Software Measurement Services [Ltd]

Outsourcing with Output-Based Contracts

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Many people with experience of outsourcing report that "performance measures and the quality of the outsourcing relationship are more important than the contract as [the] primary management tools…".

This was one of the important findings of a survey sponsored by Accenture (reported June 2004), of organisations with 'deep experience' of outsourcing. The survey prompted responses from 565 correspondents, 58% of whom were CXO or functional level executives. The global, cross-industry survey focused on large enterprises, with 78% of the correspondents working for organisations with revenues of over $500 million USD pa. IT was reported as the most commonly contracted out function (60% of respondents), significantly leading 'Training' (43%), 'Supply Chain' (41%) and HR (31%).

Veteran outsourcers focus on three top objectives:

- *reduced costs*
- *improved processes*
- *the ability to focus on their core business*

The survey went on to disclose that "Veteran outsourcers focus on three top objectives: reduced costs, improved processes, and the ability to focus on their core business." It found that "While most are looking for up front cost savings, what companies really expect are continuously declining costs." The respondents, 220 of whom had more than seven years experience of outsourcing, reported that continuous cost reduction, "…simply cannot be achieved by doing today's process the way it is done today. Inevitably, companies are driven to look beyond cost toward deeper process improvements and business transformation." Crucially, those responsible for managing outsourced services need to incorporate the identification and achievement of the desired business outcomes into their measurement of the performance of their supply-side partner(s). The survey authors said that, "Establishing business outcomes is all about the outsourcing company answering a few critical questions, beginning with "What do I want the provider to optimize?" Is it price or speed or quality or a combination of these?"

These findings seem critical, especially as the trend for outsourcing continues to grow and CIOs are told to "outsource or die", by Silicon.com amongst others, and that, "The good CIO, the one who will remain and stay in charge is the one who learns how to outsource" by people such as Philippe Courtot, CEO of Qualys.

Contrast this with the findings of a more recent poll conducted in Q4 2006 for ComputerWeekly, which found that "IT directors and CIOs are failing to measure the benefits of IT to their organisations in a systematic way, with only 42% having systems in place to track the value of IT to the business". This must suggest a significant career risk for some CIOs, as one might expect successful, ambitious executives to grasp performance measurement as an opportunity to help strengthen the relationship between IT and the company board, to demonstrate the value of IT and their own ability to participate as a full member of the company's senior management team.

Establishing this connection seems sorely needed, as the ComputerWeekly poll found that 1 in every 3 IT directors said they did not feel sufficiently empowered by their boards, and 1 in every 4 said the board did not understand the importance of IT to the business. A further 33% said their company's business processes were not well integrated with IT systems. Ensuring business processes and IT systems are aligned is vital if systems are to deliver their maximum value to the company… and this applies whether the systems are insourced or outsourced.

However, if CIOs fail to align IT systems to business requirements, if they fail to make the delivery of business value their prime focus, or if they neglect to quantify the value delivered by IT and to make it apparent to their business customers, then it can be no surprise if company management loses patience and decides they'd be better off outsourcing.

Both the surveys mentioned, and many others, support SMS' own experience in helping both customer- and supply-side partners to get the most from their arrangements and avoid wasteful disagreements and digressions. Mutual commitment to objective performance measurement and tracking against desired business outcomes is key. Output-based contracts are the means to this end.

Output-based contracts

An output-based contract is simply an agreement between a customer and a supplier, where the remuneration due to the supplier is directly proportional to the quantity of output delivered to the customer. In its simplest form, the two parties agree a 'price per size unit delivered', expressed as 'Pounds Sterling per Function Point' or equivalent.

