Making maintenance contracts perform

How can we move to asset based performance contracts where the supplier carries risk and has a stake in the successful performance of the assets it maintains?

by Mike Levery

The activity called 'maintenance' is in turmoil: core or non-core; in-house or outsourced; integral with production/ operations or a service function; reactive or planned; cost or value added? These questions are asked repeatedly, yet what may prove to be the right answers one day are not appropriate to the next day's circumstances.

Since the early 1990s, the drivers for outsourcing maintenance have grown and there has been a pronounced shift to maintenance being a non-core activity. Yet there is dissatisfaction across many market sectors with the way outsourced maintenance has turned out. What initially looked like an appealing way forward has not delivered the real benefits that were anticipated. Even so, the trend seems irreversible; successful contracting organisations of the future will have to be prepared to take on risk to ensure the client gets best value from their maintenance service. Maintenance embraces both long and short-term planning, operational expenditure and capital investment costs, and a diverse range of skill requirements for varying types of asset. Given this level of complexity, the question is: how can maintenance contracts best be developed to meet both client and supplier needs?

The changing marketplace

The significant growth of the UK service sector, coupled with a shrinking manufacturing sector, has led to an explosion of facilities management (FM) companies providing maintenance services across a range of relatively standard equipment. This has set the trend for the maintenance activity being mainly provided by suppliers, in contrast to the manufacturing sector tradition of maintenance being managed and delivered by the client. FM companies are now seeking to take maintenance out of the core activities of the more traditional industries as well. This has been particularly noticeable in the utilities sector and is happening more and more on non-productive assets in the manufacturing sector.

Another aspect of the push toward the outsourcing of maintenance is the shortage of suitably qualified personnel. The average age of skilled maintenance craftsmen has increased in the last decade, and fewer school leavers see maintenance as a career. As a result, organisations are having difficulty in recruiting appropriate personnel, and look to FM companies to provide the necessary levels of skill. There are no signs as yet of a change in this trend. With the growth in the service sector, which requires lesser skilled personnel, other market sectors are finding the maintenance skills they require hard to come by. In addition, in order to penetrate the more lucrative 'high tech' end of the maintenance market, the FM companies are snapping up highly skilled maintenance craftsmen to sell back into this market sector.

Why outsource maintenance?

Even companies who already have the necessary skills for maintaining their facilities are now looking to the marketplace for potential outsourcing. In a world where productivity is king, the maintenance function is commonly seen as a cost and an overhead, adding little value to the production or operational processes. Moreover, the perceived 'maintenance culture' of engineers doing what they want to do without regard to production/operational needs, or involving other key stakeholders, has proved difficult to break. This creates the illusion that an external provider is bound to perform better than an in-house maintenance department. 'If only the maintenance 'problem' could be outsourced, then we can get on and deal with our core business' is the cry of many organisations. At the same time, there is a failure to understand the difference between an in-house maintenance function and a contractual arrangement for maintenance services. Assumptions are made that outsourcing will deliver lower costs, tighter control, more productive maintenance personnel, greater levels of expertise and a client-friendly focus.

Procurement functions, through establishing supply contracts and benchmarking, reinforce the assumption that better value maintenance will be obtained through outsourcing. Indeed there are often 'quick wins'. Yet time and again organisations grasp the short-term benefit of a reduced headcount to find very quickly that asset performance and availability are reducing, and failures are increasing, while the supplier is meeting all his contractual obligations. But once the outsourcing decision is made there is 'no going back': rarely is there an admission that the outsourcing decision was flawed. So if things aren't working out then it must be the fault of the supplier. The fix appears simple: try to make the supplier perform, and if this fails, re-tender and get the right supplier next time. The reality is that nothing changes.

Maintenance contracts

The vast majority of maintenance contracts across market sectors measure 'people' performance and not the performance of the assets that are being worked on. Arrangements where suppliers supplement an in-house maintenance organisation involve provision of skilled craftsmen at agreed hourly rates. Quality of work and effective use of craftsmen are the client's responsibility to manage, and a poorly performing craftsman would be returned to the supplier with a request for a replacement. More formal maintenance contracts, which involve tendering, are usually presented to the marketplace as a fixed package of planned maintenance work for pricing on a lump sum basis together with a schedule of rates for repair work.

