

## Cultural Challenges of Embedding Decision Technology

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### Abstract

As part of the PR'04 price determinations, Ofwat identified 18 criteria, spanning 3 broad categories; Data, Process and Outputs, with which they judged Water Service Providers' (WSP) compliance with the Capital Maintenance Planning Common Framework (CMPCF). It is likely that Ofwat will place more emphasis on compliance with the CMPCF in the price determinations for PR'09.

WSP are therefore on the path to adopting CMPCF as part of their asset management planning in the run up to PR'09. This is to ensure that the CMPCF becomes business as usual and for the WSP's receive favourable determinations for AMP5.

Decision technology forms the "Process" part of the 3 stage process used by Ofwat. The process also drives the requirement for improved Data and shapes outputs. Clearly decision technology will become part of WSP Business as usual process. However embedding decision technology will present a number of cultural challenges and skillset challenges for the WSP:

- A move to increase the ratio of proactive to reactive asset management
- Closer links between the strategy and planning functions to close the loop between the derivation and implementation of strategy
- Changes to the way that schemes are derived and implemented
- Aligning with the needs of operations staff
- Improved data collection.
- Buy in from strategy, planning and operations staff to the new technology and processes being used

The purpose of this paper is to look in more detail at the cultural and skillset challenges facing WSP as they embed decision technology. In addition to put forward recommendations for WSP to ensure a smooth transition as the decision technology is embedded into their organisations as business as usual.

## **The environment for change**

Companies have been set targets by the regulator and must now develop ways to cut costs, meet quality targets and out perform on targets to deliver to value for shareholders.

The added capital market pressure from investors is also likely to be important with managers facing greater emphasis on producing higher short – run equity yields. All these challenges are taking place in the context of greater transparency of governance and reporting. Transparency of reporting is vital when fighting regulatory battles and Ofwat will be less receptive to claims for increases in costs unless there is sufficient evidence for support.

As regulation in the Water industry has evolved, the regulator has changed focus to outputs and quality forcing the need for proactive capital expenditure and asset management, an essential component of the CMPCF vision.

Delivering the CMPCF will demand changes in culture, processes and technology. The cultural change is based on a willingness to move away from the comfort zones of traditional asset management. A key aspect of this change is a willingness to make decisions based on the current quality status of data and a commitment to improve data quality.

The potential benefits are great; the continual improvement in knowledge and certainty in the decisions being taken will help companies generate the most transparent and justified regulatory submission, release financial saving to shareholders and extend the CMPCF culture throughout the WSP.

Before discussing the change requirements it is useful for the reader to review the drivers for a different approach to asset management.

### **Traditional Asset Management**

Infrastructural asset operators across all sectors share similar costs, risks and business environments. They have large asset bases of varying ages, operating within environment defined by economic, environmental and health and safety regulators. In most sectors the assets are operated by a publicly financed company.

The risks in operating infrastructural assets within this business environment are managed as either being 'strategic' or 'operational'. 'Strategic' risks include the business, regulatory and financial risks associated with an organisation. 'Operational' risks are associated with operation of the assets, their failure and the consequences of this failure. The consequences of these 'operational' risks impact on the customers being serviced by the assets.

Although these 'risks' are inextricably linked, traditional approaches to asset management consider them in parallel with little linkage. Many view this as a result of regulation. Equally, a defence for the regulator is that they inherited this approach; under the CMPCF this is now changing.

Traditional asset management is characterised by budgets that are set based on what happened last year and by budgets that are spent based on the priority of different schemes. These two processes (budgeting and spend) are often

undertaken by entirely different parts of the business: finance usually defines the budget and operations spend it. Communications between the two is often limited to the budget size. Typically no mechanism for discussing and demonstrating whether this budget is correct, too high or too low is apparent. The CMPCF will drive the change to make these processes more linked and more transparent.

### **The need for a common language**

This traditional approach segregates the risks associated with operating infrastructural assets. They become either “strategic” or “operational”. Strategic risks include the business, regulatory and financial risks. Operational risks are associated with the assets, their failure and the consequences of such failure. In the past a principal reason for this segregation of strategic and operational risks was the lack of a common language.

The authors believe that bringing together these strategic and operation view is the most important cornerstone of the CMPCF vision and for WSPs’ to capture the essence of proactive asset management – or intelligent capex.

The first method to approach this joining is the effective use of data to drive the decision making. Unfortunately, in all sectors one often hears the objection that the available data is not of the required quality or quantity. This and the lack of a common language of understanding, explain why ‘strategic’ and ‘operational’ risks are not joined-up.

Two possible responses to this are available; improve the data or let’s see what we can do with the data available. The more common answer is the former; spend money and collect more and better data. One should question this response, how can one know what ‘more and better’ data is without knowing why the data is being collected first.

Our experience is that if the available data is used correctly it is of a standard to improve risk, cost and other asset decisions. This is not to say that data should be improved, it should. Improving data and knowledge enables better understanding of the cost/risk envelope that will enable asset to be managed optimally. Better and perfect data will take many years to collect and assimilate but the pressure for intelligent capex is here and now; hence a framework to make the best use of available data is required is here and now.

It is the effective use of available data, together with the transparency and repeatability of decisions which will drive a successful implementation of the CMPCF.

