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GOVERNING AND MANAGING ENTERPRISE SYSTEMS INTEGRATION IN CORPORATE M&A

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Abstract

Corporate mergers and acquisitions (M&A) have established themselves as prominent tools for corporate strategy. Consequently more and more organizations direct their attention towards the potential benefits of an M&A and the problems of leveraging these potentials. Governing and managing enterprise systems (ES) integration in M&A means understanding how ES integration relates to the M&A context and act upon the environmental pressure on the integration solution. We present a six dimensional framework for ES integration in corporate M&A by integrating previous research on M&A and ES integration. We also present and discuss the ES integration in a corporate M&A: The Trelleborg AB's acquisition of CMP/Kléber Industrie. Trough the combination of the framework's dimensions, the dynamics of different parts of the M&A process is captured. We suggest that the framework may be used in further research to build cumulative knowledge about how to govern and manage ES integration in M&A. We also suggest that the framework can be used by firms in their acquisitions as it shows, through the combination of dimensions, ES integration issues, decisions, and actions a firm has to consider in acquisition processes.

Keywords: Enterprise Systems, Integration, IT management, Mergers and Acquisitions, IT governance.

1   INTRODUCTION

Acquisitions of companies of varying size have become a prominent part of Trelleborg AB's corporate strategy. During the last ten years, more than 50 acquisitions have been carried through, and for the future it is expected that the industry group will continue its acquisitions with a pace of 5-10 acquisitions yearly. The act of acquisition has turned out to be a difficult and risky process. Not only because of difficulties predicting which synergetic effects that could logically be possible while joining two organizational units, but also since potential synergies have proven difficult to leverage in reality. As a part in the revealing of synergetic potential Trelleborg has experienced that enterprise systems (ES) integration plays a significant role. The organizational integration cannot be effectuated without successfully integrating the units ES.

The problems faced by Trelleborg should not be unique in their kind. The act of acquisition has during the last decade become a prominent tool for corporate strategy worldwide (Sirower 2003). In 2004 the total number of mergers and acquisitions (M&As) reached 33 500 operations (9 000 involving EU targets and 9 100 US), purchase price of 1 900 billion euros (EC 2005). That sum amounts to some 25% of US GDP, just as a comparison. Consequently more and more organizations direct their attention towards the potential benefits of an M&A and the problems of leveraging these potentials. In this action ES and ES integration have been found having a significant role (Giacomazzi et al. 1997; McKiernan & Merali 1995; Stylianou et al. 1996).

A substantial body of literature exist that treats different aspects of the M&A act and ES integration. However, research that takes a more comprehensive view on the managerial considerations in the whole M&A process is still in its formative stages. Such a view is needed to capture the dynamics between different parts of the ES integration process and to explain how different aspects of the integration mutually affect each others.

The purpose of this article is twofold. First, based on a literature review, develop a framework for ES integration in corporate M&As by integrating previous research on M&As and ES integration. Second, use the framework to present and discuss the ES integration in a corporate M&A: The Trelleborg AB's acquisition of CMP/Kléber Industrie. The developed framework can be used to study ES integration in corporate M&As as by using the framework comparative studies can be done and cumulative knowledge can be developed. The framework can also be used by firms in their acquisitions as it shows through the combination of dimensions ES integration issues, decisions, and actions a firm has to consider in acquisition processes.

The case in the article is based on a study where we and the Swedish industry group Trelleborg AB jointly studied Trelleborg's acquisition and integration of a French industrial unit from the Michelin group. Empirical data was gathered through a dozen interviews with managers and informed key employees and on-spot observations. Interviews and observations were based on and guided by the framework presented later in this article and the case serves as an exemplification of the framework's application. The study covers the acquisition and integration work during a ten year period from management perspective on ES, beginning with the initiation of the deal in 1996 until 2005, when integration has reached a stable level.

