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ERP: More than Just a System The Role of ERP in Mergers and Acquisitions

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Abstract

Company takeovers continue to be a common corporate practice. Where these involve the acquisition of similar businesses the speed of integration is regarded as a contributory factor to the success of the acquisition. In this paper the contribution of the implementation of the acquirer's ERP system to integration is explored. ERP implementation may impose the acquirer's business procedures, processes, data formats, values and underlying culture and has the potential to be a powerful tool to drive the level of integration being sought. In this qualitative study the authors explore a series of ERP implementations in the Asia Pacific region that appear to have successfully contributed to the integration of a global company's business in this region, and contrast these findings against other conflicting outcomes reported in the literature. Implementation strategies that are considered to have contributed to this success were developed. These strategies were based on an appreciation of the cultural dimensions predominant in the region, and included emphasis on the strategic aim, sharing leadership between Head Office and the local business, project teams comprising a mix of Head Office analysts and regional business people, and strong communication practices in which a sense of community was developed.

Keywords

Mergers and Acquisitions, ERP, Culture

Introduction

In the current competitive and increasingly global business environment, mergers and acquisitions abound as deliberate strategies by which companies achieve certain corporate goals and objectives such as rapid entry into a new market or region, building barriers to entry, achieving efficiencies through economies of scale and reduced costs of operations, and the like (Hubbard 1999). However about 66% or more of takeovers fail or disappoint for one reason or another (Lewis et al. 1999). Failure is defined as the non-achievement of the goals and objectives of the merger, often a failure to deliver increased shareholder value in both the short and long term. Common causes of failures include poor timing, flawed logic and ill-conceived analysis, poor alignment with the acquirer's intended business strategy, poor planning and attention to detail, cultural issues, a failure to quickly meld the two companies and hubris (Perry & Herd 2004). Recognising the value of a merger and implementing actions so that a fully integrated, profitable and sustainable new enterprise emerges, is arguably a complex, risky, and challenging undertaking.

In a study conducted between 1977 and 1982 of 152 takeovers, Hubbard (1991) identified nine possible relationships between acquirer and acquired. Hubbard (1991) proposes that if the acquisition is an absorption, one involving very similar types of firms in the same industry, where the major rationale for the acquisition is to create economies of scale, increase barriers to entry, reduce costs or increase market power, then there is a high strategic interdependence between the businesses and a low need for organisational autonomy. In other words the aim will be for the target business to be quickly absorbed, so the customer quickly sees just one business, and benefits in purchasing and marketing can be realised as soon as possible (Hubbard 1999). In such cases strategies will be pursued that attempt to remove all traces of the target's previous (separate) existence, and seek to switch employee affiliation to the acquirer. According to Hubbard (1991:260) this is done by 'introducing acquirer systems, procedures and policies'.

Since Hubbard's 1991 study, much in the business landscape has changed. Today there are fewer mergers being pursued and they are much riskier because of the increase in the number of cross-border mergers and acquisitions (a function of globalisation and increasing competition), and increasing expectations that the merger will realise not just cost reductions, but also will deliver on growth in new markets and capabilities, and the like (Perry & Herd 2004). At the same time the ability to impose the acquirer's systems, procedures and policies has also increased, through improvements in the ability to integrate business processes and systems using a range of

technologies, including enterprise resource planning (ERP) systems. Arguably, this potentially reduces the risk of a failed merger.

Of interest to this paper is the impact that modern technologies and architectures, and specifically ERP systems, can have on the process of mergers and acquisitions. It would now be becoming increasingly common for an acquiring business to expect the acquired to become fairly quickly integrated into its existing business processes, and hence its information systems. Previously acquired businesses may also be being brought closer into the corporate fold. This may lead to the need for integration of formerly independent businesses into the company's single system. For example, in the past a company might have acquired a number of businesses in the same industry, but perhaps in other countries. They may have left them to run fairly independently, but may now for a number of reasons, such as the potential to reduce costs, increase market knowledge and power, a perceived need to present a consistent face and supply chain to global customers, and the potential ability to do all of these through an integrated ERP system, decide that this closer integration is very desirable. Integrating these businesses through ERP consolidation may bring the desired corporate benefits, but may also reduce the independence the local business previously had. It will almost inevitably lead to changes in processes and practices in the formerly relatively independent business. There may be a negative response to this amongst the local staff, which may prejudice chances of the success of the implementation (Hanseth, Ciborra & Braa 2001) and may in fact run counter to achieving closer ties between the various business units.