### **The new approach to asset management**

So the traditional approach is no longer sufficient to meet the requirements of the CMPCF. The new approach must minimise the risk of under investment whilst reducing costs associated with the inefficient targeting of investment.

Intelligent Capex is about using three basics components – optimisation; modelling and new processes for data analysis.

Optimisation enhances prioritisation by allowing the right amount of investment to be identified, considering the trade- between cost; risk and service performance and measured temporally over the life the asset life. Furthermore,

optimisation ensures investment is targeted in line with both strategic and operational risks.

Strategic modelling ensures that new process and data analysis techniques can be the conduit for the common language between finance; regulation and operations. Strategic modelling enables a framework for a continuous process, becoming part of everyday business, allowing the WSP to return efficiencies at the earlier stage of the regulatory cycle.

Strategic Models must be

- o easy to create and apply
- o shared across all parts of the business
- o the enabler and focus for cultural change
- o applicable across multiple asset streams across the organisation
- o used as an aid to communicate strategy across the business
- o believable – the results from the models must be obvious enough to be accepted by all users
- o widely applicable – if possible through the use of templates
- o transparent and free from political constraints

Data is collected and analysed to develop predictive models that tie assets the and how they are operated to their costs, performance, risk and service outputs. Where data is sparse the use expert workshops and techniques such as FMCA (failure mode and consequence analysis) are used. **The strategic model is populated with these predictive and FMCA models and optimised to deliver the corporate objectives.**

Data analysis tools must underpin each stage in the new processes and the ability to unwrap the foundation of investment decisions is paramount to the CMPCF. The data analysis should include a top down asset management tool that enables strategic risk and the quality of service to drive strategy and planning. Part of the change process is to ensure that the organisation aligns its corporate business process with their top down approach asset management process.

The strategy is taken forward through to planning and the identification of schemes at asset level. Naturally interface to new and existing planning systems is vital to the process. The intelligent capex cycle is completed by appraising the success of the deployed expenditure. This feedback drives the future strategy and refines data needs.

No doubt some of the investment decisions from this new approach will be 'counter intuitive' to existing practise. As such significant cultural change will be required at operation level to achieve understanding and buy in across the organisation; the success of LEADA in Yorkshire Water is evidence to this.

We believe that it is essential to ensure that a robust 'Vision' is in place, at the outset of any program, which defines what the organisation will be like once the change has been implemented and is articulated in such a way as to stretch, direct, motivate and align those affected by the change. It is vital that senior management can articulate this vision and have the skills to put a strategy in place, in order to begin making this vision a reality.

Change readiness also means strong leadership and sponsorship. These are fundamental to a successful change strategy. This involves engaging with the senior leadership, to gain their ongoing support for the project and to coach those responsible for the day to day management of the project. This is typically achieved using a variety of methods and processes including training needs

analyses, training workshop development and delivery, one to one counselling, mentoring and coaching.

CMPCF adoption will require business process analysis to align the new asset approach with corporate strategy. The approach to this will involve organization design encompassing the review of roles and responsibilities, accountabilities, reporting structures and the chain of command, performance measures, team-working and integration mechanisms to deliver the organisation's strategic intent and needs.

Typical deliverables from this area of work include:

- An organisation review and design of a new structure, if appropriate;
- A survey of the current culture and working practices.
- Design and delivery of a culture change programme to align values, behaviours and working practices with the new Vision and organisation design.
- A stakeholder analysis identifying key individuals and groups (such as leaders, staff and customers) and what they would need to do to support the success of the programme; and
- A stakeholder engagement programme setting out communication and intervention activities to support the desired outcomes identified in the stakeholder analysis.

The identification, management and realisation of desired outcomes are fundamental to successful change. The use of best practice program management techniques to validate and track the delivery plan are essential. The approach to project and program management needs to be holistic and flexible and wholly compatible with methods such as PRINCE 2 and MSP.

## **Skills**

Key for successful change management is the training of staff and the use of techniques such as the PwC *Crystal Bridge*. *The Crystal Bridge* contains best practice tools and training in workshop and event facilitation

The key deliverables from this area are:

- Training Needs Analyses identifying the development needs of key groups of staff;
- The design and delivery of training solutions, such as face to face, e-learning, on-line support programmes;
- An evaluation of the training to ensure that the planned benefits were achieved;
- The design of new performance management processes to embed and sustain the new skills and behaviours.

Typically, the content for the senior manager's change management skills would include:

- Facilitation skills
- Influencing skills
- Stakeholder management skills
- Analytical and interpersonal skills
- Modelling skills
- Change management frameworks and approaches
- Communication planning and delivery.

## **Conclusion**

An open culture is vital to accept that processes must change to ensure that appropriate data is collected and the interpretation of analysis output is used to refine investment decision making.

A further key aspect of fostering change is communication. The output from strategic models derived using asset optimisation can be the communication conduit and used to make a common language between finance, engineering, and operations.

Process changes will include improvements to approaches to data collection, development of processes to support the analysis, verification and reporting of asset quality data.

IT changes may include the integration of data collection systems; works management systems; geographical systems; database and reporting systems into an overall decision support architecture. Strategic and optimisation tools sit at the tip of this architecture, making data come alive and providing the common language conduit.

If utilities can deliver these changes, the benefits of the CMPCF will be significant to the industry and its customers alike and its transparency can be used to better inform public and political opinion.