Death by a thousand SLAs: a short study of commercial suicide pacts

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Abstract

A study from the coalface of more than 11 large governmental and private managed service contracts within Europe and the US, worth over $10B, has demonstrated significant weaknesses in the manner that service level agreements are formed, and the expectations of their application during the delivery of those services. This short paper summarises a major weakness in current processes and proposes a new and more mature approach to the problem currently being trialled by HP – White Box or *Open Analytics*.

$875M loss and counting

Two years ago EDS celebrated the award of an eight year contract to maintain the systems and software for the US Navy's and Marines computing and internet infrastructure, NMCI. In the last two quarters, EDS have had to make a total provision of $875M (so far) against this contract. As a consequence of the service providers inability to meet the stringent performance targets, set down as part of the deal, the company has been unable to fully deploy their intended solutions and have suffered a major loss from the inability to charge under the contract.

At first sight this might seem a considerable win for the US Navy and the Marines - after all they have not paid for a computing system that has failed to meet their expectations, indeed they have managed to financially punish the errant supplier. This is illusory. Given that the US Navy and Marines needed the systems in the first

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NMCI (Naval and Marine Corps Intranet

At full scale this contract will support 690,000 users with 4 network operations centres. There will be 31 unclassified and 21 classified server farms. The network infrastructure will link 300 bases and support 300,000+ seats on a single global network (NMCI, 2004). The primary issue for the supplier is that payments are utilisation based, but EDS needed to install all of the `plug' end services before they could receive any utilisation payments. Furthermore, the Navy and Marine Corps had `sign off' on the release of services to users. Again, if they do not sign off on the service then EDS does not gain any revenue, let alone make any profit, whilst having already invested heavily in the fixed infrastructure.

Box 1 - The NMCI deal

instance, the fact that they have not been deployed means that they must still be operating with the equipment they intended to replace, which is presumably not delivering the capabilities that they desire.

In its current state the NMCI deal can be regarded as more of an accidental suicide pact than a commercial deal. EDS have suffered massive penalties and yet the Navy and the Marines have not got the systems they desired. Nobody has won. Indeed if the Navy and Marines were commercial organisations with the usual market competitors, this extended delivery schedule could well have left them at such a commercial disadvantage that they would have ceased to trade.

A vicious, but totally predictable - even without the advantage of hindsight - interaction between roll-out, performance requirements, and interpretations of their delivery have smashed this project – conceivably beyond recovery in its current form.

Aggressive performance requirements – Fair or Foul?

One of the main reasons that such aggressive performance requirements are being placed on IT outsourcing deals is the historic view of the value of IT to commercial organisations. Strassmann (1990) has demonstrated that it is very difficult to see any economic benefit from IT investments at the level of an organisations financial performance. Indeed, many of his observations would lead to the conclusion that IT spending has a negative impact. Unsurprisingly, there are many who will argue with this position (Brynjolfsson and Hitt, 1996 provides a good summary), but most of their arguments for the benefits of IT lie in areas which are difficult to quantify, such as customer satisfaction, competition, service improvement etc. This is a major problem in the context of outsourcing where

one the usual mantras is *measurability - everything must be quantified*. As a direct consequence the obvious temptation when a service is not delivering value, with the service parameters established at particular values, is to change them in the direction of greater performance. Whilst this might work if the business case for the particular choice of service parameters was well understood initially, it is very unlikely to work in the Strassmanesque world for no perceived benefit. The hope that benefit will accrue simply by tightening parameters that are not currently delivering value is woefully naive.

Performance and cost – an inevitable trade off

In all engineering environments, a requirement for greater performance leads to greater costs, greater complexity, and less flexibility in the system, and as a result a far greater risk that the system may not be successfully constructed at all. The drive to increase the performance of the system through the setting of increased service levels, rather than through an understanding of business need simply leads to the development of more technology rather than improved business performance.

Fundamental to all of these agreements is the question of why were the performance requirements set at a particular level? Unless the business need and consequences of a particular level of performance are well understood it is unlikely that any engineering organisation can deliver a well thought out solution.

Engineering service levels

An engineer is someone who can do oar a quarter what any fool can do for a dollar.

There are many current approaches to the setting of performance requirements in the construction of an IT service

- the original finger - someone, usually a senior business manager, makes a guess;

- the expert finger - someone after a long intake of breath (to indicate the depth of their experience) makes a guess;

- poke and hope - pick a big number and hope the supplier falls for it;

- 'best industry practice' - look around at what has been achieved and add 10% .

