

IS/IT Benefits Realisation and Management in Large Australian Organisations

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ABSTRACT

Information systems and technology investments in organisations are substantial and growing. While formal methodologies and techniques for evaluating these investments are used to some extent, relatively less formality is applied to managing and realising their benefits. Part of an ongoing research programme, this study examines a number of aspects of IS/IT benefits realisation in large Australian organisations and reveals issues of identifying and structuring benefits, planning benefits realisation, delivering, evaluating and reviewing these benefits, with some success and some failure. The results show some use of formal methodologies, benefits measurement, formal reviews, and allocation of specific responsibilities, but a lack of uniformity in the formality of the activities. These results, however, are generally consistent with findings in related studies outside Australia.

Keywords: IS/IT investment evaluation; IS/IT benefits realisation; IS/IT management

INTRODUCTION

Information systems/information technology (hereafter referred to as IS/IT) now represents substantial financial investment for many organisations (Willcocks, 1992). Information systems and technology managers have found it increasingly difficult to justify rising IS/IT expenditures (Willcocks, 1994). They are often under immense pressure to find a way to measure the contribution of their organisations' IS/IT investments to business performance, as well as to find reliable ways to ensure that the business benefits from IS/IT investments are actually realised (Singh, 1993). This problem has become more complex as the nature of IS/IT investments and the benefits they can deliver has evolved over time (Willcocks, 1992). Furthermore, the evaluation of these IS/IT investments and the realisation of those benefits is a complex tangle of financial, organisational, social, procedural and technical threads, many of which are currently either avoided or dealt with ineffectively by organisations (Mirtidis and Serafeimidis, 1994), particularly by those with IS/IT responsibilities (Pervan, 1998).

IS/IT BENEFITS REALISATION

While pre-investment appraisal and post-implementation review of IS/IT projects are important for evaluation purposes, they are insufficient in terms of ensuring that the benefits required are realised and delivered to the organisation (Ward and Griffiths, 1996). Assessing the effective delivery of useful benefits from these services to the business is very difficult (Remenyi and Whittaker, 1996). A survey conducted by Wilson (1991) put measuring benefits as one of the most important barriers to setting up and implementing IS strategy. Some of the reasons put forward for the failure to monitor whether the projected benefits of IS/IT were being realised by the organisations are:

- (1) it is too difficult to assess benefits after a project has been implemented (Norris, 1996);
- (2) it is not necessary as the project was implemented according to plan (Norris, 1996);
- (3) it is too costly to undertake the proper post-implementation reviews on benefits (Norris, 1996);
- (4) many organisations tend to give very little attention to the intangible benefits when investment decisions are made (Beaumont, 1998);
- (5) many organisations have poor IS/IT adoption practices (Fink, 1998); and

- (6) it is against many organisations' culture to act as both the watchdog and implementer for benefits delivery.

In addition, a survey by CIE (Norris, 1996) found that vague statement of benefits, leading to an uncertain allocation of responsibility for managing their delivery, as the number one cause for project failure.

As benefits are frequently long term, uncertain and intangible (Sassone, 1988), the future benefits are too wide-ranging to be estimated with any accuracy (Clemons, 1991). Therefore, IS/IT projects should be evaluated in the context of accumulated costs and benefits from related initiatives, not judged on single initiatives (Galliers et al., 1996). According to Ward et al. (1996), in order to determine if the desired benefits have been achieved in practice, it is necessary to measure and evaluate post-project. If no measurable effects can be identified post-project, other than the implementation of the technology itself, then it would be safe to assume that no benefits have actually been realised.

Increasingly, as IS/IT expenditure has risen dramatically and as the use of IS/IT has penetrated to the core of organisations, the search has been directed towards not just improving evaluation techniques and processes, but also towards the management and realisation of benefits (Fitzgerald, 1998). Few organisations have a benefits management approach and much attention is paid to ways of justifying investments (Ward and Griffiths, 1996), with little effort being extended to ensuring that the benefits expected are realised. As a result, there is a massive imbalance between IS/IT investment and benefits derived from that investment (Sutherland, 1994).

Truax (1997) suggests a number of reasons for organisations not getting the benefits they expected from their IS/IT investments:

- Immediate results of an investment are rarely the expected benefits;
- Necessary means for benefits realisation are not identified;
- Benefits do not occur where and when they are planned;
- The “right” benefits are difficult to identify up front;
- Projects are too narrowly defined for effective delivery of benefits; and

- Organisations often have a limited ability to manage change.

Ward and Murray (1997) identified three mindset constraints that seem to operate strongly when business managers approach the issue of managing IS/IT. These can often lead to not getting the expected benefits from IS/IT investment. These are as follows:

- The management of IS/IT is a technical issue;
- The cost of IS/IT should be justified by financial bottom-line; and
- The functionality from IS/IT is a benefit in itself.

