December 2004

IS Decisions: Identifying Information Sources, Considerations and Justifications

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Recommended Citation
http://aisel.aisnet.org/acis2004/70
Abstract

Many organisations are faced with complex decisions relating to the adoption and implementation of IS. These decisions are affected by the available information and other environmental and organisational influences. Evidence suggests that decision makers do not always use rational approaches to their decision making, yet anecdotal evidence indicates that very rational reasons appear in IS decision justifications. This paper will present a case study that examines the relationships between decision process, the factors that affect an IS decision and the factors that appear in the justification. The case study will focus on an ERP Data Warehouse implementation in a privately owned power utility.

Keywords: IS Decision Making, Justifications

INTRODUCTION

This paper sets out to describe the way in which decisions relating to the implementation of an ERP Data Warehouse occurred while contrasting the process and considerations with conventional IS decision making literature. Much of the literature suggests that IS decisions are based on formalised evaluations (Ballantine & Stray 1999; Doherty & King 2001; Irani & Love 2001; Lin & Pervan 2001; Verville & Halingten 2002) using a rational approach. However, as will be shown by the case study in this paper, apparently rational, formal decision making is not always as it appears to be. We first describe “formal” evaluation practices that are used in IS decision justifications. We then overview decision making theory in order to contrast decisions and the concept of a formal evaluations. The elements of decision making are discussed and the importance of contextual information and influence is highlighted. A case study is then described and the paper concludes with a discussion of the findings in relation to the theory.

EVALUATION

IS evaluation is one of the most controversial and debated areas in the IS literature (Lin & Pervan 2001). It seems from the literature that IS evaluation practices are either not formally performed (Ballantine & Stray 1999; Khalifa et al. 2001; Lin & Pervan 2001) or are narrow in focus (Irani & Love 2001). Ballantine and Stray’s survey (1999) indicated that over 51% of organisations did not use defined evaluation procedures. One of the reasons stated was that there is a perceived difficulty in interpreting the results of formal evaluations. A lack of organisational resources has been cited as another reason for not performing formal IS evaluations (Khalifa et al. 2001).

Traditional IS evaluation practices focus heavily on financial costs and returns (Ballantine & Stray 1999; Doherty & King 2001; Irani & Love 2001; Lin & Pervan 2001; Verville & Halingten 2002) and perceived benefits (Drinjak et al. 2001) yet ignore or marginalise other organisational and human issues (Doherty & King 2001; Khalifa et al. 2001). Formal financial evaluation practices include Cost Benefit Analysis (CBA), Return on Investment (ROI), Payback Period (PB) and Net Present Value (NPV). Although these methods provide tangible information that can guide the selection process, they ignore human and organisational issues. In an IS investment this can lead to project failure (OASIG 1996): consequently, Irani and Love (2001) state that a number of practitioners are calling for a moratorium on their use. Daft and Lengel (1990) note that rational models or evaluation practices that rely on quantitative analysis and statistics are more often used for operational and technical decisions at lower levels of management. Quantitative analysis and statistics may be appropriate
for decisions taken at lower levels of management, yet the same methods are frequently used by senior management to justify more complex decisions.

Bannister and Remenyi (1999) divide evaluation approaches into three broad categories: fundamental, composite and meta. Fundamental techniques rely on metrics and distil every decision option down to a single metric or score. Composite measures combine several fundamental measures to gain an overall picture of value/investment return. Meta measurement involves a selection of the best set of fundamental measures for a given context. Evaluations using meta measurements will use different metrics or factors depending on the context or type of evaluation. Furthermore, Bannister and Remenyi (1999) describe the actual decision process as occurring in one of two ways: positivist or hermeneutic. Positivist decision technique empowers the evaluation methodology to make the decision. Hermeneutic decision techniques allow for the interpretation of factors in a non-structured way. This seems to more closely align with the way in which IS decisions are made.

There is also evidence to suggest that evaluation practices are geared to justify choices (Drinjak et al. 2001) and that decision makers often have preferred or preconceived outcomes (O'Reilly 1990). Many organisations exhibit actions which attempt to create the illusion of rationality (Straw 1990) and the evaluation or justification process can be one of these. Why is there the need to create the illusion of rationality? It is likely that the illusion of rationality is created to avoid exposing the possibly irrational, undisclosed factors that produced the decision outcome.

