A Tale of a Web Services Initiative: 
What Really Matters in Benefits Realization

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Abstract. Despite the reemerging focus on business value realization of IS/IT investment, there is still comparatively limited knowledge on what an organisation can do to achieve the benefits it desires from IS/IT. Amidst the economic downturn, there needs to be more emphasis on value delivery of every investments an organization made, including investment in IS/IT. Through a story of successful web services initiatives of a multinational automotive engineering and manufacturing company, this paper tries to draw attention to a myriad of factors that contributes to the successful business value realization.

Keywords. Benefits management, benefits realization, ROI, web services, SOA, business-technology alignment.

1. Introduction

In the fast paced changing business environment today and amidst what has become a global recession, IT executives are facing the challenge of justifying IT investments and meeting expectations [1,2,3]. This increasingly difficult task is one of the legacies of mistrust and scepticism towards IT in general left behind by the dot.com era [4]. Yet, it is important to sustain as well as position IT for future business growth and try to leverage IT as a competitive advantage [5,6,7]. Considering that IT represents one of the fastest growing area of capital expenditure [8], it is pertinent for any organisation to ensure that its spending on IT is well justified and produced a significant value to the organisation [8,9,10]. The fact that IT spending does not guarantee the delivery of business value, emphasise the need for businesses to carefully plan their IS/IT initiatives in the attempt to maximise the value of an IT investment [3].

Most IT initiatives fail not due to incompetent technology but due to unavoidable business and management factors that is not well managed. The problem with (often-much-hyped) technology is organisations are tempted to use them just for the sake of having them and not being seen as 'laggards', or simply to 'follow the Joneses' (a common phenomenon in the early days of e-commerce and ERP). This attitude simply does not bode well for the organizations' attempt to reap the optimal benefits from their IS/IT investment.

Web services technology has gained a prominent standing in the past few years, especially with the emergence of SOA. Like any other technology, businesses will not gain business value just by implementing this particular technology, but rather by carefully planning and matching the business requirements with the capabilities and properties of the technologies. As Nukala & Stein [11] points out: “Enterprise customers say the technology (Web Services) will survive because it makes a
business impact, rather than being adopted for technology's sake.”.

This research was initiated to gain a better understanding of the factors that contribute to the successful value creation and benefits realization from IS/IT investments. Our journey started with the regional arm of a multinational corporation in the middle of innovating its service deliveries through IS/IT, particularly the web services technology. Prior to describing the organization and our research project, we will provide a brief overview of the web services technology.

2. Web services technology & Service Oriented Architecture (SOA)

Bill Gates [12], Chairman and Chief Software Architect of Microsoft, once praised the power of Web Services. The technology enables a company offering a particular service to offer it to its partners so they can deliver it as part of their own offering. This seamless and highly tailored feature potentially could enable better cooperation between organizations as well as providing new opportunities to create more value by innovatively leveraging on a partner’s web services capabilities.

Although the definition of web services seems vary, in essence, A Web service is a software system designed to support interoperable machine-to-machine interaction over a network (e.g., an Internet-based network) [13]. The ability to facilitate interoperability between and amongst enterprise applications is one of the strength of this technology. “All web services share the desirable characteristics of self-description and the ability to discover other services with which to cooperate” [14]. Using fairly simple exchange protocols, such as SOAP, an application could be found and called remotely from any part of the network. [15].

With the growth of Service Oriented Architecture/Service Oriented Computing (SOA/SOC), the use of web services became more prevalent [16, 17, 18]. However, Tilley et.al. [14] cautioned that despite the promise of web services technology, organizations need to be aware of the costs and the implementation issues involved in establishing web services. Moreover, they emphasize that “there is clearly business value in a standards-based and vendor-neutral solution. However, web services are a means to an end, not an end by themselves”.