An alternative view however, would be that the work required to implement an ERP system, be it in a newly acquired business, or one long held but previously independent, may have the potential to not only bring together the technical aspects of the relationship, as in the integration of systems and the flow and management of data, and the adoption of common business processes throughout, but also to improve the social and management relationships between people in both businesses, leading to better utilisation of resources, enhanced chances of synergy developing between the acquirer and acquired, and faster integration.

There is scant attention to this possibility in the existing literature on ERP systems. In fact, the more frequently reported scenario is ERP implementations in mergers and acquisitions actually resulting in fractures and problems rather than in building social and relational capital, such as the case of Norsk Hydro (Hanseth, Ciborra & Braa 2001).

This paper is structured as follows. In the next section, we will briefly discuss the importance of IT in mergers and acquisitions before going on to consider the nature of ERP systems and their potential to promote integration between businesses. The role that differences in national culture may play in an international implementation is then considered. A series of successful ERP implementations/integrations in the Asia Pacific region, based on an Action Research intervention, is then outlined and the implementation strategies that contributed to integration proposed. The paper concludes by considering whether the proposition outlined in this introduction can be supported, and considers the need for further empirical research to further substantiate such a claim

The Importance of IT in Mergers and Acquisitions

Gaining the full commercial benefits of an acquisition is already known to be problematic and when the business acquired is in another country it may be even more difficult (Perry & Herd 2004). Business practices, culture, language, policies and politics may all work against deriving the expected benefits. However, Bartlett and Ghoshal (1998) suggest that firms operating in global markets can be at a disadvantage if they fail to gain control over their operations worldwide, and manage them in a coordinated fashion globally. In today's business environment, this would surely imply implementing standardised business processes worldwide and using IT as a means of both control and managing consistency worldwide. If one of the underlying required contributors to a successful acquisition is control, to some degree or other, of the acquired business, and in imposing the acquirer's systems, policies and procedures on the acquired, then ERP systems with their focus on standard data formats and integrated processes would seem potentially to be a most valuable tool.

IT may now be regarded as one of the most critical aspects of integration and successful implementations (Popovich 2001). Writing about critical success factors that have the most effect on the success or failure of mergers and acquisitions, Popovich (2001) advocates using the acquirer's system, with standardised interfaces and cites a number of large US based corporations that have developed and implemented standard methods and techniques to deal with acquisitions.

The Nature of ERP Systems and their Potential in Mergers and Acquisitions

To understand just how ERP can play such an effective role it is useful to gain an understanding of ERP from a number of different perspectives. For instance ERP may be defined from a technology perspective, as a form of packaged software whose functionality can meet the majority if not all an organisation's needs and allow the

seamless flow of data between different parts of an organisation (Gray 2006). But such a definition ignores many aspects of an ERP system. In contrast to the technology perspective, Boersma and Kingma (2005) note the unintended consequences of ERP. In fact it is these so-called unintended consequences such as the proliferation of standardised business processes and the contribution to the coordination of businesses on a trans-national level, together with the view that an acquirer's ERP system is loaded with their cultural values (Davison 2002), that give much of the potential to drive the change in an acquired organisation that may lead to greater integration and ultimately acquisition success.

Boersma and Kingma (2005: 125) propose that the implementation of ERP, with its software modules focused around processes rather than functions 'may cut across departmental lines' and lead away from a functional to a process orientation. This may have far reaching effects in the acquired business. There may be shifts in power and management objectives which may need to be translated into system objectives, implying a need for higher level management involvement in the set up and configuration of the ERP system. Governance of the implementation may thus become a vital activity involving senior managers and the very core of the business. This may lead to the high level of local senior manager involvement that is so often cited as critical to success in ERP implementations (Brown & Vessey 2003). In such a case the contents of this melting pot of roles and responsibilities are now recast in a framework that is the implicit business model of the acquiring business.