DECISION MAKING

Decision making consists of the three interrelated tasks of information acquisition, evaluation and feedback or learning (Einhorn & Hogarth 1981). In a study by Simons and Thompson (1998), managers reported that a number of environmental, organisational, situational, individual and content-base factors impacted on their decision making. Of these factors, the greatest variation identified related to organisational and environmental factors. The use of simplified cognitive processing and heuristics is a recognised facet in complex decision making (O'Reilly 1990). However, while organisational decisions are intentionally rational (Straw 1990), decisions relating to IS are rarely logical (Bannister & Remenyi 1999) or rational (Bannister & Remenyi 1999; Chung & McLarney 1999; Heracleous 1994; Standing 1998). It appears that for large, complex and ill-structured problems, decisions are largely based on instinct or intuition (Bannister & Remenyi 1999). Burke and Miller’s (1999) study of intuitive decision making in professionals found that fifty-six percent of respondents made intuitive decisions based on experience while forty percent based their intuitive decisions based on feelings or emotions when presented with information. This raises the question: what information was informing these intuitive decisions? While two thirds of the respondents felt that intuition led to better decisions, one interviewee noted that ‘if your recollection and experiences are wrong then intuition is bad’ (Burke & Miller 1999 p. 94). Intuitive decision making lacks transparency and acknowledgement of uncertainty in decision-making and may create a false sense of security, potentially leading organisations down the path to IS project failure.

Information is evaluated within a given context or environment. Organisational factors will form most of the context, although other external factors like economic climate, external politics and legislation will also have some role. Some organisational factors are already been recognised as affecting the decision making process (see for example Schroder and Sohal (1999), Sarkis and Sundarraj (2000), O’Reilly (1990) and Hirschheim and Smithson (1987)), for example, the size and type of the organisation. There are relationships between organisational factors and the information used to make decisions.

The factors identified as part of the justification for a decision are not all of the factors considered. Some of these factors, whether tangible or intangible information or the organisational factors that provide the context, are not acknowledged in the decision making process. For all intents and purposes, these factors are undisclosed to all but those making the decisions. Furthermore, undisclosed factors often affect decision outcomes (Heracleous & Barrett 2001). It is more likely that undisclosed factors will be intangible and will be related to organisational factors. Thus, undisclosed factors can be defined as the information or contextual influences that are not explicitly identified in the decision making process yet ultimately have an effect on the final decision.

DECISION FACTORS

Whether explicitly acknowledged or undisclosed, factors that affect decision-making can be grouped into two categories: Information and Context.
Information

Information can be defined as signs of reference that may take the form of knowledge, wisdom or raw data (Riley 2003) that form a ‘body of facts that are in a format suitable for decision making’ (Zikmund 2003 p. 738). Typically there are many factors to consider in an evaluation: these have been often categorised into one or more groups including tangible, intangible, financial/quantitative and qualitative (Sarkis & Sundarraj 2000). Factors can be broadly divided into ‘hard’ measurable metrics and ‘soft’ intangibles. Examples of ‘hard’ factors that will affect decision-making include time (Simons & Thompson 1998), financial returns and cost (Ballantine & Stray 1999; Drinjak et al. 2001; Khalifa et al. 2001; Simons & Thompson 1998). Soft factors include politics (Chung & McLean 1999; Standing 1998), heuristics and biases (McCray et al. 2002), problem complexity (Simons & Thompson 1998) and existing/escalating commitment (McCray et al. 2002; Nulden 1996). It is the opinion of some authors (for example Buss (1987), Mintzberg (1972)) that intangible benefits can be more important than the tangible, but Couger (1987) notes that the inability to quantify benefits may be a reason why systems are not implemented. This would explain the need for some senior managers to not disclose intangible factors and use other tangible factors as proxies in the justification process.

Buss (1987) lists four groups of factors that affect the way in which IS projects are prioritised. These are financial benefits, business objectives, intangible benefits and technical importance. Of these factors, undue weight is often given to financial, tangible benefits (Buss 1987). The OASIG report (1996) stated that the most common factors that motivated implementation of new technology were cost reduction, increased output, improved quality and reliability, and innovation in products and processes with cost reduction being the most common. This is somewhat ironic given the high rate of budget over-run and project abandonment in IS projects.