3. Research method and design

In order to achieve a deeper understanding of the key factors that influence business value realization from IS/IT investments, it was decided that interpretive case studies [19, 20] would be conducted. The interpretive-qualitative case studies were seen as providing invaluable insights and in-depth understandings of the issues surrounding benefits realization of the web services implementation.

The selection of the companies participating in this research was purely based on convenient sampling. Contacts were made with the managers (business and IS/IT) during business functions and tentative approval to establish further contact was made. The interviews were then arranged after the key informant had been identified (in this particular instance, the IS/IT infrastructure manager of the organisation).

The semi-structured interviews, comprised of a series of open-ended questions developed and issues/themes identified from the literature. Using a series of semi-structured interviews [21] with open-ended questions, the participant was asked to ‘tell the story’ of the web services initiatives from their conception to the implementation and use, as well as the subsequent evaluation and further development.

The interviews were taped and then transcribed. The interview transcripts were returned to the participants for reviewing purposes and to ensure their accuracy and veracity [22]. Content analysis was then used to analyse the transcript.

4. The IS/IT integration in MNCA

MNCA (MNC Australia) is the regional subsidiary of MNC, one of the biggest automotive engineering and manufacturing in the world. MNC has hundreds of subsidiaries, thousands of suppliers and business partners around the world. MNC’s global operations span throughout over 20 different countries and its products are sold in nearly 200 countries. It has been considered as one of the most innovative automaker in the world and known as one of the most integrated manufacturing facilities in the world.

Understandably, our research only covers a fraction of the operation of MNC. Of particular interest to us as researchers in the IS/IT area, is the ‘recent’ IS/IT initiatives taken by MNCA.
4.1. The web services initiative

The web services initiative was first started in 2002, making MNCA one of the early adopters of web services technology. The idea was to provide a better integration of the back-end systems within the company, and in the long run, the business partners’ systems as well. The technology team decided to adopt web services “…mainly because of the openness” (MNCA manager). They were trying to look ahead and avoid any proprietary protocols in order to reduce potential problems in extending the systems to their partners and dealers. The fundamental reasoning behind this was based on the concept that if they adopted and implemented a non-proprietary technology, not only that they will not be ‘locked-in, to a specific vendor, they would also be able to have better control over the developmental direction of the specific web services they were developing.

The problem with proprietary IS/IT was the impediment to integrate the global operations of MNC in the past. The IS/IT silos throughout MNC group had been difficult to integrate and problems were emerging due to the lack of ability to communicate between the different systems.

The realization to integrate the various systems was initiated by the president of MNC. Despite having little knowledge on computer systems, he knew that having multiple systems that were not able to ‘talk’ to each other was not ideal to support the growth of MNC operation. He then invited MNC technology officers from the regional head quarters to discuss this particular issue. One of the outcomes was the idea to use a more ‘open’, non-proprietary, technologies in the attempt to integrate the various in-house systems. MNCA was then ‘volunteered’ to develop a new initiative to integrate its various processes using non-proprietary technologies.

Like in many other major IS/IT initiatives, the MNCA’s technology team started with a pilot application. This so-called ‘pilot application’ itself ended up being quite large at the end. The pilot application was designed to integrate MNCA with the transportation companies³.

“There was a need to integrate with the transport companies, to know where our vehicles were in the supply chain when they got off the assembly plant” (MNCA Manager)

Essentially, the MNCA technology team developed an electronic proof of delivery, and use this to integrate both MNCA and the transport company systems. In effect, when one of the truck finished loading MNCA cars from the assembly plant and/or when the truck offload the cars to the dealership showroom, the truck driver will provide a confirmation to the electronic proof of delivery system. The information from the electronic proof of delivery system would then be used by various departments in MNCA to trigger various processes and activities.

Following the pilot project, the MNCA technology team then developed the web services extension of the initial project to further integrate the dealership system and the MNCA’s marketing and accounts systems. Due to the reusability of the web services modules developed for the initial project, the subsequent development was done faster with reduced developmental cost as noted by the following excerpts:

“Yes, definitely [we saw] project delivery was improved. The speed of delivery is improved. We were able to turn around solutions faster.” “We have done [the modules]… we used those in other projects and turnaround [time off] those projects were a lot quicker. We do not have to reinvent the wheel every time.”

