ACHIEVING BUSINESS BENEFITS THROUGH USE OF DSDM: A CASE STUDY IN ALLIED IRISH BANK

Philip O' Reilly,
University College Cork,
+ 353 21 4903833
Philip.OReilly@ucc.ie

Conor Galvin,
Allied Irish Bank,
+353 01 6411441
Conor.n.Galvin@aib.ie

ABSTRACT

The current demand to deliver information systems that satisfy business needs has led to a rapid increase in the utilisation of iterative and incremental RAD based development methodologies such as DSDM. In the last five years the financial services industry has placed increased importance on the development of quality business systems that fit predefined business objectives within specified budgets. This paper empirically investigates the experience of a financial services company who utilised the DSDM framework and its accompanying techniques as a supporting toolkit to develop their business systems (critical to its core business operations). Initial analysis indicates that utilisation of the DSDM framework helped achieve many of the anticipated business benefits.

1. INTRODUCTION

The ability of information systems to deliver business benefits has been widely questioned over the last decade with the information systems literature being full of examples where anticipated business benefits were not realised (O'Reilly and Finnegan, 2002). Upon investigating the IS success literature some of the key factors which drive IS success include systems quality, user satisfaction and the ability of the system to make an organisational impact (DeLone and McLean, 1992; Seddon et al, 1999). This paper investigates a business systems development approach which incorporates these drivers and examines whether utilising such an approach helped realise anticipated business benefits.

Development methodologies originated to improve the management and control of the software development process and to standardise the process by specifying activities to be performed and documentation to be produced (Russo et al, 1996). The traditional waterfall life cycle emerged as the method of choice for many organisations (Avison and Fitzgerald, 1995). Numerous problems were noted with the waterfall model including its rigidity (Avison, 1996) and the inability to state requirements in advance (McCracken and Jackson, 1981, 1982). Subsequently, many alternatives to waterfall emerged; based on prototyping, short development cycles and continuous negotiation of requirements, DSDM being one such approach (Norbjerg, 2002).

The Dynamic Systems Development Method (DSDM) a RAD methodology provides a framework to operationalise the RAD approach. A key driver in DSDM is end user involvement whereby the goal is to increase user satisfaction and maximise organisational impact (Page and Kami, 1996). In order for DSDM to be successful and anticipated benefits achieved, 100% commitment from management is critical (DSDM Consortium, 2002). While the perceived benefits of utilising a RAD approach are well documented, a question often asked is "Can replacing the rigours of a structured approach with the iterative prototyping of DSDM, provide a vehicle for quality software development? " (Page and Kami, 1996). Therefore the question must be asked whether or not the DSDM approach helps deliver a quality system with realised and tangible business benefits?

The DSDM consortium purport a number of principles and techniques (Stapleton, 1997; DSDM, 2002) to support the iterative and incremental framework whose aim is to develop quality systems which meet business goals within prespecified budget and time constraints. Some of the core principles include; active user involvement, empowered teams, frequent delivery of products, fitness for business purpose, iterative and incremental development, integrated testing throughout the lifecycle and a collaborative and co-operative approach.

The remainder of this paper will document and provide some initial analysis of a leading financial services company on whether by applying the DSDM approach helped deliver the anticipated business benefits.

2. RESEARCH METHOD

The next step in the research process is to define the research objective which is *"To empirically investigate the usefulness of the techniques inherent in the DSDM approach in delivering quality information systems which realise real business benefits*". Marshall and Rossman (1989) and Galliers (1992) indicate that when the state of knowledge in a field is at an early stage of investigation, a need exists for the research purpose to focus on 'discovery', 'theory building' and 'exploration'. The unit of analysis must also provide for sufficient breath and depth of data to be collected to allow the research objective to be adequately answered. The research objective informs the selection of the level and scope of the unit of analysis, suggesting '*where one goes to get answers, with whom one talks, and what one observes'* (Miles and Huberman, 1984). Galliers (1992) states that for a theory building / theory testing approach, a case study is a valid research method.

3. CASE ENVIRONMENT

Allied Irish Bank (AIB) is Ireland's leading financial services organisation. The objective of the home mortgages workflow project was to replace an existing bespoke workflow solution with a proprietary web based workflow package, to enable the Home Mortgages business unit to rapidly support new commercial developments and opportunities. The core business objective of the project was to deliver a continuous workflow solution, which would control the delivery and routing of work for the following functions:

- New applications processing
- Fulfilment
- Account Maintenance
- Home Mortgage Lending

The workflow solution was provided by an outsourcing company, a system integrator, Keane Ltd. It aimed to deliver key benefits such as increased operational efficiency, increased 'sanction to drawdown', skills transfer to AIB staff and the ability to reuse components of the solution within other departments across the bank. The systems development lifecycle from initiation to implementation lasted nine months.