Contextual factors

There are many contextual factors that affect the way in which an organisation approaches the IS decision making process. Context is also known to affect the way in which the knowledge used to make decisions is gained (Maqsood et al. 2004). However, these contextual factors do not necessarily have a direct influence on the outcomes of decisions made by senior management. Core business or organisational focus (organisational factors) will determine which pieces of information are acknowledged in an evaluation or justification process (O'Reilly 1990). Child (1987) suggested a number of organisational factors that impede innovation including organisational inertia, labour skills, organisational culture, social actors and their influences and social or organisational norms. Organisational design and the ability of the organisation to change have a direct influence on how easily an organisation can adopt new technology (Ozsomer et al. 1997; Sarkis & Sundarraj 2000). All of these organisational factors form part of the context within which IS decisions are made.

METHODOLOGY

The research methodology used was a single exploratory case study based on data from six interviews. Interviews focused on the implementation of an ERP Data Warehouse. The interviews were conducted face-to-face following a semi-structured interview script consisting of 36 questions. Data was gathered on the history of the organisation, the interviewees’ knowledge of IS, the particular project under review, the decision making process, its justifications, the factors that affected the decision making and the outcomes of the project. Qualitative data from the interview scripts was extracted and has been analysed and presented using a content analysis approach. The organisation studied is a commercial utility involved in electricity generation. It was formed as a result of the commercialisation and deregulation of the electricity industry and as part of the separation of electricity transmission and generation services. The organisation employs approximately 300 full time employees; however it maintains a flexible employment pool of another 200 contract staff. The organisation is distributed at a number of sites throughout Australia.

FINDINGS

To understand the context in which decision making occurs, it is useful to understand the history of the organisation. IS has evolved from “ad hoc” projects with little project management into structured, project managed undertakings. The major change occurred three years ago with a structural change and the appointment of the IS Operations/Infrastructure and Business Systems Manager. The IS Manager noted that:

At that time, putting in IT projects were a real challenge for us because we were busy putting out fires and it was difficult to focus on making step changes and make a real significant impact in infrastructure when we were continually trying to solve faults and problems in the current structure… that’s when I decided we need to complete restructure the group and [two managers] came on board and a projects group was created to focus people specifically on nothing more than the changes that were required
This is perceived as a positive change as IS staff have been able to move from “fire fighting” to proactive user engagement and value adding to the business, as noted by the IS Manager: ‘Since that time we’ve made substantial inroads into the support systems and [the] infrastructure that exists … as a result, the fires started to disappear as well’.

This change has been both organisational and political as the maintenance and support operations have been separated from the projects and development arm. Much of the support is performed by contract staff (under the operations manager) while development projects are in the main initiated and controlled from within the business systems unit. The Business Systems Manager stated:

When I first arrived our IT staff really didn’t know what a project was. It was a case of all our staff, all in, there were no role definitions and delineations, if there was anything happening, anybody would have a go. There was no project methodology and certainly no guidelines on how to deliver something between budget and time frame in any sort of regimented way … it wasn’t very disciplined … People just tended to dive in and do stuff and didn’t know when it was going to finish … [however] In the last three years, we’ve put a lot of effort into developing a methodology that we can follow and to introduce a project mindset.

These changes have led to a more structured approach to decision making relating to the IS projects undertaken within the organisation. Since the introduction of these more formalised structures, IS projects have been perceived as mostly successful by all of the interviewees. Success was defined as meeting the business objectives – not necessarily the time and budget targets. The IS Operations/Infrastructure Manager described how the success of a project could be predefined as ‘having a very clear objective about what we want to achieve out of [a] project at the end of the day and what kind of position it would put us in as a result of the project being very successful’. IS projects that provided transparent or value-adding functionality for users and high levels of user consultation were seen as the most successful.

The ERP Data Warehousing Tool Implementation

As part of an ERP implementation, the organisation identified an issue with reporting: the ERP adopted by the organisation was delivered with few reports. This would have posed significant problems for the users of the system. Thus as part of the implementation, a Business Intelligence Suite was implemented. This consisted of a data extraction tool, a physical database containing the data warehouse and a reporting tool. As part of the purchase of the ERP, the organisation purchased a data extraction tool from the same vendor, though the Business Systems Project manager noted that ‘We didn’t have to buy it [in particular] but the decision was made to buy it’. A third-party reporting tool was also purchased that accessed the data warehouse and provide data to users (see Figure 1).