4.2. The Drivers to Success

“Yes, all the projects always have business driver behind it. [We] do not have the budget capacity or head count to do technology for technology sake.” (MNCA Manager).

“We did not go ‘look at these web services, it looked nice, so let’s go and do it’… There was a business needs, they wanted something, we talked, [we discussed] options… [There] has to be a business case, a cost centre, and a budget approved” (MNCA Manager).

The above statements clearly highlight an important aspect of the success at MNCA. There is a clear driver and motivation for the IS/IT

³ MNC uses 3rd party transportation providers to deliver its automotive products (i.e., cars) to the dealership showrooms
initiative. More importantly, there is an inherent process in which a technology-based solution was precipitated by business and its needs. It is also crucial to note that there is a clear example of collaboration, communication, and joint custodianship of the IS/IT-based ‘project’. In this type of environment and organizational culture, the so-called IS/IT-based projects are owned by the business. The budget for the initiatives was allocated from the business unit instead of the IS/IT department’s budget. Hence, the success or failure of specific initiatives will essentially have a direct impact for the business unit(s) sponsoring the initiatives. This creates a sense of ownership and encourages the business to work with its IS/IT counterpart to ensure that the business values expected from each projects are delivered.

The background of the MNCA CIO may also be a factor in building understanding between business-technology people. As part of the MNC global’s organizational culture, after a few years of a senior personnel promotion to executive level, he or she will then be ‘rotated’ to head a different department. The rationale was to provide the executive with an opportunity to learn about a wide range of operations and different aspects of the organization. At the time the research was conducted, the then CIO had a HR background and admittedly had very little knowledge on technology. One might argue that this could create a disadvantage. However, from the overall organizational perspective, this could well be a positive contribution towards greater understanding and communications across different parts of the organization, including the understanding and communication between IS/IT and the business people.

Evidently, there was a clear ‘demarcation’ line between the business personnel and the IS/IT people when it comes to the nuts and bolts of the development of the web services (or any other IS/IT initiatives). This might be regarded as contradictory to the previous paragraphs on collaboration. But, on the contrary, the ‘division of expertise’ where the technologist concentrate on what they do best (i.e., developing and programming the web services modules) and the business people deals with their field of expertise (i.e., running the business, liaising with the dealers and suppliers) could be seen as a factor that contribute to the success of the project. It is important to note that in order for this to work, there needs to be trust between the business and the IS/IT personnel, in which they trust each other’s competencies and that each will deliver and support the other.

“[The IS/IT] generally try to hide the implementation processes from the business. The business will come up with the specification of what they need. I will work with their representative so I can understand the problem. We do not generally go back to the business and say ‘this is going to solve your problem, is that ok?’... we decided what we are going to use. They do not need to know that. They owned the budget and the requirements; we will work with them to fulfill the requirements and work based on the budget.”

The MNCA case clearly shown what Ward et al. [23] refers to as within the expected-positive quadrant of the Benefits Management Matrix, in which there were clear expectations and a proactive measures taken to ensure that the expectations will be met. The maturity of the consultative process in which the web services initiative was based on is part of an ongoing process throughout the life cycle of the initiative.

At the early stage of the web services rolled out, the MNCA technology team with the business representatives conducted reviews and evaluation of the new systems. In general, there were 2 types of evaluations conducted on the system. One is the evaluation on the technology by the IS/IT department personnel, covering a wide range of issues such as developmental issues, implementation issues, technological issues (i.e., compatibility, reusability, portability). The second evaluation was conducted jointly by the business-IS/IT personnel who cover the satisfaction of the users (including both internal staffs and the business partners), costs, and other benefits. One notable outcome of the review and evaluation process was the emphasis on ROI, including the unexpected ROI from the data charge fee paid by the dealers.