How does the supplier respond to these two very different types of maintenance need? In the first case he (or she, as is often the case and assumed throughout this article) will work very hard to establish a good working relationship with the client in order to maximise the use of available personnel, whether they are good or poor performers. He makes his money from selling labour resources not necessarily maintenance expertise. However, when competitively bidding for maintenance work that he wishes to win, the supplier will generally treat a fixed price planned maintenance package as a potential loss leader, knowing that he will make his money on execution of repairs against a schedule of rates. In neither of these types of contract does the supplier see himself carrying the risk for asset performance as a result of the work carried out. His objective is to maximise his return from his resources, and volume generation is the most effective way of securing improved profits.

It is little wonder that there is a feeling of frustration and disappointment about the benefits of outsourcing maintenance once the initial cost saving has been gained from the outsourcing process itself.

Understanding decision-making in maintenance

The simplest way to understand the difference between in-house maintenance and maintenance provided by a supplier on a contract basis is to understand the decision-making process that a craftsman goes through when faced with a problem. In approaching the resolution of the problem his first thoughts are to determine how best to carry out the work in his own interests before considering his employer's expectations. Typically the thought processes would include:

For the craftsman:
- How quickly do I want the job done?
- Is there a financial benefit to me (e.g. overtime)?
- Is it convenient for me to deliver the right solution now?
- Do I really want to do this job?

For the employer
- What are the operational circumstances and how should I execute the job to meet them, i.e. quick fix or final solution?
- Are there other alternatives that will provide a more effective long-term answer to the problem?
- Is the repair best done in the field or is it more effective to be carried out in the workshop?

However, in a contractual relationship a craftsman employs another stage of questioning. Instead of being directly employed the craftsman now works for the maintenance supplier and would ask questions for the benefit of himself, exactly the same as if he or she was directly employed, but the questions covered for the employer (the maintenance supplier) change to:

- Have I met the contractual measures with respect to the performance indicators in the contract?
- Is there an opportunity for further work in resolving this problem?
- What solution will maximise the benefit to the supplier?

The client's key questions—formerly the employer's—now get pushed to the bottom of the list. The failure of many organisations to grasp this changed emphasis in decision-making is a key reason for dissatisfaction with outsourced maintenance arrangements.

Although in-house maintenance departments may appear to be a law unto themselves, they really understand production/operational needs and usually make the right decision in the best interests of the assets. Outsourced maintenance organisations make decisions to meet their contractual obligations first.

So if this has been the experience of outsourcing maintenance, what must we do to make outsourced maintenance work for us?

Maintenance risk

There needs to be a fundamental shift in client thinking from treating maintenance just as a service to one which recognises the value it adds to operational performance when done effectively. But how do you measure effectiveness? And, crucially, why should the supplier be truly effective with maintenance work when this will reduce his potential turnover and hence profit?

The answer is to incentivise a supplier to perform effectively by rewarding him for achieving predicted asset performance based on the level of risk it carries; the greater the risk, the higher the reward (and, similarly, risk carries penalties for failure). The reward must provide sufficient incentive to outweigh reduced suppler profitability through a reduction in turnover, as a result of the supplier being effective in maintaining the assets.

I can hear the cries of anguish from certain quarters at the notion of 'giving money away' for doing 'what they should do anyway'. Yet these comments invariably come from the 'screw the supplier for best value' brigade. One senior executive from a major (and struggling) infrastructure company stated that, 'We only want successful and profitable companies working for us—provided they don't make a profit at our expense'. This comment was made quite openly at a conference of their infrastructure suppliers. What do you think the suppliers made of their client's attitude?

A methodical approach to outsourcing must be taken which does not regard maintenance either as a departmental function or merely a service provider. The approach to outsourcing maintenance must focus on both service and asset performance, and be driven by risk evaluation and the capability of the marketplace to service that risk.

Asset based performance contracts

What do we mean by asset based performance contracts? The objective for successfully moving outsourced maintenance on to a new risk based platform is to shift the focus of the contract from measuring the supplier's service to measuring how the assets perform. Inherently these contracts must be long-term for the supplier to have a stake in the long-term performance of the asset. These forms of contract are most readily applied on new facilities, which have been commissioned and are fully meeting the operational demands. In the brownfield situation, they start by measuring current asset performance position with a view to improvement in the longer-term.