![Business Intelligence Suite](image-url)

Figure 1: Business Intelligence Suite

In the last 12 months of the ERP implementation, resources were “poured into” developing reports, mainly in the form of money for contractors. In the opinion of the Business Systems Manager and the Analyst Programmer, this was done badly in terms of the resulting data warehouse design and having to react all the time and because of the time pressures. ‘We really didn’t get a chance to structure the warehouse to move forward’ noted the Business Systems Manager. The first batch of reports was eventually completed but due to ongoing issues with the structure of the data warehouse, it was decided to re-implement the data warehouse. ‘It was
essentially to try to make our business recognise that we have to re-look at the warehouse, restructure it so that we can more easily produce reports and provide some ad hoc reporting capability to our user base’ stated the Business Systems Manager. The business case was regenerated and decisions relating to the implementation and tool selection were made.

This series of adoption, implementation and reimplementation decisions were all inter-related and affected by a number of factors. Since the initial adoption of the data extraction tool (also know as a business intelligence tool), the initial “build” of the data warehouse has not been entirely successful. The structure of the data warehouse has required constant revision leading to less time available for the development of reports which in turn has led to a $350K reimplementation of the data warehouse structure. The four interviewees who provided specific data on this project were the IS Manager, the Business Systems Manager, the Business Systems Project Manager and the Analyst Programmer.

Process

The decisions relating to the adoption, implementation and reimplementation of the various components of the business intelligence suite were taken by the Steering committee (recommending to the CEO), the IS manager and the Business systems manager. The Business Systems Project Manager was responsible for developing options and making recommendations to the Business Systems Manager based on discussion with his team and people such as the Analyst Programmer. Ultimately, high level decisions had to be endorsed through the Business Systems Manager and the IS Manager for presentation at the steering committee. The IS manager described the importance of the steering committee’s role:

I wasn’t willing to proceed with the project unless it had executives on the steering committee because we went down this path once before and they told you to go ahead and do something and then they’d pull out at the last minute … you have to have buy-in … if they’re not championing it from the start, it’s destined for failure.

This appears to indicate that the role of the steering committee was not just about making choices but to display political commitment. The IS Manager also made a number of interesting observations relating to the role of decision makers in projects such as these, describing his role as that of an “endorser” rather than decision maker:

I doubt, in many organisations, that decisions are made by one person … it’s almost never the case … people make recommendations and then get endorsement of those recommendations … through that whole process, you get a feeling of confidence … the people who ultimately make the decision probably have no idea what decision they are making … they’re not making a decision based on the technology or the business case … they’re making the decision based on the credibility of the people who’ve endorsed it through the process

If something goes to the steering committee, I want 99% to be accepted. If we have a couple of failures, I’ll lose that credibility [with the board] and the whole process will start to fall down. The decision making process is one of confidence and credibility in the process more than it is in the specific information in the initiative.

The high-level decision making was categorised as structured by the interviewees however there appears to be evidence of informal decision making at the middle and lower levels. For example, the Business Systems Project Manager was given the ability to make design and technical judgements based on data sources and advice from technical staff, not necessarily with a formal decision process. This was substantiated by the Analyst Programmer who stated that ‘We were sitting around white-boarding and then would go away and try it … we were sort of coming up with the options…[and making the decision] because we were the technical guys’. This is consistent with the level of confidence the decision makers in an technical/engineering based organisation have in their technical staff when formulating and supporting recommendations to steering committee/board level of the organisation.