Although ROI is not the only metrics used in this particular instance, it was acknowledged that at the end, financial metrics were considered as the most significant measurement/evaluation method at MCNA as indicated by the manager “Yes, it is more ROI based... for project to be considered as a success, it has to show a net benefit and payoff over a certain period...”. The emphasis on ROI and other financial based
metrics seem to be the centre of the evaluation process.

The evaluation and review of the web services initiative played a significant role in the subsequent IS/IT investments at MNCA. Not only that it is able to establish a successful ‘proof of concept’ in using a reasonably new technology and delivered the functionalities that enable further innovation in the business, but it shows that in this case, the IS/IT initiative could also generate additional revenue to the business. Further, the evaluation phase provided MNCA with an opportunity to reflect on what had been done and what potentially could be done to extend the benefits from this particular web services project. Stemmed from the evaluation, the manager noted:

“We are definitely getting a return right now... and the fact that we have been able to reuse those technologies that we built for that project, well, we could use them for many other projects...”

“...because we are able to reuse those technologies, we are now writing more services for the dealers [and other] partners without incurring much additional costs for the infrastructure”

“...of course, since the charge model for the dealers management systems seem to be sustainable, we might be able to applied [the model] to other services as well.”

5. Lessons Learnt

MNCA was certainly able to deliver the benefits promised in its implementation of Web Services. Its success has little to do with the technological factors involved in Web Services at all; instead, MNCA ability to see the business factors from the technology is what contributes greatly to its success. This section outlines the lessons learnt from the case study that lead MNCA to realized the benefits by the end of the day

5.1. Business Driver

Every IT projects in MNCA is driven by a business need. For every moneys spent in IT, there had to be a business case behind it. The proponent of the initiative must be able to show returns by a certain period of time. More importantly, the business case needs to outline the KPIs and the method in which the KPI will be measured.

5.2. Management Support

Getting the right business driver was certainly the first step in getting management support in the web services implementation. MNCA case study shows that projects have more prospects in succeeding whenever they obtain genuine support (instead of mere ‘tokenism’ support) from management. A good track record of the IS/IT in successful delivery of IS/IT initiatives as well as a good relationship between IS/IT and the business side also play a significant role in getting support from the management.

5.3. Business-Technology Synergy

Apparent in the case study is the synergy between business and the ‘technology’ people. There is mutual respect with regards to how the two collaborate and support each other throughout the web services initiatives. There was a constant engagement and discussion at a high level to ensure that requirements were being met and adequate resources were provided. There were clear expectations and a clear indication of how the evaluation should be done. Without proper metric and evaluation methods, Web Services initiative will soon find itself drifting away from its original purpose.

5.4 Key Success Indicators

Benefits realization is a very important emphasis in this study. No project can be titled success, unless they have achieved a certain degree of success in delivering the benefit to the organization. Hence, it is imperative that organization should decide on the measure of success which is most appropriate to them. We would argue that these indicators should not be limited only on financial metrics alone, but it should encompasses a number of other ‘soft factors/metrics’ agreed upon by key stakeholders of the project.

5.5. Organizational Culture

One significant theme emerging from the case study is the inclusion of benefits realization practices in the working culture of the organization. Not once throughout the interview did the managers indicate that they were not
happy with the consultative and (almost) repetitive processes to ensure that the projects would deliver the expected benefits to the organization. To us, this is an indicative that an organization would gain more value out of its IS/IT investment if and when the benefits realization practices are seamlessly woven in the organizational processes and culture.

6. Conclusion

It is apparent that the case of MNCA shows what can be considered as a very successful use of technology to provide benefits to the business at multiple levels. The criteria for success should not only based on the successful completion, delivery, and operationalization of the system (i.e., project success), but also based on the apparent business value and benefits stemming from the use of the systems. As described in the paper, there were a number of factors influential to the success of MNCA’s web services initiatives.

7. References