According to Lederer and Mirani (1995), an understanding of benefits is very important for several reasons:

- It can give researchers an opportunity to characterise IS/IT projects thematically;
- It can create top management's expectations for the outcomes of IS/IT projects as it offers an opportunity to evaluate the projects, as well as IS/IT management's ability to meet its commitments and thus its credibility;
- It may be able to help predict the achievable IS/IT projects outcomes better and thus realise them more often; and
- It can give some guidance for IS/IT managers in proposing new projects and recommending their priorities.

In order to achieve and maximise the expected benefits from the IS/IT investments, some researchers suggested ways of evaluating and realising the IS/IT benefits. This is often called benefits management. It has been defined as "the process of organising and managing such that potential benefits arising from the use of IS/IT are actually realised" (Ward and Griffiths, 1996). It aims to be a whole life-cycle approach to getting beneficial returns on IS/IT investments (Ward and Murray, 1997). According to Coleman and Jamieson (1994), benefits management plans encourage the business users to focus on exactly how they will make the system pay off and contribute to the business objectives. The ability to achieve benefits from one investment will depend on the organisation's experience and knowledge of what benefits IS/IT can or cannot deliver and how they can be obtained (Ward and Griffiths, 1996). Coleman and Jamieson (1994) conclude: "an

IS/IT project does not finish with the successful delivery of a working system; it continues as long as benefits are being accrued to the business.”

Many researchers advocate financially oriented evaluation techniques such as net present value (NPV) and return on investment (ROI), but these have largely ignored intangible benefits as well as potential risk (Hochstrasser, 1993). King and McAulay (1997) have further stated that, for those who suggest alternative approaches, whether quantitative or qualitative in nature, there remains an implicit assumption that selecting an appropriate evaluation technique will secure a successful choice of projects. Success is achieved by applying a technique that is determined by the context within which the evaluation takes place. The process model school, on the other hand, argues that success follows from adhering to an appropriate procedure (King and McAulay, 1997). A brief description of three major models of IS/IT benefits management now follows.

The Cranfield Process Model of Benefit Management

Without an effective benefits management process, IS/IT benefits may be unrealised, leaving the investing organisation without satisfactory payoff (Brewster, 1994; Jurison, 1996). The process model of benefits management developed by Cranfield research program (Ward and Griffiths, 1996; Ward et al., 1996), can be used as the basis for guidelines on best practice in benefits management. Figure 1 reveals the key elements and relationships in this process model.

Ward and Murray (1997) argue that, by using this process model, it is possible to diagnose why some projects are successful in delivering benefits and others are not. It is also possible to show how the less successful could be addressed with remedial action to obtain benefits that are being lost, and in most cases further benefits could be uncovered.