If changes to processes, structures, roles and the like are a feature of an ERP implementation, then surely it can be leveraged and viewed as an explicit strategy to drive the integration of acquired businesses. This is not just from a technical data sharing and supply chain integration point of view, but in terms of the alignment of business structure, responsibilities, processes, common reporting and the deeper integration of the business strategy, people relationships, communication processes, policies, and more, all relatively quickly.

Culture: A Help or Hindrance?

From the above it would initially seem that implementing an acquirer's ERP system in an acquired business would progressively do much to drive the rapid and deep integration of the acquired business in to that of the acquirer. However the extent to which this is accepted and allowed to occur might well be influenced by cultural values. The company being acquired or consolidated may have a very different internal culture to that of the acquirer/consolidator, or may be located in another region or country with different cultural values. Krumbholz et al. (2000) investigated the impact of culture on ERP implementation, proposing that failure to adapt an ERP package to the local culture may lead to projects going over budget and over time. In the Krumboltz et al. (2000) study, the implementation of ERP packages in a large pharmaceutical organisation in Scandinavia and the UK were considered. Cultural measures proposed by Hofstede (1994) were drawn on as a possible explanation of the issues, for instance in this case the lower masculinity index in Swedish organisations compared to British ones which might have resulted in greater acceptance of the ERP in Sweden than in Britain. This finding might lead to questions about whether or not culture dimension scores would pre-dispose the likelihood of merger and acquisition success or failure. Might such differences not also affect the success of implementing an ERP system, laden as it is with the cultural values of the acquirer?

In another example considering the cultural issues associated with implementing an ERP solution, Hanseth et al. (2001) write of an integration attempt based on consolidating ERP systems in Europe in 2001 that almost led to the opposite of the desired result and go on to speculate that by its very nature implementing an ERP system may be counter productive to integration. Hanseth et al. (2001) acknowledge that potentially an ERP implementation can lead to increased control due to three factors: firstly the integration of multiple, often disparate systems, within a business into a single one; secondly the improved governance achieved through the integration of data across the organisation; and thirdly through the business process re-engineering which often occurs at the same time in order to enable the businesses processes to run using the existing functionality of the ERP system. However, far from being an easy solution for companies wishing to globalise their businesses, Hanseth et al. (2001) propose that the deployment of ERP in global organisations may be better characterised as a careening juggernaut, a run-away engine of enormous power (Giddens 1999). ERPs are argued to be complex constructions with ever changing dynamics which may exhibit erratic behaviour which is the antithesis of that sought in their implementation.

The basis of these arguments is a study of a pan-European ERP implementation undertaken by Hydro Agri Europe (HAE), the European fertiliser division of Norsk Hydro between 1995 and 1999 (Hanseth, Ciborra & Braa 2001). Whilst acknowledging their proposal is based just on the empirical evidence from the Norsk Hydro case, the authors claim the phenomena are analysed in detail sufficient to transcend the individual case and may reflect the dynamics and many side effects of modernity and globalisation proposed by Giddens (1999). While these findings are clearly important to our understanding of the role of ERP systems in mergers and acquisitions, the experience of the researcher in another company in a different part of the world, with quite different values in Hofstede's terms, has been very different, quite the reverse in fact, and may give hope to companies facing

mergers and acquisitions and wishing to integrate these acquired businesses into their ERP system, and through this process rapidly integrate the acquired businesses.

Before discussing the outcomes of our experience, it is proposed to briefly discuss the research method adopted for this study.

The Approach

This paper is a qualitative study that takes an action research approach (Checkland & Holwell 2007; Cherry 1999) to developing the argument that the ERP implementation process may, in some environments, overcome some of the issues and challenges of mergers, acquisitions and consolidations, and may in fact help an organisation realise the benefits expected from an acquisition more quickly.