The article is organized as follows: this first introduction has given the background for focusing ES integration in corporate M&As. The following section presents a framework for studying ES integration in M&A. It is followed by the case study: the acquisition of Kléber Industries by Trelleborg AB and related ES integration. Based on the study, the final section presents and discusses the potential application of the framework and suggests improvements. It also suggests future research needs in order to establish the framework as a comprehensive and reliable view of managerial questions of ES integration in M&As.

2 RESEARCH ON M&A AND ES: SIX DIMENSIONS FOR DESCRIBING ES INTEGRATION IN M&A

Most observers agree that M&As are loosely defined processes that are driven by a complex pattern of motives, and no single approach can render a full account (Trautwein 1990). As the M&A act has become an increasingly more frequent action in the business community, research on the topic has increased. Through the years, the stack of related literature has grown steady, addressing the phenomenon in terms of, for example, strategic potential, organizational fit, cultural match, human reactions, financial fit and also, but to less extent, in terms of ES and ES integration. The ES pile already includes frameworks for evaluating IS success in M&A (Alaranta 2005; Kumar et al. 2002), assessing IT integration decisions (Mehta & Hirschheim 2004), and ERP implementations in relation to mergers (Alaranta 2005). However, these frameworks are either specifically limited to one theoretical perspective and/or limited to one of many managerial aspects of ES integration in M&A.

The above mentioned frameworks, additional literature on ES in M&A (e.g. Buck-Lew et al. 1992; Giacomazzi et al. 1997; Hwang 2004; McKiernan & Merali 1995; Robbins & Stylianou 1999; Stylianou et al. 1996) and supplementary investigation of related publications suggest there are six emerging research streams that address different aspects of ES integration in M&A expressesing managerial issues that have to be considered during the M&A process. These six streams are *synergetic potential, degree of integration, integration architecture, ES type, intention and reaction,* and *ES integration role*. In the following paragraphs their characteristics as dimensions in a descriptive framework for ES integration in M&A and their supporting literature are discussed.

2.1 Dimension A: Synergetic potential

The concept of synergy is fundamental to understanding the rational reasons to why corporations participate in merger activities, as synergies in this context are defined as what is occurring when two units can be run more efficiently and/or more effectively together than apart (Lubatkin 1983). The literature describes three basic types of synergies as possible outcomes of mergers: *technical economies, pecuniary economies* and *diversification economies* (Lubatkin 1983). Technical economies are scale economies that occur when the physical processes inside the firm are altered so that the same amounts of inputs produce a higher quantity of output, or the same quantity of output is produced using fever resources. Pecuniary economies correspond to the firm's capability to dictate market prices by making use of market power achieved primarily by size. Finally, diversification economies are achieved by improving the firm's performance relative to its risk attributes, meaning to spread risk among unrelated markets and products trough a strategic product portfolio (Lubatkin 1983).

M&A typologies based on strategic fit have the synergetic potential as common point of reference (e.g. Federal Trade Commission 1975; Larsson 1990). The American Federal Trade Commission (1975) suggested a classification scheme for acquisitions that has been a common starting point for many strategy researchers (Risberg 1999). The scheme classifies M&A into *horizontal, vertical, product extension, market extension,* and *conglomerate categories*. In horizontal mergers the two involved organizations produce one or more closely related products or services to the same market (Buono & Bowditch 1989). The rationale behind this kind of M&A is mostly related to technical economies (Lubatkin 1983). Vertical M&As are also driven by technical economies and a desire to reduce uncertainties in the corporation's environment (Lubatkin 1983). In these M&As, the two involved parts have potential buyer-seller relationship (Buono & Bowditch 1989). M&As of the product extension category means the combination of two corporations that have related, but not directly competing products (Buono & Bowditch 1989). Potential synergies are found in overhead costs, distribution and marketing (Lubatkin 1983). The last category of M&A is the unrelated category, referred to as conglomerate M&A, a category in which motivation normally are related to financial synergies and risk reduction.