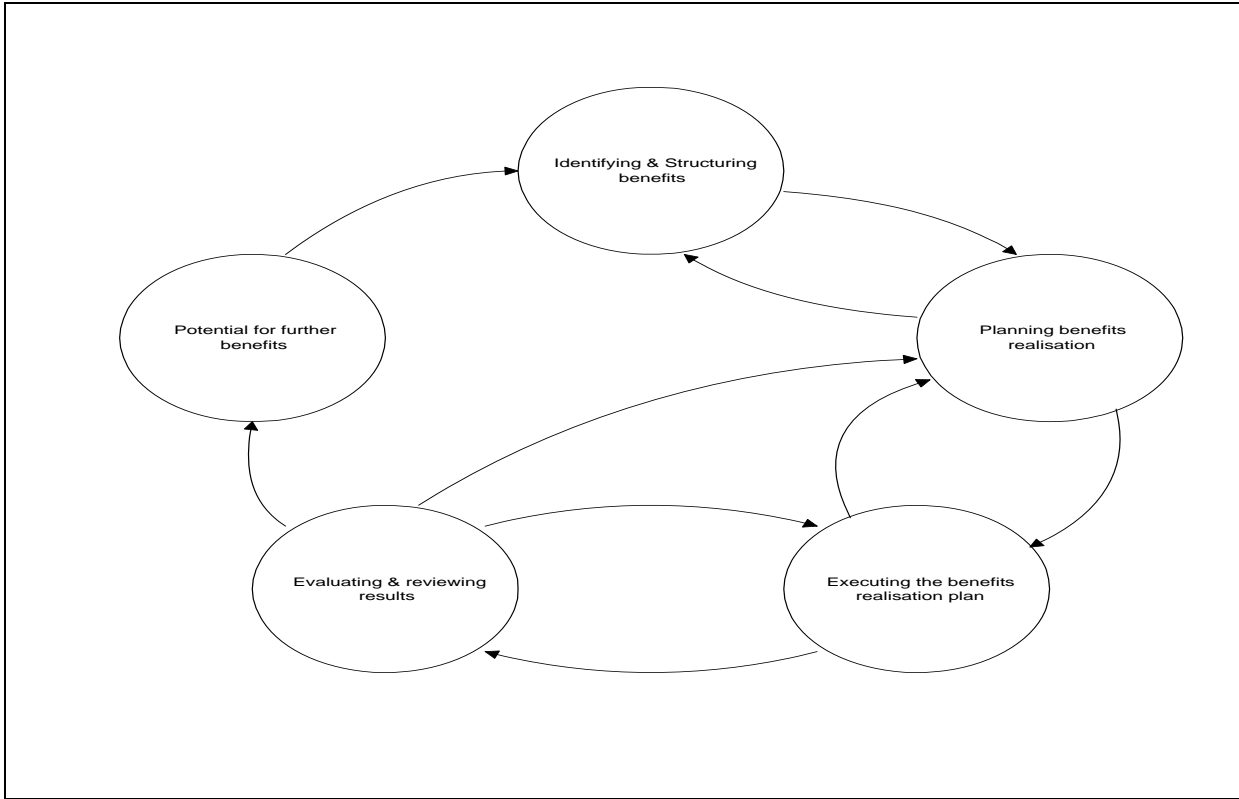


Figure 1: A process model of benefits management
 (Source: Ward and Murray, 1997)

Active Benefit Realisation (ABR) Approach

Remenyi et al. (1997) have advocated that their approach, known as Active Benefit Realisation (ABR), can be utilised to continually assess and manage potential benefits arising from the use of IS/IT. Fundamental to this approach is that the principal stakeholders of the information system are identified at the outset and that they accept and agree their continuous involvement. The ABR approach can be divided into three distinct phases. They are as follows:

1. Setting the course - this involves the development of sets of precise requirements under the headings of a business picture, a financial picture and a project picture. Once the three pictures have been produced, a decision is made and an agreement reached as to whether or not to launch the project.
2. Formative evaluation - this involves assessing the progress of the project. During this phase, all the stakeholders are able to develop views as to how the project is

progressing and to exchange these views in open and constructive discussion. There are three possible outcomes: (a) update the three initial pictures; (b) the project may need to be substantially re-formed and there may not be sufficient funds, time or skills available; and (c) the project may have become for one or more reasons irrelevant to the organisation's business requirements and should result in project termination.

3. Moving forward - this provides a feedback loop that should be available, not only during development, but also throughout the entire life of the project.

DMR's Benefit Realisation Model

According to Truax (1997), senior management needs a new set of worldviews - in the form of richer investment decision-making frameworks and a well rounded focus on benefits. This means the full range of benefits and the actual process of benefits realisation. Such an investment model must clearly map out a complete web of benefits and the logical chain of results: from immediate, predictable outcomes to intermediate and final benefits. That map must display the paths linking an investment to the achievement of identified benefits, as well as provide a framework for supporting the management of the change process. According to DMR (1997), to implement benefits realisation in organisation, new approaches are needed in four key areas:

1. Business cases for investment programs;
2. Methods of investment program management;
3. Benefits realisation; and
4. Measurement systems and accountabilities.

In summary, approaches to benefits realisation such as the DMR, ABR, and Cranfield Process models have been proposed and utilised in practice. However, the reported use of such processes in the literature is fairly low. Since little work in investigating these issues has been reported in Australia, a program of research has been proposed. The first step in this program is this survey of large Australian organisations.

THE SURVEY

A survey was conducted that investigated issues such as IS/IT investment evaluation methodology, benefits management methodology, benefits structures and identification, benefits realization planning, and benefits delivery processes. The aim of the full survey was to investigate many aspects of IS/IT investments evaluation and benefits management processes and practices in large Australian organizations. Specifically, the survey sought to:

- (a) determine how benefits from IS/IT investments are identified, evaluated, structured, delivered and realized by organizations;
- (b) determine what criteria and methodologies are used to evaluate as well as to realize appropriate and adequate benefits by organizations from their IS/IT investments; and
- (c) determine how organizations in Australia attempt to review and improve their current evaluation and benefits realization processes and practices from their IS/IT investments.

The focus of this paper is on the IS/IT benefits management part of that survey. The initial survey, undertaken from June to August 1999, focuses on Australia's largest organizations. A list of chief information officers (CIOs) of the largest 500 organizations by gross revenue was prepared and used in the initial survey. The structure of the questionnaire addresses many aspects of IS/IT benefits management and follows the key elements of the models described above with a mix of Likert scale, nominal scale and open-ended questions. It is partly based on an earlier survey conducted by Ward et al. (1996) in the UK.