The authors support the view that IS is a socio-technical discipline (Hirschheim 1985; McKay & Marshall 2007) and that considered holistically, an information system is both historically and contextually situated (Mitev 2003). McKay and Marshall (2007) propose that action research is most suitable for investigating IS due to its integration of problem solving activity and research.

Indeed action research has been used as a qualitative methodology in IS research since the 1980s (Baskerville 1997). It is commonly based on series of cyclic processes comprising diagnosing, action planning, action taking, evaluating and specifying learning (Susman & Evered 1978).

The research here is based on a series of nine ERP implementations conducted by a US based corporation in newly acquired companies or previously acquired but allowed to remain independent, companies, over an eight year period between 1998 and 2006, in the Asia Pacific region.

In this research the 'diagnosing' stage involved one of the researchers becoming aware that the chemical company wished to implement an ERP system in a newly acquired business and positioning himself to be able to collect data about the implementation process, either through direct participation or through interviewing participants. Action planning involved development and consideration of alternative approaches to implementation, again through direct participation or through interviewing participants. Action taking comprised direct involvement in an implementation, or the interviewing of participants who were directly involved. The evaluating stage involved study of the outcomes of each implementation. Specifying learning involved reflection on the outcomes of the evaluation and generating knowledge which was, to varying degrees, then applied to the next implementation.

Of the nine implementations, one of the researchers was directly involved in seven and indirectly involved in two. The acquiring company in all cases was a chemical manufacturing company based in the US mid-west and these were 'absorption' acquisitions (Hubbard 1991).

Due to the emergent nature of most action research (Galliers 1992), three areas of potential compromise need to be addressed. The first of these relates to the uncontrollability of the environment being studied with events, either expected or unexpected, occurring that are outside the control of the researcher. This particular research programme experienced many changes over its course due to the parent company's emergent approach to translating high level strategy into tactical activities and the influence of global political activity (such as September 11th) and software vendor marketing strategies. Whilst such factors influenced individual implementations, over the course of the nine implementations over the eight years, patterns of implementation behaviour did appear.

A second identified threat to the validity of the findings of action research is that of contingency, as in the findings from the research being highly contingent and having little external validity (Cook & Campbell 1976). Whilst such criticism may be valid in a single action research iteration, in this case, multiple iterations in different environments address this threat to some extent. Nevertheless it is acknowledged that due to the nature of these implementation projects, many factors contributed to their relative success or failure and a direct causal relationship between any particular activity and response cannot be made.

The third commonly stated threat to action research is that of the subjectivity of the researcher which can come about due to the deep involvement of the researcher in organisation and process being studied (Francis 1991). It is acknowledged that one of the researchers was closely involved in seven of these implementations and thus cannot be regarded as an objective reviewer, however the second researcher had only an academic interest in the research. More in-depth research is underway into these nine implementations and a further three, utilizing a third (external and independent) researcher which will address this current weakness.

Multiple iterations of the action research cycle are regarded as an effective antidote to these three areas of weakness in the action research methodology (Kock 2007).

Stage 1: The Action Research Study of ERP implementations in Australia, Malaysia and China

The action research study was conducted in a chemical manufacturer supplying to industry, based in the mid-west USA, which had expanded largely through acquisition to become a global player with substantial operations now in Europe, Asia-Pacific and South America. In this study it will be referred to as ChemOne. ChemOne is largely unknown to consumers outside the USA, but does now have a significant business in Europe and Asia-Pacific. In 2005 the company had sales in excess of US\$10 billion, a net income of nearly US\$600M, a research spend of more than US\$300M and employed more than 31,000 people globally. Between 1995 and 2006 one of the larger divisions of the Company grew substantially, largely through acquisitions in Europe and the Asia Pacific region. Manufacturing plants were acquired or built in the UK, France, Italy, Australia, Malaysia, China, Thailand, and Singapore, and additional sales offices were established in New Zealand, Hong Kong, Japan, Taiwan and Vietnam.