Basing supplier remuneration on the ‘size of the functionality delivered’ ensures the necessary objectivity. All the ISO-standard variants of function point analysis – IFPUG, MkII or COSMIC – are designed expressly to measure functional size independently of technical, quality and environmental factors. This enables meaningful comparisons and analysis of software development efficiency to be made across the market sectors in which the customers for these services are positioned. Although the productivity that can be expected of different projects conducted using different processes and technologies will vary, projects conducted using similar processes and technologies ought to exhibit similar productivity. Most organisations try, in any case, to stabilise their processes and technologies to reduce variation and facilitate predictable outcomes. So it is perfectly possible, using benchmark data and cost models such as COCOMO.II.2000, to calibrate 'stereotypes' (a.k.a. 'project profiles') for the various types of work commissioned. Appropriate productivity rates for each 'stereotype' can be derived relatively simply, and then a fair and reasonable 'price per size unit' can be negotiated for projects with characteristics similar to the stereotype.

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The work commissioned is then paid for based on a measurement of the functionality it delivers to the business users (establishing a link between IT cost and business benefits) multiplied by the agreed 'price per unit size'. Suitable safeguards regarding the audit of size measures, and the control of changes to scope late in the project life-cycle, are usually demanded and built into the contract, but the principles remain very straightforward… and effective. The approach incentivises the developers to focus on the business needs, as the customer only pays for functionality that is traceable to the business requirements.

The stereotypes identify relevant cost drivers. These can be categorised into those that are the sole responsibility of the supplier, those that are the responsibility of the customer, and those for which there is a mutual responsibility. Regular monitoring of process performance and the effects of cost drivers, combined with periodic review and adjustment of the unit prices, assures all the stakeholders that they continue to get a 'fair deal', while motivating the partners to remove unnecessary waste from the work processes.

Many output-based contracts incorporate agreement that the unit prices will progressively reduce over time, to reflect the desired business outcomes for continuous cost reduction and improved processes.

Low cost is no good if the supplier fails to fulfill the business expectations

Achieving the goal of continuously declining costs, while improving product quality, increasing velocity and maximising deliveries of value to the business requires discipline and maturity. It requires attention to every step of the end-to-end network of processes. That is, to the entire value stream that takes raw ideas, requirements and effort, and transforms them into working systems and services. One-off, 'point initiatives', and local optimisations can't sustain the required trends. Even outsourcing to a low-cost offshore supplier will be a one-shot wonder unless both the outsourcer and the outsourcee integrate the upstream and downstream processes and incentivise the behaviours necessary for continuous improvement.

Really, it is all about managing risk. Low cost is no good if the supplier fails to fulfil the business expectations.

Procurement best practice and the Capability Maturity Model®.

Some people seem unaware that the original purpose of the Capability Maturity Model®, created in 1987, was to provide a set of criteria against which candidate suppliers could be evaluated in order that their customer might minimise the risk of contracting out large programmes. Long experience had taught the US Department of Defense that choosing the lowest price bid was a poor strategy for a successful project. Rather, customers need assurance of success and value for money. The subsequent world-wide use and further development of the CMM® family of models has grown out of the desire of both customers and suppliers to minimise risk by systematic improvement of process efficiency and effectiveness.

Procurement best practices have developed with widespread use of the CMM® They include the concepts and practices of integrated project teams (IPT), as used in the UK Government's SMART Acquisition method, and Integrated Product & Process Development (IPPD). These practices are specifically relevant to organisations committing to outsource management control of part or all of their core business systems to an external service provider.

This takes us back to the survey findings mentioned at the beginning of this article. Building a positive, open, mutually beneficial, relationship where each party has confidence that their partners will work to achieve a shared vision is the key to sustained success. Such a relationship is supported by visible performance measurements, linked to an output-based pricing mechanism.

Commitment to any outsourcing arrangement immediately establishes a situation where groups of individuals from multiple organisations must necessarily work closely together to achieve mutually-agreed goals – that is, the customer's desired business outcomes and the supplier's margin, increased turnover and value of intellectual assets. This is precisely the situation wherein IPT & IPPD practices are most useful, as they provide a framework which fosters the spirit of partnership and focus on the common goals necessary for a successful outsourcing relationship. A simplistic approach that relies on people sticking to the letter of a services contract is a poor and inferior substitute for such a partnership.