SURVEY RESULTS

At the end of the first of two mailouts, a total of 35 completed questionnaires were received, giving a net response rate of 7%. This low response rate did not come as a surprise given that postal survey has often been plagued by response rate problems (Church, 1993). Moreover, the CIOs of the largest 500 Australian companies are often some of the busiest people around and, therefore, simply had little time or interest to

complete and return the questionnaire. Furthermore, several organizations sent back their questionnaires and indicated that their corporate policy did not allow them to participate in this survey. A second mail-out elicited a further 34 responses for a total of 69 questionnaires and a response rate of 13.8%. Most of the information presented below is based on descriptive statistics but some comparisons between groups were made using one-way ANOVA tests and correlation statistics.

Background Information

A wide range of industry sectors (20) was represented by those that responded. Just over three-quarters of total respondents (75.4%) were from the following eight industry sectors: manufacturing (23.2%), financial services (11.6%), mining (11.6%), education (5.8%), construction (5.8%), insurance (5.8%), retailing/distribution (5.8%), and utility (5.8%). The average size of these organizations in terms of net revenue was about A\$921.6m, ranging from A\$50m to A\$8000m. This was made up of 17.5% of A\$50-250m, 38.1% of A\$251-500m, 19% of A\$501-1000m, 15.9% of A\$1001-2000m, and 9.5% of A\$2001-8000m. In terms of the number of employees, responding organizations employed between 30 and 35000 persons, with an average of 2914 employees. This was made up of 24.6% of 30-500 employees, 34.8% of 501-2000 employees, 24.7% of 2001-4000 employees, and 15.9% of 4001-35000 employees. Just over half of the respondents (51.5%) indicated their organizations were multinationals while the remainder were national organizations. Overall, the responding organizations were large in revenue and number of employees, typical of the large corporate sector with large numbers from manufacturing, financial services and mining, and almost evenly divided between multinational and national.

An overwhelming majority of the responding CIOs came from an IS/IT background originally (78.3%). More than half (59.7%) indicated that there was one reporting level between the CIO and the chief executive officer (CEO), while 23.9% of the respondents said that there was a direct link. Overall, the respondents mostly came from an IS/IT background, and have an average of 0.9 reporting levels between the CIO and the CEO.

The CIOs were asked whether their organizational structure was hierarchical or flat, centralized or decentralized, and divisional-functional or cross-functional. Some 78.4% described their organizations as having hierarchical structure while only 21.6% were

described as having flat structure. A majority of the respondent organizations were centralized (60%) against 40% decentralized. In addition, the majority of the respondents (81%) indicated a divisional/functional structure with 19% cross-functional. Overall, the organizations were mostly hierarchical and centralized with a divisional/functional structure.

In the last year, an average of 16.3 IS/IT projects under A\$1 million were implemented by these organizations, 2.4 projects in the A\$1-10 million range, and 1.2 projects over A\$10 million. The average number of projects that the respondents' organizations were planning to implement in the next 12 months was: 16.6 under A\$1 million, 3.1 in the A\$1-10 million range, and 0.7 over A\$10 million. Overall, the figures for the number of projects that were and would be implemented for the past and next 12 months were very similar and are consistent with the findings in Ward et al. (1996).

IT outsourcing has been carried out by many organizations. A number of reasons are often presented, but reducing the cost of future IT capital investment is usually the first one quoted (Willcocks et al., 1996). Most respondents (75.8%) of this survey indicated that they had outsourced at least some part of the organization's IT functions. On average, the proportions of different IS/IT functions outsourced was 49.1% of systems development, 39.4% of telecommunication/networking, 27.4% of user support, 21.4% of operation, 18.2% of project management, and 3.2% of IS/IT planning. Hierarchically structured organizations outsourced significantly less (at the 5% level) of their IT operations (12.7% vs 57.5%), project management (11.6% vs 43.3%) and systems development (45.5% vs 76.7%) than flat organizations, indicating that flatter organizations have less need to directly control a great deal of their IS/IT activity. All outsourced activities showed a negative correlation between the percentage of outsourcing and organizational size (in revenue and number of employees), perhaps indicating that larger organizations already obtain substantial economies of scale (and so cost savings) because of their size and so feel less pressure to outsource (although it could be argued that outsourcing itself makes an organization smaller, at least in number of employees!).

Identifying and Structuring Benefits

The IS/IT managers were asked to provide their views of what benefits senior managers perceived to be provided by IS/IT. The most frequently cited benefits were competitive

advantage, process efficiency and satisfying information needs. Cost savings was perceived to be a further major benefit, with improved systems applications, productivity and business needs, also ranking highly. These results are largely consistent with findings from Ward et al. (1996) which have listed cost savings, improved management information, and process efficiency as some of their major current perceived IS/IT benefits.

