

Maintenance Outsourcing - Critical Issues

By [Sandy Dunn](#), Director, [Assetivity](#)

Please request permission from the author before copying or distributing this article

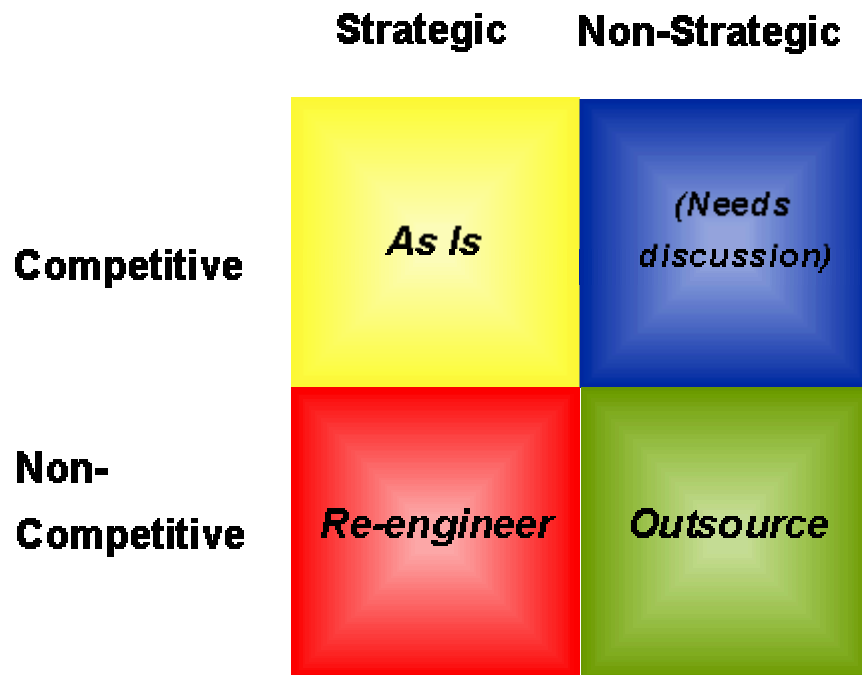
There are a number of issues facing organisations that are considering maintenance outsourcing as an improvement initiative. Amongst these are the following:

- ◆ [To outsource or not outsource - strategic decision making](#)
- ◆ [Does a competitive outsourcing market exist?](#)
- ◆ [How much maintenance to outsource](#)
- ◆ [Establishing an appropriate tendering process](#)
- ◆ [Establishing an appropriate specification of requirements](#)
- ◆ [Establishing an appropriate contract payment structure](#)
- ◆ [Establishing an appropriate contract administration process and structure](#)
- ◆ [Establishing an appropriate structure for the contract document](#)
- ◆ [Managing the transition to the outsourced arrangement](#)
- ◆ [Agreeing contract termination arrangements](#)

To outsource or not outsource - strategic decision making

Conventional wisdom regarding the outsourcing decision states that you should outsource your "non-core" business activities. The difficulty with this approach, however, is that it provides no guidance for deciding which activities are "non-core". Ultimately, in many organisations adopting this approach, the discussion about what is "core" and what is "non-core" ends up being highly subjective, and in the end, one person's opinion ends up prevailing over another's.

A better approach, and the one that PricewaterhouseCoopers typically adopts in advising clients about the outsourcing decision is to look at the decision in terms of a two-by-two matrix, as shown below.



In this diagram, we consider the outsourcing decision along two dimensions. The first, Strategic-Non Strategic, considers how important the activity proposed for outsourcing is to the organisation in achieving long term strategic competitive advantage in its chosen marketplace. In terms of maintenance, this will clearly vary from organisation to organisation, depending on the industry that it competes in, and its chosen strategy for competing in that industry. For example, for a contract mining organisation, where competitive advantage in the industry is largely driven by being the lowest cost producer (and in which maintenance and asset ownership costs typically equate to 55-60% of total costs), maintenance clearly is of strategic competitive importance to the firm. Outsourcing maintenance in this environment would, in effect, be handing over control of this potential source of competitive advantage to an external party. On the other hand, maintenance to a hospital may be of less strategic importance, and therefore could, potentially be a candidate for outsourcing.

The second dimension, Competitive-Non Competitive, relates to how competitively the function being considered for outsourcing is currently being performed compared to the external competitive marketplace. This relates primarily to the cost of the service, but could also be extended to include service elements such as response time.

Putting the two elements together gives four possible outcomes.