4. UTILISING THE DSDM FRAMEWORK

Delivering business systems on time with quality and a fitness for business purpose is the core objective of adopting the DSDM framework on IT-enabled business change initiatives with AIB. This section outlines how the home mortgages project adopted the principles and techniques underpinning the DSDM framework and how this developed a solution with a suitability for business purpose which thereafter helped achieve the business benefits that were realised shortly after implementation.

4.1 Active User Involvement – The Collaborative and Co-Operative Approach

In the home mortgages system, there was a high number of stakeholders in the project along with the involvement of an external supplier.To facilitate and enable co-operation among the stakeholders, it was decided that regular facilitated workshops were necessary to ensure all impacted stakeholders worked collaboratively and co-operatively together and that the desired quality business solution was delivered. Regular weekly project status meetings, prototype review sessions, issues and risk management sessions were used to enable active user involvement throughout the development lifecycle.

4.2 Empowered Teams

As time is a crucial element in the DSDM process, it was vital that all decisions be made in an efficient and effective manner whether they be small functionality change decisions or major impact revisions such as changes in scope. To enable this, the project team members empowered and co-located. Co-location involved the core members of the project team being located in the same area which facilitated their access to decision-making players at all times without the need for decisions to be escalated to management in the upper echelons of the bank. A visionary was assigned to the project who was always available when major issues arose such as changes to the project scope, design of the

workflow solution, project team etc. An ambassador user was made accountable for promoting the project within the bank to foster education among users and to promote good will between the project team and users. Teams were only truly empowered through the full commitment of management to the process in order to maximise organisational impact. The objective of these initiatives was to give the project the greatest possibility to succeed thereby realising business benefits.

4.3 Fitness for Business Purpose

The team set-up allowed business users direct access to the teams that were coding the functionality which eliminated costly errors and misinterpretation of requirements. A requirements catalogue was utilised which was central to agreeing functionality in group forums and prototyping sessions, thereby allowing the development team to get the necessary clarification on requirements. Prioritising business requirements is one of the key enablers of delivering business solutions within fixed timeframes. It facilitates the delivery of business benefit within short development lifecycles. In the home mortgages case, the priority of the business requirements was measured using the DSDM MoSCoW rules. This structure was beneficial to all stakeholders. The business unit was content that high priority requirements were met and that the project was delivered on time and within budget.

4.4 Frequent Delivery of Products & Iterative and Incremental Development

In the Home Mortgages project, a key benefit of the prototyping technique was that the development team were reviewing product deliveries within a business context thereby satisfying business requirements and needs. Formal prototype review sessions were utilised benefiting both developers and end users. As part of the functional model iteration the prototype technique worked very well helping to improve user satisfaction. The prototype improved to a sufficient standard to allow demonstrations to occur. This ensured maximum progress of the look and feel of the system design, whilst the technical architect was refining the design of the technical platform on which the system would be built. The prototyping technique supported the iterative characteristics of the development approach with the main benefit being the delivery of the business requirements which were agreed during the prototyping sessions with the end users.

4.5 Testing Integrated Throughout The Lifecycle

During the project the concept of a ‘Model Office’ was used. This was a physical mock up of the businesses operation and included the entire technical environment for a scaled down number of users. This enabled the project to make frequent deliveries that could be validated against business scenarios by users. It was applied to user acceptance testing as well as demonstrations, familiarisations and prototype reviews. Over a period of time, the prototypes evolved into a “live” system.

Prior to live delivery additional testing of the system was necessary to prove correct system function (system test) and that the technical platform could support the user base and workload in production (stress and performance testing). The development team performed system test with the assistance of the AIB IT department in simulating environments. Stress and performance test was devised and carried out by the development team with testing being a combined effort from all areas; development team, wider project team and business users.