The most popular reason for justifying IT investment focused on the issue of cost reduction in many studies (Hinton and Kaye, 1996). It was also seen as the most important driver in this study, followed by competitive advantage. Process efficiency and improved service quality were also seen as the major drivers. Not surprisingly, the most important driver, cost and budgets, was also one of the three most serious issues currently concerning the IS/IT managers, indicating cost and budgets was the main driver for IS/IT investments in order to reduce costs. On the other hand, another important driver, competitive advantage, was also one of the most important of the perceived benefits by senior managers, pointing to the attempt by the organisations to reduce costs while gaining competitive advantage through the deployment of IS/IT projects. Overall, competitive advantage and improved process efficiency were both seen as being the major current benefits, as well as the major drivers for IS/IT investments. This is largely consistent with the findings by Ward et al. (1996) which has also listed improved process efficiency as being a major current benefit as well as a major driver of IS/IT investments.

Cost savings was agreed as the most important benefit to consider when planning IS/IT projects by the respondents. Service quality and revenue and margin were also important benefits to consider. Competitive advantage and process efficiency were seen by the respondents to be the further benefits to consider before planning IS/IT projects. This indicates that the organizations were still under a lot of pressure to reduce IS/IT costs while attempting to address the problems of benefits realization.

Most respondents showed a high level of confidence that IS/IT was actually delivering these benefits to their organizations, with 23.9% indicating a very high level of confidence while no respondent indicated no confidence at all. The average confidence level was 3.9 (on a five-point scale ranging from “not at all” to “very”). Some of the most quoted reasons for this high level of confidence were feedback from users and reviews within the organization, as well as through some sort of measured results. Further

analysis revealed a significant negative correlation between confidence level and organizational size, perhaps suggesting the difficulties that larger organizations face in deriving these benefits (leading to less confidence by the CIO in their delivery). Further questioning revealed a number of issues that might undermine confidence. These included the selection of wrong projects, lack of formal approaches, and inability to achieve the intended cost savings. In many cases the success criteria of project delivery was determined through reviews, meetings or user feedback. In other cases project delivery “on time, working, to budget” was quoted, rather than measured benefits as a result of changes within the business. This is consistent with the findings from Ward et al. (1996).

An examination of those organizations that did use a formal IS/IT investment appraisal process revealed a quite significant level of usage, averaging 3.73 (on a scale from 1 “not at all” to 5 “extensively”). Level of usage was significantly correlated with organizational size (in terms of net revenue), perhaps indicating larger organizations (with more IS/IT investment) found a greater incentive to use formal IS/IT investment appraisal processes than smaller organizations. Further, most of these organizations considered their use of these processes successful, averaging 3.42 (on the same 1-5 scale) and 86% rating the success 3 or higher. Level of usage and success were very significantly correlated (0.824), indicating greater success seems to come with greater usage of these processes.

While most organisations used formal methodologies for other activities, only 32.8% used a formal IS/IT benefits management methodology. Further, only 22.7% agreed that it was widely used in their organisations and only 38.1% felt that it was effective in ensuring successful information systems. Of those who had an IS/IT benefits management methodology, 81.8% also practiced a formal IS/IT investment appraisal process. Only 60% of those who had an IS/IT benefits management methodology had a benefits delivery plan generated as part of it.

Intangible benefits are often critical to an organisation’s operation and efficiency (Norris, 1996). However, they are usually omitted from the various evaluation studies, on the basis that they cannot be quantified or justified by traditional financial evaluation techniques (Apostolopoulos and Pramataris, 1997). Many respondents of this survey (84.7%) indicated that they had included intangible benefits in their IS/IT project appraisal process. However, of those who did consider intangible benefits, only 32.1%

“often or always” took steps to review these benefits at a later stage. Similarly, only 31.8% of the respondents often or always regarded intangible benefits as a major success criterion. These results on project appraisal techniques and their appropriateness confirm the findings of previous researchers in this area, such as Ballantine et al. (1994), and Farbey et al. (1992).

Further analysis revealed a significant negative correlation between the inclusion of intangible benefits in the IS/IT project appraisal process and organisational size in terms of total employees, perhaps suggesting the difficulties that larger organisations face in including these intangible benefits (leading to exclusion of intangible benefits in their appraisal processes).

According to Mirani and Lederer (1993), the alignment with stated organisational objectives has a key bearing on how investment is organised and conducted, and what priorities are assigned to different IS/IT investment proposals. In this survey, a great majority of the respondents (87.7%) had a process ensuring that IS/IT projects were linked to business objectives. Of those who had this process, committee processes, business planning processes or business alignment activities were most often used by respondents to help ensure that IS/IT projects were linked to business objectives.

More than three-quarters of the respondents (79.7%) stated that IT management was “often or always” responsible for preparing and submitting the justification for approval. However, those organisations which stated that IT management was “rarely” responsible for preparing and submitting the justification for approval were more likely to outsource their project management than those who stated “often or always” (50% vs 25.7%). On the other hand, only half of the respondents (50%) believed that business management was “often or always” responsible for preparing and submitting the justification for approval. This indicates that IT management, instead of business management, was usually responsible for preparing and submitting the justification for approval.