1) Objectives and performance measures

In order to establish the framework of the supplier arrangements both client and supplier must clearly understand how the assets will perform and what will be the asset condition on completion of the contract. Within this overall framework both parties must:

- identify the asset condition parameters to be used and apply them to: (a) the current situation; and, (b) the expected condition on contract completion;
- establish the asset operational performance criteria such as outputs, volumes and availability, in order to determine the key performance indicators (KPIs) that will be applied in the contract;
- establish KPIs to ensure that they truly reflect asset performance, and incorporate service measures such as response times if required;
- set a maximum of four KPIs, which truly meet the operational performance criteria —too many KPIs cause the focus on asset performance to be lost.

2) The mechanics of the contract

In order to ensure that confidence can be built into the working arrangements between the client and supplier, particularly where the supplier is expected to take on risk, asset based performance contracts call for an open book form of contract. It is therefore necessary to include the following features:

- *Forms of contract.* Whilst reference to the contract is not a regular occurrence, when it has to be used to resolve contractual disagreement, then a less adversarial form of contract such as the Engineering and Construction Contract (ECC) is more likely to promote a successful outcome.
- *Risk and reward.* Adopt an actual cost-with-fee approach against a schedule of rates and couple this with an annual target cost for each year of the contract to ensure that incentives are applied. Use a gainshare/painshare mechanism appropriate to the relevant degree of risk. Gainshare/painshare mechanisms reward/penalise both the client and supplier depending on the savings/overspends they achieve against the target cost. The percentage sharing of savings/overspends is usually directly related to the risk each party takes. For example, fully shared risk means that savings are split 50:50 between the client and the supplier as is any overspend.
- *Declared profits.* The fee element applied to the schedule of rates should separate out indirect overheads and declared profit, in order to ensure that the supplier's proposed profit for the work he executes is a reasonable return for his efforts. Traditional contracts where the supplier's profits are not visible often raise suspicions on the client's side that the supplier will compromise performance to maximise profit. Declared profits remove this suspicion as it is clear to all parties what the value of a target cost contract is in profit terms to the supplier.
- It is critical that the opportunity for the supplier to make a gainshare in the target cost arrangement must significantly outweigh any increase in declared profit it might gain through volume growth. This is necessary for the gainshare to act as a true incentive in reducing failure.

3) Clarity in the working relationship

With maintenance being a complex activity, then absolute clarity in the working relationship between client and supplier must be achieved up front before embarking on any asset based performance contract. It is therefore important that:

- *The mechanism for exclusions against the agreed target cost is understood in advance of contract commencement.* The reality of maintenance is that you can only plan for the known circumstances and unpredictable eventualities must be identified and catered for outside the target cost framework.
- *To build confidence in the relationship there must be regular, objective and performance-based meetings between the client and supplier.* Openness and honest communications are a prerequisite.
- *The target cost must be agreed annually based on the supplier's management plan for that year, ensuring that resource requirements are matched to the performance targets.* There is usually a significant difference between the client's and supplier's expectations when it comes to annual costs, which can be difficult to bridge through negotiation. The target cost, in order to be realistic, must be built up jointly between the client and the supplier.
- *Issue resolution and performance monitoring must be done on a face-to-face basis and the results recorded.* If the parties' first resort is to communicating in writing then trust in the relationship will be lost.

While performance contracts have been used successfully for maintenance in the North Sea oil and gas industries, there has been little take-up in other market sectors. The utilities sector, however, having outsourced some aspects of their maintenance activities, are considering asset based performance contracts in order to ensure that maintenance contractors take on some of the risk for the work that they do.

In April 2001, Dwr Cymru/Welsh Water (DCWW) established new forms of contract for operating and maintaining the sewerage network in Wales. Formerly 29 organisations—predominantly local councils—had managed DCWW's sewage network and pumping stations. DCWW has now introduced asset based performance contracts with specialist suppliers for each of these types of asset.

Target costs and capital maintenance investment are agreed on an annual basis with each supplier, together with performance indicators focused on both regulatory and asset measures. In the case of the network maintenance contracts, the suppliers' performance measures cover pollution incidents, serious external flooding, and internal flooding of properties. Effective maintenance of the network through timely blockage clearance and repair work where repeat blockages occur will realise reductions in the number of pollution and flooding incidents. The operation and maintenance of the sewage pumping stations is predominantly a mechanical/electrical activity with performance measures covering pump failure and pumping station failure.

The financial and performance targets are agreed on an annual basis throughout the period of the four-year contracts together with a management plan for delivery. The supplier has full control in delivering his service against the agreed targets, and takes a significant bonus for his share of the risk from any savings that are achieved. Needless to say, if the performance targets are not met then no financial bonus can be awarded.