All of the above approaches have interesting consequences, especially for those of a lawyerly persuasion. Inevitably such approaches lead to problems for which the source will be difficult to trace. In such situations the two, or more parties, to the deal will reach for their lawyers. Since no one is in a genuine position to know why a particular SLA matches a specific business need, the consequences - or benefits of not meeting or even exceeding a particular number are difficult to estimate and potentially worth fighting over.

Performance and cost inflation

The current situation is similar to an inflationary spiral. Systems do not deliver the desired results, so SLAs are tightened in the expectation (hope) that this will 'fix' the problem, so the systems becomes over engineered and more expensive and brittle and they therefore do not deliver the expected advantages. In such a 'death spiral' neither side is benefiting and the long term consequences for both parties are less than palatable. This can only be resolved if both parties are aware of the consequences of their decisions on the other - they are within a co-evolutionary spiral (see Box 2). In particular both an awareness of the engineering consequences of a particular SLA requirement and the business value of that requirement are essential for any rational decision making in this space. The actual complexity of these deals where multiple parties come together in order to deliver a solution to a company makes this even more risk prone. Inevitably if things go wrong all the parties will seek to shift blame from themselves and the lawyers' profits will simply multiply.

White not black box delivery

Systems delivery needs to take a 'white box' approach which we call *Open Analytics*. All of the assumptions upon which the service delivery design relies need to be made explicit. This is essential when such requirements are being passed on to subcontractors. All of the models which explain why the designed service will meet its goals should be available to all of the parties within the deal. This ensures that not only the customer knows that this is the 'best' solution, but why it is and what are the technical and financial consequences of moving from that point. Furthermore such an approach makes it clear as to what are the consequences of 'miss estimating' the service requirements, especially the tolerance to variation in the system loading.

Such an approach has been taken within the supply chain by the most successful car companies (see Box 3). This approach should be taken within the provision of information technology and communications equipment and services.

In order to achieve this there needs to be a change in both the purchasers of IT outsourcing solutions and the providers. The purchasers need to generate the equivalent of the UK's 'house seller's pack'. In this instance , the patterns of load that they expect to be meet and the level of variation that they expect around these requirements. This should be sufficient information to form the basis of a 'non-functional' contract, which is a contract that describes all of the performance elements of the system. The change in behaviour of suppliers required is focused on explaining to the customer the engineering consequences of meeting their SLAs.

Lead architects must be able to provide an account of the linkage between the systems performance and the business requirements that lead to that need. The metrics that give evidence that the business need is being met should be established, along with the requisite measurement frequencies which demonstrate continual success at meeting the objective.

Suppliers should be demonstrating how they are comparing the performance of one system with another and what are the amelioration mechanisms if the system fails to meet up with expected performance. Information should be given on the sensitivity of the system to variation in the design assumptions both on load and performance. Unlike many physical systems, computing systems can have highly asymmetric responses to variation in loading assumptions. Planning to cope with the consequences of variation and the implications for the delivered service in the presence of unexpected requirements should be presented.

Finally, all of the above should be in the form of open audit-able mathematics, rather than wet finger in the air responses to requests.

Takeaways

- No business is an island - SLAs are integral to your business.

- If you understand your SLA requirements you understand your business and vice versa.

- Converting requirements to SLAs is complex.

- Defining requirements and generating appropriate SLAs and governance mechanisms is not impossible, and the benefits are huge for all parties.

- The wrong SLAs will destroy your business.

- Does your supplier really know your business?

- SLAs must change with your business.

Box 3 – SLAs Bite

The tyranny of numbers

One of the problems of assigning values to activities is the implied precision. Numbers are too often treated as containing information that they do not. In the absence of understanding of what the numbers mean for the business *there is a temptation to change them for their own sake*. With little or no understanding of the meaning of measurements the temptation is almost always to attempt to improve them in the hope that something good will happen. The

long term consequences of the drive to improve SLAs with no understanding of their value will have an inevitable destabilizing effect on both the suppliers and the customers. If this trend continues then only the suppliers with the deepest pockets will survive the repeatedly unknown risks in undertaking such contracts. Within the IT service industry this is likely to lead to a duopoly in the long term at which point IBM and HP will be able to dictate business terms. Tempting perhaps, but not good for business in the long term.

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