Management and integration of goals and practices in long-running customer-supplier relationships is so important for many organisations (and even national economies) that the Software Engineering Institute (SEI) has released a Capability Maturity Model for Acquisition – http://www.sei.cmu.edu/cmmi/models/ – (with a new version due for release in 2007). This is explicitly for use by customer-side partners so they can develop their maturity in parallel with their supply-side partners, who are advised to base their performance improvement programmes on the Capability Maturity Model for Development (i.e. CMMI v1.2 being the current version). Maintaining a degree of parity between customer and supplier with respect to their organisational maturity and capability avoids domination by one party, and helps each sustain its obligations and commitments.

Conclusion

Those with significant experience of outsourcing have clearly learnt much, and leverage the relationships formed between customer and supplier staff to efficiently and effectively deliver value to their businesses.

The mechanisms for successful outsourcing are not new. They are tried and tested. Output-based contracts provide an essential degree of objectivity, enabling all stakeholders to focus on the desired business outcomes, and aligning IT activities with the business requirements. Those just starting down the outsourcing route have the opportunity to take advantage of this hard-won expertise, or they may plough a lone furrow and do it the hard way on their own.

Grant Rule is a founding Director and currently MD of Software Measurement Services Ltd (SMS). Since it’s foundation in 1994, SMS has often been asked to play the role of a trusted third party, able to provide independent and objective advice to clients and their suppliers engaged in a variety of relationships. The services requested have included such things as:

- Benchmarking to establish productivity and related performance baselines for a multi-national corporation outsourcing the support & maintenance of its entire application portfolio;
- Rapid application portfolio sizing and valuation of an organisation's software catalogue in preparation for outsourcing all development and

enhancement activities, with supplier services funded on a ‘price per function point delivered’ basis;
- Capability evaluation of a long-list of candidate suppliers, with respect to the CMM and People-CMM, to enable the customer to identify a short-list of those suppliers that offered the least risk options for outsourcing;
- Estimating 'trail' costs and schedules from statements of requirements for the design, build, test and implementation stages of bespoke developments, to enable the client to evaluate and compare the risks inherent in offers from various candidate suppliers;
- Analysing the performance of a supplier's development processes, to explain to both parties to an outsourcing contract the variances between the plans and estimates and the observed achievements, identifying root causes and improvement opportunities;
- Facilitating re-negotiation, after 2 years, of a 7 year contract to outsource all application development & enhancement for a major insurance corporation to a major UK-based supplier, after both parties identified problems in meeting their agreed commitments;
- Quantifying process performance models of a company's programme management and software development processes, to facilitate better estimating and systematic improvement of their processes for managing their suppliers, developing in-house, and matching their deliveries to customer requirements;
- Framework agreements allowing the flexible call-off of Function Point Analysis, data collection, performance and estimating audits, and other measurement & analysis services so that customers can monitor the continuous performance improvement expected during long-running supplier agreements, where supplier invoices are proportionate to the functional size of the delivered software.

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Author Biography

Grant Rule is a founder and current Managing Director of Software Measurement Services Ltd. With over 34 years experience in IT, Grant is a recognised authority in using quantitative methods to continuously improve the quality of the software process and its products. He is in the forefront of applying lean engineering principles to the software improvement process.

Grant worked with Ken Dymond to introduce the Software Engineering Institute's 'Capability Maturity Model' into the UK, and helped bring to Europe the first public 'Introduction to the CMMI®' training. He has contributed to structured methods and to ISO standards, and helped improve the inter-counter consistency of counting practices for IFPUG and MkII Function Point Analysis. He is a member of the COSMIC core development team

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Software Measurement Services is a specialist, independent UK consultancy working with decision-makers in blue-chip companies and government departments to improve the results delivered by the development of software and computer systems. Our consultants are at the forefront of developing and supporting best practice in managing software process performance.

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