1. Those functions that are of Strategic importance to the firm, and which are currently being performed competitively require no further action - the status quo should be retained.
2. Those functions that are of Strategic importance to the firm, but which are not currently being performed competitively with the external marketplace should not (in the long run) be outsourced. Instead, a better long-term option is to re-engineer them to ensure that they are performed at a competitive cost. It is possible that, as an interim measure to speed the transition process, a tactical decision is made to outsource the function in the short term, but as stated previously, in the long term the function, as a source of potential competitive advantage, should be retained in-house.
3. Those functions that are not of Strategic importance to the firm, and which are not currently being performed competitively with the external marketplace should be outsourced. There is little value in investing in improving this function.
4. The final combination, those functions that are not of Strategic importance to the firm, but which are being performed competitively with the external marketplace is more interesting. A number of options exist for this function, including
 - selling the function as a going concern,
 - extending the function to provide services to external customers,
 - outsourcing the function, or
 - raise the profile of the function to turn it into a source of strategic competitive advantage.

The preferred option depends largely on the function being considered.

Does a competitive outsourcing market exist?

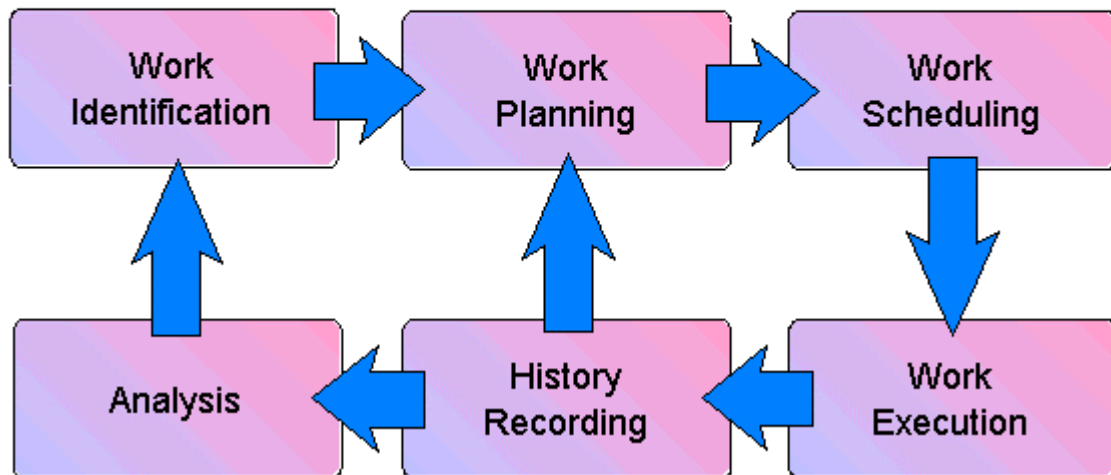
A second consideration for outsourcing, that is related to the above model, is to decide whether a competitive market for the outsourced services actually exists. In particular, when dealing with highly specialised maintenance services (such as specialised turbine maintenance) or maintenance occurring in remote areas (such as at remote mine sites), once an outsourced maintenance service provider has been selected, this may create large barriers to entry for other potential maintenance service providers wishing to enter into this market. While these barriers may be overcome, by adopting an appropriate outsourcing strategy (such as letting work to two or more contractors, rather than to one exclusively), awareness of this possible outcome prior to establishing the outsourcing strategy is vital if the outsourcing organisation is not to find itself "locked in" to a sole provider.

How much maintenance to outsource

An important consideration in making the maintenance outsourcing decision is what aspects of maintenance to outsource. If we consider the maintenance management

process as consisting of six major steps, as shown below, then a number of options exist.

A World Class Maintenance Management System



In the first instance, organisations may choose simply to outsource the work execution step, while retaining the remaining steps inhouse. This is often done on a limited basis, for example, when employing contractors to supplement an inhouse work force during times of high workload, during major shutdowns, for example. This is the minimalist approach to outsourcing.

An alternative approach is to outsource all of the above activities with the exception of the analysis and work identification steps. In this approach, the contractor is permitted to plan and schedule his own work, and decide **how** and **when** work is to be done, but the outsourcing organisation retains control over **what** is to be done.

A third approach is to outsource all of the above steps, thus giving control over the development of equipment maintenance strategies (ie Preventive and Predictive Maintenance programs) to the contractor. In this instance, the contract must be structured around the achievement of desired outcomes in terms of equipment performance, with the contractor being given latitude to achieve this to the best of his ability.

There are advantages and disadvantages to each approach, and the most appropriate approach will depend on the client's particular situation.

Looking at how maintenance fits into the wider asset management strategy of an organisation (as illustrated below) also raises interesting challenges.



For example, one challenge that needs to be met is how the maintenance contractors will interface with the production operators, and the relative responsibilities and duties of each party. Many organisations today are adopting Total Productive Maintenance principles, which encourage Production operators to take a higher level of responsibility for equipment performance, and also encourage them to perform many minor maintenance tasks. There is also a growing realisation that the manner in which equipment is operated can have a huge bearing on maintenance costs and the maintenance activities required to be performed if equipment performance targets are to be met. A high level of teamwork between the Maintenance contractors and the Production operators is, therefore, vital to the successful completion of the contract. This leads to the view that an alternative, and possibly better, approach to the outsourcing of maintenance is to include plant operation in the scope of the contract. Hence the letting of Operations and Maintenance contracts, particularly in the Power Generation industry.