With the company pursuing a growth strategy based on absorption acquisition, senior IS managers in head office in the USA developed an aligned IT support strategy based on the establishment of a standard information system that could be progressively implemented in each newly acquired business. A key plank in that strategy was to use the functionality of an ERP system to support the integration of data and business processes across the entire business, and this ultimately resulted in a series of ERP implementation projects being rolled out in different locations across the globe over an 11 year period. ChemOne first explored the possibility of an ERP system in 1995 with an early Oracle application that lacked required functionality and was beset with other difficulties. An attempted implementation in France was eventually abandoned. The experience taught key managers in the Company the importance of maintaining a 'vanilla' form of the application (meaning plain and unchanged), and of using 'bolt on' applications to improve functionality where it was indisputably missing (rather than trying to gain the functionality by changing the core application).

One of the researchers became involved in 1998 when ChemOne acquired an Australian business and proceeded to implement a new stand alone version of the Oracle ERP application. From the researcher's perspective, the framework of ideas (Checkland & Holwell 2007) to be investigated through the implementation project was the view of the PPG managers that ERP implementation could proceed more efficiently if a 'vanilla' form of the application was adhered to and where strictly necessary 'bolt on' applications were used to add missing functionality.

The project proceeded as follows. A local project team was formed in Australia to work with a small team of analysts based in the head office in the US. It was anticipated this implementation would be the trial for subsequent implementations in Asia and Europe where further acquisitions were being confirmed. A configured application template that it was hoped would have universal application within the business, was proposed by the US team. The plan captured in this template was to have a common global infrastructure, running a vanilla ERP (Oracle) application on all sites, with functionality gaps being filled by small packaged or developed applications being interfaced with the main ERP application. Such additions would form a library of applications theoretically available to all businesses using the system. Such an approach is claimed to enable the alignment of business strategy, culture, processes and IS and IT infrastructure worldwide (Marchand 1999). The template was designed and intended to support the Company's aspiration to have global markets, with consistent products and brands, and consistent business processes globally. A possible weakness or limitation of such an approach is that it does demand a level of business uniformity and consistency, a potential difficulty in the case of a newly acquired company, and which may require a strong company culture with top down leadership if it is to be successfully adopted (Marchand 1999). However, as ChemOne was a large enterprise, and had already demonstrated this strong top down approach in the Asia Pacific region with the successful establishment of a centralised accounting function based in Hong Kong, project sponsors were confident that this challenge would not prove to be insurmountable.

The template was applied in the Australian context, and subsequently the 'vanilla' ERP system was successfully implemented by a joint local and Head Office project team, led by a locally based Australian project leader drawn from the business (not the IT/IS area). The ERP implementation in Australia took nine months and was completed on time and within budget. Whilst a structured benefits management framework (Ward & Daniel 2006) was not applied there were a number of targeted benefits that were achieved, in particular:

- The demonstration (to the rest of the organisation) that the business could run on a vanilla version of the ERP application, supplemented by a number of small additional applications directly interfaced with it.

- The development and documentation of a believed to be repeatable implementation process.
- The development of knowledgeable and experienced project team members able to support ERP implementations in other parts of the organisation.
- The development of an internationally accessible ERP simulation environment and supporting training documentation enabling future users in other parts of the organisation to use and learn about the application.

In reality many operational issues arose in the first few months of this first implementation largely resulting from the lack of experience of the implementation team and software scale up issues. Nevertheless in the organisation's and Hubbard's (1999) terms, the integration was a success in that with the implementation process new terms, policies, processes and procedures came into use. Following the implementation there were few traces left of the previous separate existence of the Australian business.

From the researcher's viewpoint it could only really be stated that this implementation of a 'vanilla' version of the application, had been judged by the organisation as 'successful', whilst the previous project which had tried to customise and implement an earlier version of the application, had not.

However opportunities to study further iterations of the implementation process arose as the Australian implementation experience and project process became the base for subsequent consolidation implementations across the Asia Pacific region in 2001 following a number of (absorption) acquisitions.

A team drawn from Australia and the US Head Office worked in the first instance with a local Malaysian project team to implement a stand alone ERP system at a manufacturing plant in Kuala Lumpur, the time required being reduced to 4 months. The process was subsequently successfully repeated by the Head Office and Australian team in conjunction with a local project team at a manufacturing site in north east China. In both cases the same strategies (discussed in the following section) were employed to promote the integration of these businesses into the increasingly global business of the acquirer.