5. PRELIMINARY ANALYSIS / FURTHER RESEARCH

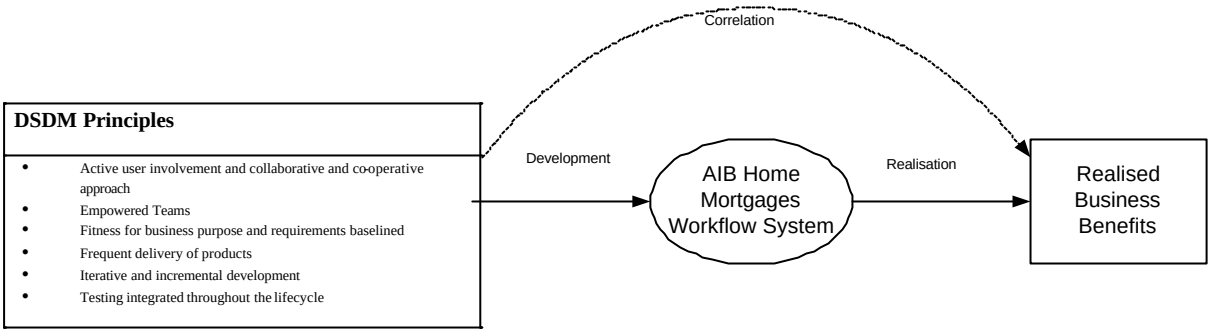

Figure1: Correlation between development approach and business benefits

The need for agile and flexible development approaches for I.S. development has been growing for some time with the increased emphasis organisations worldwide place on speed to market, quality and business benefit. Initial analysis of the project data suggests that by utilising the DSDM principles and techniques, AIB successfully implemented a business system, which supported the business objectives completing all elements of development and implementation in a six-month period. The DSDM framework acted as a business benefits based approach that overcame many of the pitfalls to project success. The focus was on frequent delivery of business benefit into an engaged and involved user community. Figure 1 summarises how the techniques within the DSDM process helped develop a sucessful AIB home mortgages workflow system which realised the business benefits outlined in detail in table 1. The researchers believe that a positive correlation exists between the development process and the realised business benefits.

Realised Business Benefits
• Increased operational efficiency – Target of 25% achieved for selected processes
• Increased the sanction to draw down rate rate by 4% points
• Skills transfer to AIB IT and project team allowing the ongoing support and maintenance of the solution
• Created control of information for supervisors and managers
• Provided enhanced operational information to departmental managers
• Provided repeatable, auditable processing
• Reduced the training associated with processing
• Enable proactive management of customers service and service labels
• Conformed with AIB technical standards
• Delivery of a future proofed architecture

Table 1: Realised business benefits

The realised business benefits has lead to long term commitment from the AIB Design and Build department to continue adopting the approach wherever possible for future projects in the bank. Outlined here is some initial analysis of the role played by DSDM in supporting iterative and

incremental development within AIB helping to realise a large number of business benefits. However, further research is necessary to prove how the DSDM development process directly impacted on the attainment of the aforementioned business benefits. This may help to further explain why certain development methods help realise business benefits and others don't. Yet, initial analysis would appear to highlight the link between the development approach utilised and realised business benefits.

REFERENCES

Avison, D. N and Fitzgerald, G (1995); *Information Systems Development: Methodologies, Techniques and Tools*, 2nd edition, Blackwell

DeLone, William H. and Ephraim R. McLean (1992) "Information Systems Success: The Quest for the Dependent Variable", Information Systems Research, Vol. 3, No. 1, March, pp. 60-95

DSDM Consortium (2002) *Dynamic Systems Development Method*, www.DSDM.org

Fulton, D and Sasse, A (1996) "The impact of the development context on the implementation of rapid application development approaches" in in *Lessons Learned from the use of methodologies*, British Computer Society, N. Jayaratna and B. Fitzgerald (eds)

Galliers, R.D.(1992) *Choosing Information Systems Research Approaches, in Information Systems Research: Issues, Methods and Practical Guidelines*, Galliers, R.D. (Ed.) Alfred Waller Ltd., Henley-on-Thames, 144-162

Marshall, C., and Rossman, B.G.(1989) *Designing Qualitative Research*, Sage Publications, 1989, Newbury Park, California

Martin. J (1991) *Rapid Applications Development*, Prentice-Hall

Norbjerg.J (2002) "Managing incremental development: Combining flexibility and control" in *Proceedings of the 10th European conference on Information Systems, Gdansk, Poland June 6-8th*

O'Reilly, P. and Finnegan, P. (2002) "A model for assessing the performance of an electronic marketplace" in *Proceedings of the 10th European conference on Information Systems, Gdansk, Poland June 6-8th*

Page. V. and Kami S; (1996) "Is DSDM the future of SSADM?" in *Lessons Learned from the use of methodologies*, British Computer Society, N. Jayaratna and B. Fitzgerald (eds)

Russo, N., Hightower, R and Pearson, J. (1996); "The failure of methodologies to meet the needs of current development environments" in *Lessons Learned from the use of methodologies*, British Computer Society, N. Jayaratna and B. Fitzgerald (eds)

Santos, J. (1991); "Participatory Action Research: A view from FAGOR" in *Participatory Action Research*, Whyte W (ed), Sage publishing

Seddon, P.B., D.S. Staples, R. Patnayakuni, R. and M.J. Bowtell. (1999); "Dimensions of Information Systems Success", Communications of the Association of Information Systems, http://cais.isworld.org/articles/2-20/article.htm

Smith, M. (1991); *Software prototyping: Adoption, Practice and Management.* McGraw-Hill

Stapleton, J. (1997) DSDM: Dynamic Systems Development Method, Addison Wesley

Yin, R.K. (1994) *Case Study Research, Design and Methods*, Sage Publications, Newbury Park