Finally, taking things one step further again, there is also a growing realisation that maintenance is limited in achieving higher equipment performance by the fundamental design of the equipment being maintained. The best that maintenance can achieve is the inherent reliability and performance of the equipment that is built in by design. There is, therefore, a school of thought that says that the best way to overcome this limitation, in an outsourcing environment, is to also give the contractor responsibility for the design of the equipment. This can be done either by giving him responsibility for ongoing equipment modifications, or by giving him responsibility for the initial design of the equipment, as in a BOOM (Build, Own, Operate and Maintain) contract, which is gaining favour in many infrastructure projects.

Establishing an appropriate tendering process

The tendering process for a major outsourcing contract is likely to be different to the contracting process for major capital works in a few key aspects.

Of particular importance will be the explicit consideration of risk at various key points in the contracting process, and the identification of appropriate strategies for managing those risks. These could take the form of either shaping or hedging actions.

Shaping actions are those action undertaken to minimise the likelihood of the risk factor occurring. Hedging actions are those actions undertaken to minimise the impact of the risk factor, should it occur.

In addition, the evaluation criteria for the selection of an appropriate maintenance contractor are likely to be quite different from those for a major capital project. It is likely that significant work will be required to develop appropriate criteria, and to ensure that sufficient information is obtained from tenderers to be able to make an informed decision.

Establishing an appropriate specification of requirements

The specification of requirement during the tendering process will need to be carefully considered. In particular, for those contracts involving large-scale outsourcing of most maintenance functions, there will be a requirement to ensure that the requirements specification is outcome-based, rather than input-based. In other words, the specification will need to detail **what** is to be achieved from the contract, not **how** it is to be achieved, or what inputs will be required for its achievement. In PricewaterhouseCoopers' experience, ensuring that **all** the required outcomes are specified is a major undertaking. Agreeing how the achievement of all of these outcomes will be measured is also, potentially, a huge undertaking. For example, in one recent outsourcing contract, a desired outcome was the achievement of long-term plant integrity. Deciding how to measure that was a difficult process.

Establishing an appropriate contract payment structure

There are a number of alternative contract payment structures. These include:

- Fixed or Firm price
- Variable Price
- Price ceiling incentive
- Cost plus incentive fee
- Cost plus award fee
- Cost plus fixed fee
- Cost Plus Margin

Each of these price structures represents a different level of risk sharing between the contractor and the outsourcing organisation, and a number of considerations will need to be made in determining the most appropriate payment structure. These include:

- The extent to which objective assessment of contract performance is possible
- The ease with which realistic targets can be set for contractor performance

- The administrative effort involved with each payment option
- The degree of certainty with which the desired contract outcomes can be specified

Transition arrangement may be put in place to gradually transfer the payment structure from one method to another over time, as a greater degree of certainty over the requirements of the contract, and more accurate knowledge of target levels of performance is established.

Establishing an appropriate contract administration process and structure

Before the contract is let, the client will need to have decided on the appropriate contract administration process, and the roles and responsibilities of his own staff in managing the contract. He will also need to establish the structures, processes and equip his people with the skills to perform the required duties. We have seen many potentially successful outsourcing contracts fail, simply because the client did not manage those contracts effectively.

Establishing an appropriate structure for the contract document

In our experience, most standard contracts in place at most organisations, are not appropriate for large outsourcing contracts. Many Standard Terms and Conditions are inappropriate for large, long-term service-related contracts - particularly those that are of a partnering or gain-sharing nature. We have found that it is best to combine Special Conditions of Contract with revised Standard Conditions of Contract to develop a new contract structure that is appropriate for the particular contract being let.

Managing the transition to the outsourced arrangement

There are many issues to be addressed by the outsourcing organisation in the transition to the new arrangements. Among these are matters such as:

- Staff - which will be retained by the organisation, which will be employed by the contractor, which will be let go?
- Drawings - who has responsibility for ensuring that drawings are kept up to date, who will be the custodian of site drawings?
- Computer systems - will the contractor have access to the client's Computerised Maintenance Management system? Will they maintain their

- own computerised Maintenance records? Who is responsible for ensuring that all data in the Computerised Maintenance Management systems are accurate?
- Materials Management - will the contractor provide his own materials, or will the client provide these?
 - Workshop facilities and tools - who owns and maintains these?

Agreeing contract termination arrangements

Another critical issue that needs to be addressed before the contract is let, is how the situation will be managed if the decision is made to terminate the existing contract. In particular, agreement needs to be reached regarding the duties and obligations of the outgoing contractor in handing over to the incoming contractor (or the client organisation, should they decide to bring maintenance back in-house).

Conclusion

While these are some of the major considerations for organisations considering outsourcing maintenance, there are many others that cannot be covered in this paper due to restrictions in time and space. Needless to say, the decision to outsource any major function, such as maintenance, is not one that should be taken lightly, and careful consideration of all major issues is vital, if the transition to contracted maintenance is to be smooth and satisfactory to both parties.