These three implementations, all regarded as successful by ChemOne, demonstrate some degree of replicability, at least within this organisation, by this team, at this time. During these projects, the researcher met frequently with their Sponsor and members of the project to learn about progress and the perceived contributors to successful implementation and integration of the businesses. Through this process and subsequent reflection (Boud, Cohen & Walker 1993), initial theory emerged regarding the implementation strategies that may have contributed to these perceived successful outcomes.

ERP Implementation Strategies Contributing to Integration

The ERP implementation strategies which appeared to contribute to the successful integration of the Australian, Malaysian and Chinese businesses were as follows:

Adoption of a Template for Implementation

The core members of the project team were asked to plan and implement an ERP system, not just for Australia, but also for subsequent implementation in other businesses in the Asia Pacific region and Europe. This led to project members thinking more deeply about appropriate processes, data requirements and best practice, (above and beyond their own immediate needs) and to the development of a repeatable implementation process which was subsequently followed in Malaysia and China.

A Shared Approach to Leadership

Despite Marchand's (1999) proposed need for strong top down leadership to implement a global system, the Head Office-based project sponsor allowed the implementation of this first installation to proceed with a flexible informal project plan that relied heavily on local leadership within the project team and close cooperation between local and Head Office members of the project team. This enabled the team to build new knowledge and understanding as the implementation proceeded and respond quickly to specific local requirements. Only the high level objectives concerning the overall timetable, overall budget, infrastructure and the deployment of Head Office resources, were directly controlled by Head Office. This appeared to lead to a high level of local responsibility and ownership being taken in Australia for the success of the project. Communication with Head Office was generally in the form of a dialogue and advice, rather than authoritative direction. This appeared to encourage communication from Australia.

Integration of the Project into the Local Business

With the exception of the local project leader who was assigned to the project full time, all other local project members retained their pre-existing business roles as well as their short term project roles. This led to the project being closely integrated into the day to day business throughout its life.

Experienced and Knowledgeable Staff Members from Acquiring Company Involved

Supporting the ERP implementation were four internal consultants from the acquiring company. All had worked for the company for many years and had deep knowledge of its business, its processes, its culture, and the like. Two were IS analysts based at Head Office in the US, one an Operations Planner at a major US manufacturing site, and another an analyst from the Hong Kong regional office. They spent approximately two weeks per month at the Australian site over a period of nine months. This was a gruelling on them and expensive for the company, however they greatly assisted integration by bringing in and living their company's practices, policies and procedures. A social programme evolved that led to friendships developing and contributed to the development of trust.

Involvement of Future Users in Simulations

A series of organised business simulations of growing complexity integrated the testing of functionality, defined processes and draft documentation, gave a focus to project members, structure to the plan and timetable and provided opportunities for future local users and future project members (from Europe and Asia) to use the application.

Communication Skill Development

In order to involve non-Australia based project members in project meetings, a practice of incorporating international teleconferencing into the regular and frequent project meetings led to the acquisition of suitable hardware, the building of supporting work practices, accepted procedures and individual skill in participating in such teleconferences.

Stage 2: Action Research Study of the Consolidation of Asia Pacific businesses

Between 2004 and 2006 the researcher had the opportunity to further study the application of the growing body of knowledge within ChemOne about implementing ERP and using the process to integrate newly acquired businesses when the ERP project team was again assembled in the Asia Pacific region to implement a major upgrade to the already installed versions of the ERP application and at the same time consolidate the company's businesses, some newly acquired, into a single instance across the entire region.

In all cases the businesses involved were manufacturing or selling similar groups of products in similar ways. Due to the very spread out geography and the considerable personal toll of extensive travelling in the stage 1 study, it was decided to run the project largely using virtual communication technology. The underlying process however still basically followed the template developed some years previously and the key ideas of vanilla implementation and add-on applications to fill functionality gaps.

