opening ourselves up to scrutiny and analysis because we see this not as a threat, but as an opportunity for ourselves both directly and indirectly alongside the benefit to UK construction.

### **Is Construction Different?**

Much has been said about Construction lagging behind other industries in advancing its methods - particularly regarding its management. Indeed there is a lot of, at least, circumstantial evidence to support this view. The latest management buzzwords and concepts are not renowned for emerging from the construction sector. Kaizan, kanban, TQM, BPR may mean something in manufacturing but the vocabulary of construction

is usually more traditional being often monosyllabic and usually originating from the site office where at least stress management is a long practised art.

There are factors that set construction apart:

- the absence of controllable factory conditions;
- every project is a “one-off”;
- the time and money involved;
- the performance of the asset;
- economic roller-coaster;
- project duration;
- life of the asset;
- organisation of participants;

Of particular relevance to value management is the passive nature of the end result - it doesn't do anything - it just is. Concepts like “sweating the assets” don't have the same meaning - if any. So a major focus of decision making - how the asset is going to perform commercially, is missing or subdued. Certainly, structural integrity and longevity have to be achieved. The main focus is - “can we meet the planners' or developers' requirements on time and within budget”. And if the end purpose is hard to focus on, problems encountered during a project are powerful in acting to knock it off course and take us down un-productive routes of no added value.

And every project has a different permutation of participants bound together by contracts, which endeavour to achieve elusive congruent goals.

However, broken down into elements, the challenges facing the industry can be found elsewhere. It is really the combination of all the factors that define the construction industry. Much can be learned by examining methods in other industries.

## Learning From Others

The construction projects that we are concerned with run to hundreds of millions of pounds. They take years to complete. They start with planning, studies, feasibility analyses. Then conceptual designs followed by detailed designs. Construction involves highly specialised equipment and hundreds of workers - usually a prime contractor supported by specialist subcontractors. The complexity is enormous as is the potential for running into major unforeseen problems.

This is an example - but not a civil engineering project:



This is the Shell's main production platform recently commissioned on the West Urdeneta field in the middle of Lake Maracaibo, Venezuela.

There is little if any migration of personnel between the process industries and civil construction industry. Clearly there are different materials, technologies and disciplines involved. But the similarities are obvious.

Surely there must be lessons to learn from an industry that has predominantly private commercial customers and that is traditionally technically advanced.

This is a unique design - as most platforms are. The design decisions are critical. A design and build contract was used. Every day's delay means hundreds of thousands of dollars of lost revenue. The operating success measured in throughput and safety will attest to the success of the design and construction phase.

The Shell equivalent of value management is to conduct repeated operability studies and to produce an asset reference plan, which creates a commercial model for the assets performance over its entire lifecycle - from the time the first project costs hit the WIP.

This is an obvious example of where the UK construction industry can look for inspiration in improving its performance. But this can come from many other sources and other countries.

### **Value Management**

Let me recap what Value Management is.

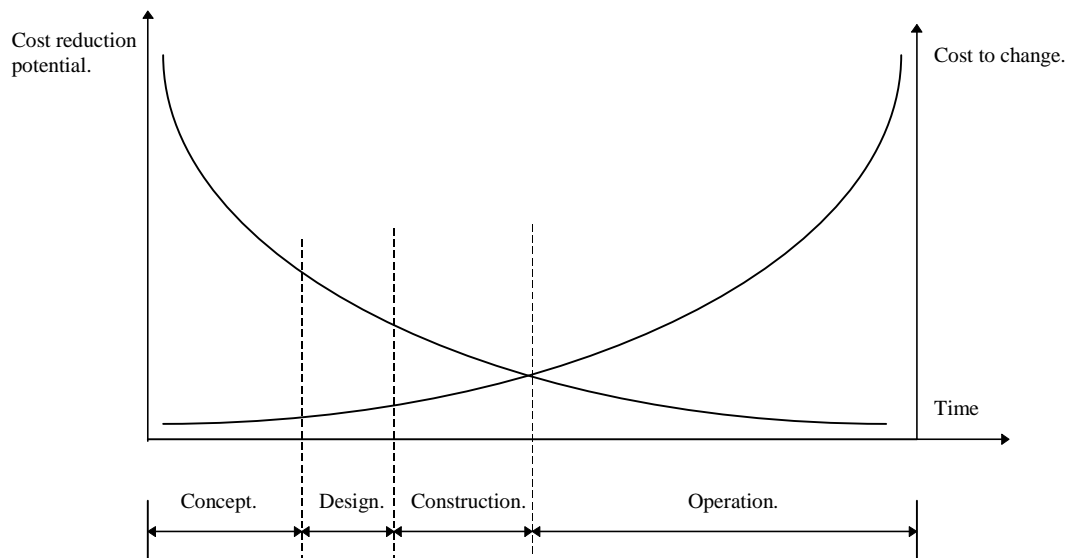
It is about ensuring that the objectives of a project are met and that time and money are not wasted through unnecessary work in achieving them.

Value management is the control of time, cost and quality within the context of functionality. It is an organised approach which provides the necessary functionality at the lowest cost.

The value chain consists of three types:

- value-adding;
- necessary non value-adding - there is a bypass round my home town, which has a roundabout with only two exits about 170 deg. apart. The reason being, allegedly, that the alternative curve would have been too tight for the category of road.
- unnecessary non value-adding.

Value management eliminates unnecessary non value-adding activities.



This is a frequently presented graph illustrating how, in the early stages of a project, decisions have a profound affect on costs, while as the project proceeds the cost of rectifying bad decision rises dramatically. Decisions are part of a continuous management cycle that includes the communication of those decisions in the form of clear unambiguous expectations, execution using appropriate capabilities, meaningful analysis of outcomes and performance, and feedback that genuinely affects future decision making and reinforces value added activity.

Many improvement initiatives focus on addressing capabilities alone through new technology, capital investment, training and other interventions. But success is based on complete performance-focused management of which this is just part.

It is hard enough to achieve this in a manufacturing environment where most participants work for the same organisation, cycle times are relatively short and frequently repeated.

It is a major challenge in the construction industry, which is characterised by its fragmented and nomadic membership and many other factors already mentioned. It is clear that integration across these groups is of vital importance - particularly from the view point of the designer sitting in its pivotal position - in pursuit of value management.

## **ACI Value Management Programme**

There are a number of value management elements in the ACI programme A review of The Second Severn Crossing Access Roads is underway, these others will follow:

- M25 D & B contract. Second Construction Value Review. Integration of the design team.
- A30/A35 DBFO contract. First Design Value Review. History of design decisions made.
- Highways Agency: implementation of its 'Value for Money' document in planning and procurement.

The ACI researchers will be closely examining the use of value management techniques. They will be looking at reversed decisions and redundant, non-value added activity. They will be looking at successes in decision making and follow-through that have led to strong value-added performance.

## **WS Atkins and Value Management**

WS Atkins has already put over one hundred people through value management training.

We have established a centre of excellence in our projects division to develop and promote the use of value management where it can be of benefit.

Not only are we using value management as part of our projects but we are also providing facilitation skills to third parties. We are not in doubt as to the benefit of Value Management, but will learn from the quantified findings sought by the ACI researchers. We hope that our experience will form some of the research material.