Freed from the restraint of working to a traditional form of contract the contractors have been enabled to introduce innovative thinking to meet the contractual objectives. One of the pumping station contractors, with some 400 stations to operate and maintain, agreed a management plan that replaced standby and callout arrangements with a dedicated team to respond to out-of-hours failures. The contractor was able to demonstrate that this dedicated team would cost no more than the standby and callout arrangement. A rota system ensured each team on the contract regularly covered out-of-hours working. The contractor's rationale was that although the out-of-hours team was paid the standard rate, the team earned no financial bonus for attending failures. The incentive would therefore be to reduce failures out of hours and hence failures in general. Within six months of operating the arrangement, the first full week with no out-of-hours failures was achieved, something that was previously unheard of.

The contracts are delivering both reductions in pump and pumping station failures and a reduced number of sewage flooding incidents, the very measures on which regulatory targets are set. The regulatory review by OFWAT in 1999, which established the price limits on household bills until March 2005, assumed an operating efficiency target for sewerage of 20%. These contracts are already showing that order of efficiency saving in their first year of operation.

4) Risk and reward

It is human nature to expect others to take on risk and yet be reticent with rewarding success against that risk. If you are not willing to pay for performance over and above that expected then you cannot move to asset based performance contracts. In order to ensure that both client and supplier are confident in the risk/reward process then you must:

- *Reward success absolutely.* This means that performance measures must be met for target cost savings to be rewarded. The supplier must be clear that asset performance and cost savings cannot be traded; otherwise asset performance will be compromised.
- *Limit the 'painshare' element of potential supplier losses to the value of its declared profit.* If losses start to eat into the supplier's actual costs and overheads then it will no longer perform effectively but will instigate cost cutting measures which may affect asset performance. This is not in the client's best interests.
- *Have in place a formal contract review process* triggered by: (a) failure to meet KPIs; and/or, (b) target cost overspend above the value of declared profit. Any contract review process could well lead to contract termination if recovery mechanisms cannot be agreed. The earlier the potential failure is identified and resolved, the better for both parties.

5) Operating costs (OPEX) and capital investment (CAPEX)

This is perhaps the most difficult area for resolution in risk/reward arrangements. Many organisations use capital maintenance as a back-up fund to the maintenance budget for 'one off' failures. You cannot agree a target cost for OPEX without understanding how CAPEX will be managed. If the supplier has no input to the CAPEX management process then it will make its own assumption about large failures and demand that they are funded outside the target cost mechanism. It is vital, therefore, that the following features are in place:

- *Definition.* There is a firm definition of what constitutes OPEX and what is not covered in the contractual arrangements and will be funded through CAPEX.
- *Authorisation.* The authorisation mechanisms for CAPEX are clearly understood together with how investment priorities are determined. It should always be the objective of the contractual arrangement that the drive for establishing those priorities should be with the supplier if it is truly to maintain its focus on asset performance.
- *Investment.* The client must understand that they cannot opt not to spend money on improvement and yet expect the supplier to meet performance and financial targets where assets are clearly failing.

For asset based performance contracts to work effectively then the onus for asset improvement should lie with the supplier. At the end of the day the supplier has the technical expertise, is delivering the day-to-day work, and is best placed to make those investment decisions. The client must recognise, however, that investment which improves asset performance, necessitating an adjustment of KPI and financial targets, will reduce the supplier's volume of work. Cost-effective capital investment under the supplier's control should be able to trigger gainshare benefits reflecting the reduced return the supplier gets from its declared profit as a result of volume reduction.

Summary

There is a commonly held view that any contract that has to be managed tightly by the client to ensure that the contractor performs, and attempts over the years to translate this thinking into maintenance contracts has generally proved to be unsuccessful. Contracting organisations will always seek to maximise their return within the limitations of a contract, and in the field of maintenance this has an adverse effect on the performance of the assets.

Asset based performance contracts focus the contractual effort on ensuring the assets perform, and suitably reward the contractor for the risk taken in meeting the agreed performance criteria. Significantly, a deeper and more mature understanding of the contractual relationship works to the benefit of both parties.

Reference

1 Latham, M.: Constructing the team: final report: joint review of procurement and contractual arrangements in the United Kingdom construction industry, July 1994

Mike Levery is Managing Director of MCL Consultancy Ltd. He can be contacted on +44 (0)114 257 8282, email mike.levery@mclconsultancy.co.uk.