Half of the respondents (50%) believed that their current project justification process failed to identify all available benefits for a project. However, more than half of the respondents (67.2%) believed that their current process was able to adequately quantify the relevant benefits. Interestingly, in 26.2% of cases the respondents openly admitted

that their current process actually overstated the benefits in order to get approval. This seemed to imply that while benefits claimed were likely to be quantified and realised in practice, the process itself placed more significant emphasis on getting project approval than on delivering any proposed benefits.

Of those respondents that felt benefits were overstated, 75% conducted post-implementation reviews, and 50% often or always targeted benefits delivery as part of the post-implementation review process. In contrast, of those that did not feel benefits were overstated to get approval, 77.1% conducted post-implementation reviews and 84.6% often or always targeted benefits delivery as part of the post-implementation review process. Those who did “overstate” were almost equally likely to conduct post-implementation reviews but a lot less likely to target benefits delivery as part of the of the post-implementation review process, perhaps avoiding embarrassment. This may also be due to the fact that those who carried out post-implementation reviews systematically to review benefits could, from experience, determine that benefits were generally overstated during the approval process. Therefore, they would be less likely to target benefits delivery as part of the post-implementation review process. Another possible explanation is that for many organisations the primary objective of a post-implementation review is not project improvement but to formally close out the IS/IT project (Kumar, 1990). According to Ward et al. (1996), whatever the reasons for overstating benefits, from a business user perspective the practice is likely to lead ultimately to a lack of confidence in the ability of IT to deliver what is promised.

Just over half of the respondents (51.5%) believed that, in general, the achievable benefits could often or always change during implementation so that new benefits were identified. Of those who believed that new benefits could often or always be identified, most were from hierarchical (79.3% vs 20.7% from flat), centralised (60.7% vs 39.3% from decentralised), and divisional/functional (78.6% vs 24.1% from cross-functional) structured organisations. Moreover, most of these respondents (82.4%) came from an IS/IT background.

On the other hand, only 21.5% of the respondents believed that the achievable benefits could often or always change so that benefits claimed became unachievable. Of those who believed that benefits claimed before could often or always be unachievable, most were from hierarchical (81.8% vs 18.2% from flat), decentralised (60% vs 40% from

centralised), and divisional/functional (72.7% vs 27.3% from cross-functional) structured organisations.

A survey in South Africa conducted by Sutherland (1994) showed that 62% of the CIOs use pilot studies to evaluate the benefits of an IS/IT investment. Some 86% of the UK organisations in a survey carried out by Willcocks and Lester (1993) included pilot studies among their methods. In this Australian survey by comparison, 80.6% of the respondents conducted pilot studies when implementing IS/IT. Of these, 70.6% stated that one of the objectives of these studies was often or always the evaluation of technology. Having an objective of understanding the benefits available was less popular (53%), as was demonstrating how benefits might be realised (52%). Although many respondents saw evaluating technology as one of the objectives of their pilot studies, an overall implication was that the purpose in carrying out pilot studies when implementing IS/IT was not always clear, and in the majority of cases the primary purpose did not appear to be to obtain a better understanding of potential benefits or how to realise them. The results are consistent with findings from Ward et al. (1996) who claim a better understanding of potential benefits and realisation of benefits is often not the primary purpose of a pilot study.

Planning Benefits Realisation and Delivering the Benefits

In 80.6% of cases the organisation appointed a business project manager. Of those who had appointed a business project manager, 78.6% were from hierarchically structured organisations whereas 21.4% were from flat structured organisations. In addition, this survey also indicated that most divisional/functional organisations (80.4% vs 19.6% from cross-functional) appointed a business project manager, perhaps indicating that hierarchical and divisional/functional structured organisations had more need to appoint a business project manager to manage their IS/IT investments perhaps because the use of these systems spanned many divisions and functions.

The responses indicated that the roles for a business project manager were most often concerned with project management, coordinate resources and control, rather than actively managing a business project in order to deliver actual business benefits. Several responses also stated that ensuring business ownership, business delivery, and

requirements determination were other roles that a business project manager was expected to carry out.

Nearly half of the survey respondents (47.7 %) indicated that specific responsibilities for realising the business benefits claimed in the justification were not allocated to managers. Of those who allocated responsibility to managers for realising benefits, 81.6% of the responding IS/IT managers were from an IS/IT background against 18.4% from non-IS/IT background, indicating that IS/IT background for a IS/IT manager had a great influence on the organisations allocating benefits realisation activities for the project justification phase. In terms of organisational structure, those who allocated responsibility were mainly from hierarchical (76.9% vs 23.1 from flat), centralised (66.7% vs 33.3% from decentralised), and divisional/functional (89.7% vs 10.3% from cross-functional) structured organisations. Moreover, these organisations were also more likely than not to outsource their IT functions (73.3% vs 26.7%), perhaps emphasizing the supplier's responsibility for delivering the benefits.