The interviewees expressed various opinions regarding their satisfaction with the decision making process. The Business Systems Project Manager noted that the adoption of the original data transport tool was regarded as “not negotiable” thus this decision was not open to debate. The Analyst Programmer felt that the decisions regarding the first failed implementation were related to the technical team having to make all the strategic and technical decisions, stating that:

Well, that’s the problem we had – when we first did it, [consultants] and I had never done a data warehouse hence the reason for the redesign because … we didn’t know what data warehousing was about.
On the second implementation, while the Business Systems Manager felt that the decision process were generally 'ok', he felt that the Business Systems team was having to justify a decision that was being pushed from elsewhere in the organisation, noting that:

It wasn’t ok in terms of it was the cart before the horse … we felt that we were having to justify something that other people should have been justifying … we go into bat on behalf of other people who either aren’t prepared to or for some other reason don’t do that … It is a little bit frustrating when you feel like you have to battle through a justification that is for these people anyway and these are the same people who are deciding and giving you such a hard time about spending the money.

The IS Manager was happy with the decision process on the second implementation but noted problems in obtaining quality justifications from technical staff stating that there were difficulties in ‘getting sufficient information documented in the right format to meet the process requirements [from technical staff]’.

Finally, all interviewees agreed that their personal opinions and perceptions played a significant role in their decision making. The Analyst Programmer noted that his decisions relied heavily on personally preference and past experience, while the Business Systems Manager rated the impact of his personal opinions as ‘significant’. Drawing from personal experience and knowledge was common in the senior managers and they reported that trust in the advice and opinions from their staff was important. The IS manager stated that:

I think [my opinion] has a big impact. It’s pretty unlikely if I say that I don’t think we should be doing this … I’m against it … that it is very unlikely that the steering committee would endorse it. If I say that I think we should do it, then there is a pretty good chance of getting it over the line … but there is no guarantee … I’d probably get about a 90% success rate.

When asked how much of his personal opinion was affected by personal knowledge, he responded:

You have to know enough to understand the concepts, understand what actually happens and know enough to be able to ask questions. As well as that, I need to have enough confidence in my own ability to ask even dumb questions because it’s amazing the number of times I’ll ask dumb questions and they’ll [technical advisors] start to try to explain and I find [problems].

Justifications

On the original implementation of the Business Intelligence Suite, the base justification given was that lack of reports in the ERP. No justifications were given for adopting the Data Extraction Tool from the ERP vendor: ‘the decision had been made’. For the re-implementation (which also involved reconsidering reporting tools), the business case was nominated as the key justification. However this justification was closely related to the feeling of the user base, and as the Business Systems Manager put it, ‘the pain people were feeling’. Users needed to be able to obtain accurate data in a timely manner and this was the motivation for the re-implementation. Costings and savings to the business were never quantified, and as the IS Manager stated, most of the benefits were non-tangible. He went on to add:

You can put in this wishy-washy sort of crap where it’ll save people 20 minutes a day and 350 people and $30 per hour + 20% on-costs and add up and multiply all these and say it’ll save us $20M over three years which is just bollocks … you can justify anything like that … I wouldn’t insult steering committee by taking stuff like that to them. If we put cost savings in there [the business case] they’re real and genuine … beyond that, I put a verbal description of the world with this [initiative] and the world without it and let those guys weigh it up and justify if it is going to add value to the business.

With respect to choosing reporting tools, two products existed in the market place. As the Business Systems Project Manager noted, ‘both products could do what we wanted’. One of these products, Product A, was already widely used in the organisation and a heavy investment had already been made in training. Product B was also slightly more expensive, and as the Business Systems Project Manager noted ‘Once [Product A] could prove that it could do what we wanted, [Product B] was really up against it because we already had [Product A] in the company’.

Information sources

A number of information sources were used to inform decision makers. The Analyst Programmer stated that he had ‘relied heavily on the supplier/vendor’s own documentation’ and white papers. The Business Systems Project Manager supported this, stating that he had used information from the Internet, sales literature from vendors and information from consultants. The Business Systems Manager stated that they relied heavily on advice from his own team and “corporate memory” of the first implementation, remarking that:

We had gained a lot of in-house, a lot of inherent knowledge about how this data warehouse was constructed and the info that should be going in there … so we believed we’d been given a better
understanding in a lot of ways than the vendor did on what this database actually looked like and how it related to other bits within.

The IS Manager said that he had relied on information from his technical team, consultants and other members of the organisation:

There was a lot of dissatisfaction of the ERP system and that was largely because they [members of the organisation] couldn’t get any of the information out of the system that they needed so they certainly weighed heavily on the decision.