A slightly revised template for the single instance implementation was developed jointly by the same analysts from Head Office as before, now assisted by Australian- or Hong Kong- based up and coming business managers who took regional leadership roles for major business processes. A long term strategic approach was taken to resolving the many issues relating to data and system configuration and a 'can do' attitude prevailed. In Head Office the project sponsor who had been responsible for the earlier ERP projects in the region was assigned responsibility and he in turn employed the same project leader in Australia as before. This team was known by many of the staff in the region. The presence of these pre-existing relationships appeared to help to solve many problems.

With the template agreed, the application was implemented on one site at a time where a local project team took local leadership, strongly supported by the region-wide project team. Local project members from sites where implementations were planned for the near future participated in simulations and implementations at other sites before the implementation was commenced at their own site. Some discreet competition developed between senior site managers vying for the smoothest, fastest and most trouble free implementation and integration. As local staff expertise developed on a site, this was recognised by head office, and knowledgeable individuals became a regional resource travelling to other sites to assist with subsequent implementations. This built relationships between sites, increased individual responsibility and was a clear demonstration that active project involvement could lead to career advancement.

Simple virtual communication technologies were used to great effect. An MS SharePoint website as a virtual project office, teleconferencing combined with online meetings using MS Exchange server. As important as the technology were the communication practices that evolved as experience grew in the effective use of these technologies. Frequent well structured meetings which fostered not just clarity about the project, but personal relationships as well, and built a sense of regional community became a normal part of daily operations of these projects.

Naturally local needs created challenges on individual sites (Soh, Siew & Tay-Yap 2000). These were accommodated within a steadily expanding regional template, with existing functionality and workarounds being used wherever possible, and at a last resort an add-on application being bought or developed to interface with the ERP system and thus provide the required functionality. Altering the 'vanilla' version of the application itself was not considered an option (Soh, Siew & Tay-Yap 2000). These enhancements became available to all via the 'library' previously discussed.

The Outcome

In this project, between late 2004 and early 2006, ChemOne consolidated onto a single ERP instance its businesses in Australia, New Zealand, Malaysia, northern and central China, Thailand, Taiwan, Japan and Singapore. The project was completed on time, within budget, and delivered the expected functionality to users. But it delivered much more than this. Apart from the expected benefits of data integration, common reporting and supply chain benefits, it also led to closer relationships and communication both between sites in the region and with Head Office in the US together with the widespread use of virtual communication tools. The virtual communication practices pioneered by the project teams were subsequently implemented by project members back in their normal jobs and became common practice for business management groups and functional groups across the region. A growing number of middle managers in the region became highly competent with the ERP application and its regional implementation. This combined with a near standard implementation process that evolved, enabled new acquisitions to be brought onto the system quickly, economically and reliably.

In addition a number of staff took the opportunity to become involved in the project and broaden their network to include staff on other sites and Head Office.

The European and Asia Pacific Cases Compared

In Table 1, a comparison has been made of some of the differences between the Norsk Hydro case (Hanseth, Ciborra & Braa 2001) and ChemOne's ERP consolidations. This has been based on the perceptions gained of the Norsk Hydro case, and the researcher's observation of the ChemOne situation. Not mentioned are regional cultural differences, for instance in Hofstede's terms the highest ranking dimension for all Asian cultures is that of 'Long Term Orientation', whilst 'Individualism' is low (Hofstede 1994), indicating a preference to be a member of a close and committed group, be that family, project team or company. Loyalty is important.

European countries, the USA and Australia tend to score the opposite, high for individualism, relatively low for long term orientation. With this in mind during the ChemOne Asia Pacific ERP implementation project, emphasis was placed on activities that would align with these cultural values including:

- Presenting acquisition, consolidation and ERP implementation plans and activities from a strategic point of view, emphasising the shared long term benefits of integration.
- Sharing responsibility for leadership: Respecting local leadership (Hofstede's Power Distance dimension is high in most of Asia) (Hofstede 1994), by consulting, listening to and deploying plans through local leaders leading to a high level of responsibility at a local site level for their contribution to regional success (Martinsons 2004).
- Focusing on the building of personal relationships over and above work, over a period of time.
- Building a sense of belonging to an international community, being a respected member, providing symbols of membership (t-shirts, pens, photos on international web sites), and using meetings to engender a sense of belonging.