Furthermore, preparation of budget costs was the most mentioned action that the responsible manager was expected to take. Benefits measurement and reporting were also mentioned by other respondents. In terms of ensuring that IS/IT projects would deliver benefits to all relevant users, users involvement, and meetings and committee processes were the most often used means by the IS/IT managers to accomplish this important task.

On the other hand, the allocation of specific responsibility to individual managers for realising business benefits claimed in the project justification occurred in 52.3% of cases. Responses to further questions identified that line/department managers and senior management were primarily responsible for ensuring that the benefits were delivered. Thus while there appeared to be a clear understanding of who was responsible, in most cases there is no specific responsibility for taking the necessary action. Only 43% of the respondents claimed that their organisation prepared a benefits delivery plan. The results are consistent with the findings from Ward et al. (1996). Without such a plan, it is difficult to envisage how an organisation might effectively realise business benefits.

Of those who had prepared a benefits delivery plan, 89.3% indicated that the plan was often or always prepared before the approval stage. However, this was significantly and negatively correlated with organisational size in terms of both total employees and net

revenue, perhaps indicating that it was more difficult for larger organisations to prepare the plan before the approval phase. In addition, most of the organisations which had prepared the plan were mainly from hierarchical (80% vs 20% from flat), centralised (61.1% vs 38.9% from decentralised), and divisional/functional (78.3% vs 21.7% from cross-functional) organisations. Furthermore, these organisations were also more likely than not to outsource their IT functions (85.7% vs 14.3%), perhaps indicating an even greater need to plan when outsourcing IS/IT.

The realisation of business benefits usually requires changes to business processes or practices in order to achieve maximum effect (Ward et al., 1996). Such changes associated with an IS/IT project were stated as often or always being planned after system implementation or not at all in 10.6% (process changes) and 25.9% (organisational changes) of cases. Given that the central concept of this survey is that benefits are derived through business changes, one can conclude that in these cases benefits are unlikely to be realised in practice. Some 31.8% indicated that they often or always planned for process changes during implementation, making them difficult to realise in practice. Furthermore, the business project manager was the most likely person to be responsible for planning both the process and organisational changes.

Evaluating and Reviewing Results

Most of the respondents (62.7%) held formal reviews of activities associated with delivering benefits during the implementation process. Furthermore, as a result of monitoring benefit-realising activities, 79.6% of the respondents made changes to either the system design or the implementation approach. Of those respondents who had made changes after monitoring benefit-realising activities, 9.7% did not hold any formal reviews of activities associated with delivering benefits.

In few cases was there an explicit statement that an IS/IT project was considered to be successful if either the proposed benefits were delivered or objectives were met. Many respondents indicated that they would make the conclusion through some sort of reviews, post-implementation reviews, meetings, or user feedback. In many cases the replies were the traditional project management success criteria of “working, on time, to budget.” However, neither reviews and user feedback nor delivered functionality was any guarantee of benefits delivery. The results are consistent with findings from Ward et al. (1996).

A benefits management approach implies that the measures of success should be developed pre-project, so that these measures can be used for post-project review (Ward et al., 1996). It must also be conducted to ensure that the whole process is still appropriate to meet the business needs and that benefits have been obtained (Sohal and Ng, 1998). However, only 45% of the respondents indicated that measures of success were often or always defined before project approval, and some 44.5% of the respondents stated that measures of success were often or always defined after implementation or not at all. While this is initially surprising, the result is consistent with the findings from Ward et al. (1996) and can be understood in the context of the following findings on post-implementation reviews. That is, in terms of measuring the success before and after implementation stages, they were significantly correlated with organisational size (in terms of total employees), perhaps indicating that larger organisations were under more pressure to define the measures of success before and after implementation stages.

Post-implementation reviews can often provide useful feedback on the value being achieved by expenditure on IS/IT projects (Norris, 1996). Although some research indicates that post-implementation reviews are often not, carried out by organisations (Sutherland, 1994), 77.3% of the respondents for this survey indicated that these reviews were formally conducted. The fact that 22.7% of the respondents did not conduct any post-implementation reviews was disturbing but is not inconsistent with findings from Willcocks and Lester (1993) in which 20% of their responding organisations also do not evaluate at the post-implementation stage. They found the most likely reason for not making these reviews related to lack of tools to make such rigorous calculations.