**Decision Factors**

A number of factors affected the various decisions involved in this product adoption. The Information Systems Manager believed that factors such as cost, time and risk played a role in his decision making. He also felt that the opinions of other employees of the organisation were important. He noted that there was not any overt political influences on his decision, but remarked that this is not always the case, stating that:

If our chairman says I want a board papers website … that’s it, there’s no justification … steering committee isn’t going to argue ... The process can be bypassed at a high-enough level.

However, he did note the effects of politics at the steering committee level. He remarked on the political pressure on members of the steering committee because of the organisational pain being experienced. He believed this made the approval process easier, stating that:

They were likely to approve the [data warehousing project] because of those political pressures. But sometimes it goes the other way and that’s hard. When I align with what the political pressures are, that’s fine, but … when … they don’t align though … when I’ve got board pressures and things … when they’ve got ulterior motives that’s when it’s hard. Sometimes it’s quite subtle. We’ve got a managing director for example, who happens to be the managing director of [an ERP vendor] and they also sell an [another] ERP system … he would very much like to see us throw out our current ERP and put in [the ERP] and that’s a subtle thing that’s going on in the background … from his side, he probably sees value in seeing as much pain and difficult in our current ERP environment … so coming up with solutions and that … he feels very negative about that … probably because of some conflicts of interest I think.

It should be noted that the Business Systems Manager confirmed this, noting that ‘A few people in [the decision making forum] had come from other companies who claimed to know all about EIS systems and were promoting other tools’.

The IS Manager also made an interesting admission regarding how his decision making processes work, stating that:

I’m a perceptions type person … based on perceptions, this is what I reckon I should be doing … then I build a business case and put all the analysis around it to support what intuitively is the right way to go.

This indicates that the IS Manager builds justifications and analysis around a strong preferred option, indicating strong pre-decisional bias. He confirmed this style of decision making by rating “gut feeling” as the most important factor affecting his decision making, stating that ‘It’s got to feel right’. The Business Systems Manager believed that organisational pressure was a factor in the decision making process. He noted that:

Parts of the business would be very vocal when it came to making sure their own needs were met but were perhaps the parties most vocal in opposing or generating discussion on whether this paper should actually fly.

He noted that the composition of the committee ultimately affected the decision, stating that:

Decision makers were largely from the finance group yet the result of this paper [business case] was servicing the entire business … really we were trying to convince finance group that we should spend money on other disciplines and maybe they didn’t have a full appreciation of what was going on in those other disciplines.

He believed the strongest factor affecting his decision making related to the consequences of not providing a viable solution to users. He remarked that:

[We had the] knowledge [that] if we didn’t do something, we were going to be reacting to requests and having to build things on a badly designed data warehouse that was effectively going to waste time and money. [We had the] knowledge that we would always be dependant on contract staff through that process. Unless we started providing our people with tools that gave them some power over their own destiny, we always going to be expending contract, or our own staff, at the expense of other work.
The Business Systems Project Manager and the Analyst Programmer had a more technical approach to their decision making. They were primarily concerned with factors such as functionality and cost, although again, the “squeaky wheel” term was mentioned in relation to organisational pressure to deliver a solution.

Outcomes

When asked if the initial decisions regarding the IS project affected other decisions, interviewees gave mixed responses. The IS Manager didn’t believe so, although noted that:

No. But in [they can in] other instances. Every time you make a decision and start going down that path, as a result of making that decision things have changed and as a natural consequence, that’s going to affect other things.

Both the Business Systems Manager and the Business Systems Project manager believed the decisions had had major resource impacts, with the Business System Project Manager remarking that:

We bought a BI product, implemented it and we thoroughly underestimated the resources required to develop, maintain and improve it… It’s now the largest product we maintain.

The project is ongoing and the second attempt to roll-out reports based on the new data warehouse structure is underway. Indicators are that this is progressing successfully although three interviewees placed riders on that when asked if the decision has had good or bad outcomes. The IS Manager noted that it ‘wasn’t a silver bullet’ and ‘wasn’t a raging success’. The Business Systems Manager stated that the project had made ‘quick wins’ although ‘we made the only choice we could make’. The Business Systems Project Manager noted that it had produced good outcomes for the organisation, stating that ‘You can’t have an ERP without a BI tool … you can’t store transactions and summarise those up to KPIs … it’s a good indication of company health ‘.