Had ChemOne's consolidation project been in Europe, where individualism scores high as a cultural dimension and long term thinking relatively low, a very different emphasis would appear to have been needed.

Table 1: Differences between Norsk Hydro and the ChemOne Asia Pacific case

Area	Norsk Hydro HAE	ChemOne
Geographical Location	Pan-Europe	Asia Pacific
Basis of Strategy	HO driven global IT approach	HO driven regional IT approach
Leadership	HO Brussels based management team and project team	HO US based sponsor, high level mgmt team and infrastructure mgmt team. Regional based project implementation team
Implementation Team	Full time, extent of previous experience in the region or with the other companies unknown	Most part time. Many had worked on earlier ERP implementations in the region. Same project sponsor and project leader as on previous ERP projects in the region and know as business and IT leaders in the region.
Infrastructure	Data processing and local network support contracted out to third party.	Data processing all done in house. Infrastructure support led by HO but also provided locally in-house. Local network support by local in-house regional team supported by HO expertise.
Implementation support	Appears to be at least partially contracted out to consulting company with some loss of continuity	Entirely supported by in-house consultants, some from HO, some drawn from previous implementations, a mix of IS and business support.

Whilst ChemOne had some success with these strategies, Zhang et al. (2003) who researched factors influencing ERP implementation success in China (amongst Chinese companies), concluded that overall Chinese organisational culture has a negative impact on local ERP implementation success. In Zhang et al's study it is acknowledged that in most cases Chinese companies were buying ERP applications from foreign vendors. If it is accepted that ERP applications are loaded with cultural values (Boersma & Kingma 2005) then it is not so surprising that local project teams in China have a poor implementation success rate. A different situation may exist when a US based company located in China is driving the implementation using internationally sourced staff in conjunction with a local project team, as was the case of ChemOne. In such a case Fulk et al's (Fulk, Schimitz & Steinfield 1990) social influence model of technology use may further explain ChemOne's results.

Validity of Learning

The validity of the learning from action research studies such as this has already been justified. Whilst the ChemOne experience, with all its complexity cannot be replicated today as such, it was replicated at the time within the organisation. Also to be considered according to Checkland and Howell (2007) is recoverability by interested outsiders drawing on the ideas and processes that were used. A further research project to undertake such a study is now being planned, and is hoped will lead to more learning about the contributors to the achieved outcomes. It is recognised that the initial learning as outlined here is based on a deliberate process of reflective learning within a series of iterations of the implementation and integration process as advocated by Boud, (1993), Checkland and Howells (2007) and Argyris (1985)

Conclusion

The motivation to implement the acquiring business's ERP system across all acquired businesses can be expressed in terms of enabling global competitiveness, with benefits to both acquirer and acquired. The ERP application itself is very much more than a configured database with integrated work processes. It embodies work practices, policies, cultures, values, principles and beliefs. The implementation process can involve a deep-rooted re-configuration of how a business runs, leading to changes in roles and responsibilities aligned with those of the acquiring or consolidating company. When the implementation project team comprises members from Head Office and other parts of the business, working with a local team on site or virtually, the joint project

can be used as a vehicle for building relationships between people in the different businesses, to implant the HO culture into the acquired businesses, to provide career opportunities for people actively involved in the projects, and as a testing and development ground for innovative communication technologies and practices. These practices can then themselves become an important vehicle to help the integration of the acquired business. As a whole it would seem that ERP implementation can play an important role in post acquisition business integration. ChemOne's success in the Asia Pacific region shows that ERP implementation can be a powerful contributor to integrating a newly acquired business or consolidating existing businesses. Implementation strategies can be designed to promote integration and may be more effective if they take the cultural dimensions of the acquired business into account.

Methodological limitations preclude the drawing of firm conclusions. Nevertheless ERP based business consolidations in Asia Pacific may, if due consideration is given to the predominant cultural values in each region, be more likely to be successful, however more research is needed to validate such a claim.

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