Of those who had conducted the post-implementation reviews, technical conformance often or always featured in 43.8% of cases, and project management effectiveness in 53.1% of cases. In 76% of cases, benefits delivery was often or always an objective of these reviews, which might be reassuring if there were stronger evidence that methods and techniques were being used to make this objective realisable. Thus, taking the sample as a whole, only 55.1% of the respondents often or always assessed benefits delivery as part of their post-implementation review process. In terms of those who always assessed benefits delivery, this figure fell to just 26.1%. However, this result is not inconsistent with a survey carried out by Sohal and Ng (1998) where 59% of the respondents did not determine whether expected benefits were being achieved during post-implementation

reviews. The implication of these findings is that the objectives of post-implementation reviews are by no means clear, and that the objective in many cases is not the review of actual benefits delivery. A possible explanation is provided by Kumar (1990), who has found that in the majority of cases the primary objective of a post-implementation review is not project improvement but to formally close out the IS/IT project.

Internal reviews and formal meetings were the most common ways to conduct a formal post-implementation review. Some 29.8% of the respondents indicated that the post-implementation reviews were usually held within 3 months of implementing their projects, and 23.4% of the respondents held them within 6 months. The IS/IT manager was normally the most likely person to be involved in these reviews. Overall, most organisations had conducted formal post-implementation reviews and IS/IT managers were the most likely persons to conduct these reviews, usually within 3 or 6 months, and mostly with benefits delivery as the objective of these reviews.

Most respondents (86.7%) indicated that they had fed the results back to whoever approved the project after some form of benefit evaluation was conducted. Just over half of the respondents (52.3%) had a formal process to ensure that the lessons learned from successful or unsuccessful implementations were transferred to future projects. Some 47.7% of the respondents did not have a formal process to learn from their past mistakes and this is consistent with findings from Willcocks and Lester (1993) in which 44% of their respondents admit not to have learned from their mistakes. It is unclear whether those that did not learn from past implementations could ever improve their implementation processes. This is explained by Kumar (1990) who concludes that current practices may not provide the more important long-term feedback improvement benefits of the evaluation process.

Potential for Further Benefits

The majority of the respondents (83.1%) did not believe that it was possible to anticipate all potential benefits at the project approval stage. However, taking the sample as a whole only 18.2% of the respondents claimed to have a process for taking advantage of this fact in order to identify further benefits after implementation, and took action to realise these further benefits. The implication is that there are often more benefits to be gained after implementation, but current practices mitigate against exploring these potential further

benefits. This has been confirmed in findings from Ward et al. (1996). Furthermore, the most likely person to take any action after implementation to realise these further benefits was either an IS/IT manager or a business project manager.

Most respondents felt that they thought there was significant scope for improvement in their current approach to managing IS/IT benefits. The average significant scope of improvement (out of a five-point scale ranging from 1 “no improvement needed” to 5 “scope for significant improvement”) was 3.7 and the median was 4.0. However, there appeared to be a potential paradox between the current confidence (average = 3.9, median = 4.0) that IS/IT was delivering benefits to the organisation and the view that there was significant scope for improvement (average = 3.7, median = 4.0) in how benefits were being realised. This may be explained by the nature of the benefits that respondents perceived were actually delivered, and a view that much greater potential existed to deliver other types of benefits, or that only a proportion of the benefits that were readily realisable from current investments were actually delivered and the more could be delivered with a more effective process.

CONCLUSIONS

As part of an ongoing research programme on IS/IT investment evaluation and benefits management, this paper reports on a survey of benefits realisation in Australia’s largest organisations. The generalisability of the results, therefore, is limited to large organisations. A moderate response rate also limits the results but the external validity of the study is enhanced by the fact that they are consistent with similar studies outside Australia.

Perceived benefits from IS/IT investments include cost savings, process efficiency, competitive advantage and satisfying information needs. Most organisations linked these benefits to business objectives and had a relatively high confidence in delivering these benefits, even though they felt the benefits were often overstated at project approval stage. Further, most included intangible benefits in their project appraisal processes, but often failed to review them at a later stage.

Although most seemed to have an existing process for IS/IT evaluation and benefits management, only about one-third of organisations claimed to have a formal benefits realisation methodology. Most had a benefits delivery plan and a specific business project

manager to manage their process, while some also directed responsibility for realising benefits to relevant line managers. Most had formal reviews during implementation and revised systems design as a result. Post-implementation reviews were generally also done (in similar proportions to studies in the UK) and were used to provide feedback to the project client. These reviews considered such aspects of the project as technical conformance and project management effectiveness, while benefits delivery was usually considered but often not explicitly measured. Measuring success in terms of benefits was often unclear. On the other hand, at approval stage benefits were usually anticipated, but few were then examined at post-implementation.

There is more to be learned in this area, both by researchers and practitioners. Further work is planned in terms of case studies (currently in progress), examining differences in process between IT outsourcing and insourcing situations, and studying government processes. There is clearly scope for improvement, as agreed by almost all survey respondents, and, through more formal methodologies that explicitly measure benefits realised, progress can be made.

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