When asked if they would have made the same decision now, based on their experiences, again, responses were mixed. Both the IS manager and the Business Systems Manager said they would, but the Business Systems Project Manager was more reticent. He believed that in retrospect, the initial transport tool selection, which affected the entire business intelligence suite design, was not ideal and that he would not have selected it, stating that ‘Experiences with the product haven’t been great – it’s been pretty buggy – it is not a key focus of the vendor so getting support and upgrades are hard’. He indicated that had he had the time and lack of constraints, it would have been far better for the organisation to examine the issue of a business intelligence suite as a single entity, remarking that:

If we’re going to talk BI, lets talk the whole suite, you’ve got your [ERP], you implement that, if we want to do business intelligence, let us choose the whole lot. There may have been a suite where the data mart or data transformation tool was so inherent in the front end tool, as in one product, you may have gone with the one suite.

In other words, do not look at the individual components but look at the whole system. All interviewees agreed that the decisions had been supported by the organisation, although the IS Manager remarked that ‘will be years time before you’ll know if it has been successful’.

DISCUSSION AND CONCLUSION

It can be seen that the organisation has evolved from “ad hoc” IS decision making into more formalised evaluations. However, there appears to evidence to suggest that the “nuts and bolts” decisions are still occurring somewhat informally at the lower levels of the organisation and that these decisions are then crafted or retrofitted into business cases for approval at the executive level. This is consistent with the findings of Straw (1990). There is evidence of clear frustration with having to build business cases around decisions that had clearly been made and it is interesting to note the IS Manager’s difficulty in getting documentation from technical staff to ‘satisfy process requirements’. This resistance to formal evaluation and business case development may not be uncommon. It is clear from this case study that the role of senior decision makers is not to evaluate information but to ratify the decisions of those who they have trust in.

With respect to justifications, it is interesting to note that the IS Manager discounted the use of quantitative statistics for IS decision justifications, admitting that they are of little value. His reliance of qualitative, intangible justifications is consistent with the views of Buss (1987) and Mintzberg (1972). It is also worth noting that some of the decisions simply were not justified – they just happened. This would appear at odds with the conventional rational view of IS decision making.

Information was fed into the decision making process from a number of sources. Tangible information was fed from vendors and suppliers through the technical team and consultants to the middle level decision makers.
Other intangible information including “corporate memory” and “in-house knowledge” was present in the minds of participants at all levels of the process.

When it came to what factors actually affected the decision, indications were that tangibles such as cost, time and risk played a role. However, it was the IS Manager’s perceptions that ultimately guided the decision. He ranked “gut feeling” as the most important element of his decision making. It should also be noted that at the executive level, politics played a contextual role in shaping the way proposals were developed and viewed. It was also apparent that individual board members’ external associations could have a significant effect on a decision. It was also apparent that organisational pressure, deemed the “squeaky wheel” played a strong role in pushing decisions relating to this IS project through. It is worth noting that few of these factors appeared in decision justifications which seem to support the findings of Heracleous & Barrett (2001) that “undisclosed” factors often affect IS decision outcomes.

Clearly, management decision making is influenced by the degree of trust in their information sources. Unfortunately, good technical decisions can only be made within the organisational and environment parameters available, thus imperfect decisions and recommendations can occur. This is exemplified in the initial implementation by the decision to take the data transport tool provided with the ERP vendor without considering the overall effect on the business intelligence suite reporting project. In this instance, the tool selected caused some difficulties in building an appropriate data warehouse structure, thus delaying and complicating report production. This has resulted in a second attempt to build a viable data warehouse. It is interesting to note that the existing in-house knowledge of one of the products was a noted factor in its selection and justification. The issue of who has the most lobbying power and is the most vocal will also affect the priorities and parameters of a project. It also appears in this organisation that a decision maker is more likely to be influenced into making a rapid selection decision if there are organisational and political pressures applied. It is also clear that “gut feel” is being exercised at the higher and lower levels of decision making and is shaping the business case and justifications for decision options. It would be surprising if this style of decision making was isolated to just this organisation. If so, further research into exactly what are the real factors that affect IS decisions would appear to be essential.

REFERENCES


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