2.2   Dimension B: Degree of integration

To actually leverage the synergetic potential of an M&A the two organizations must be integrated in some way (unless it is an unrelated M&A). Haspeslagh and Jemison (1991) found in their studies that the transformation in an M&A could be sorted into four categories: *holding, preservation, symbiosis,* and *absorption*. The two dimensions in Figure 0, *strategic interdependence* and *organizational autonomy*, were found being the two most important drivers for deciding integration approach in a study by the two researchers. Holding represent an approach where the acquired unit was left undisturbed. Preservation includes partial integration of the new entity. Symbiosis refers to a situation where acquirer and acquired (or the entities in a merger) was equally transformed to fit each other. Finally, absorption was the complete incorporation of an acquired unit into the acquiring organization. As the general organizational integration sets the context for related ES integration the first dimension of the framework should be the M&A integration typology by Haspeslagh and Jemison (1991).
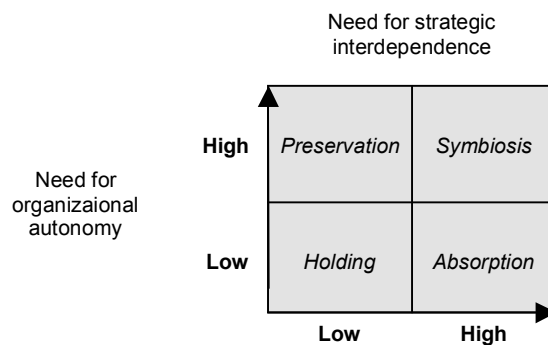
Figure 0. Integration typology based on integration degree. (Haspeslagh & Jemison 1991, p. 145)

2.3   Dimension C: Integration architecture

There is not one single way to carry out IT integration. Figure 0 depicts three alternatives. The first solution is a point-to-point alternative, where a software bridge, also known as interface, connects two applications directly to each other. Data from one application, A, is more or less automatically transferred to another application, B. If there is a need to integrate a third application, C, two new interfaces have to be built connecting A and B respectively. If a forth application needs to communicate with the three others, three new interfaces need to be created, and so on… It is easy to imagine the complexity of such a system if many entities need to communicate with each other.
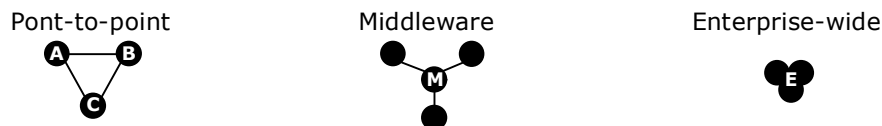
Figure 0. Three approaches to IT-integration (Markus 2000).

To decrease complexity, an approach that uses an intermediate layer between applications and databases called middleware can be used. Applications are modified to call the middleware, M, instead of calling each other directly. The middleware in turn calls targeted applications or databases. As a consequence each unit only needs two interfaces, one outgoing and one ingoing, to the middleware.

The third alternative is to adopt an enterprise-wide system, E, often referred to as enterprise system or ERP (enterprise resource planning) system (Markus 2000). In these systems the different applications employ a shared database. The result is that all applications' data is updated simultaneously, since they

actually are using the same data. Although real-world settings usually consist of combinations, these idealized architectures enables a descriptive analysis of the architectural solution chosen in an integration attempt.

2.4   Dimension D: ES type

It has been noticed several times that the IT artifact in itself is so complex and differentiated that also the nature of the IT artifact must considered when discussing managerial and organizational aspects of IT (e.g. Orlikowski & Iacono 2001). When it comes to ES it has been recognized that the term ES may refer to a number of fundamentally different systems that all need to be considered individually. Just as acquisitions and acquisitions were argued fundamentally different from each others, different types of ES and different parts of one ES are affected differently and have different effect on the M&A. Instead of focusing on the systems' technology, we argue, drawing on Weill and Broadbent (1998), that a differentiation founded on the systems function is more appropriate when it is not the technology itself, but its possibility to contribute to the business of the organization (in this case to complete the integration), that should consist the foundation of an ES. Weill and Broadbent (1998) divides ES into *Infrastructure*, *Transaction*, *Information*, and *Security* ES. Infrastructural ES is basic technology that consist the information road network. Servers, cables, software that permits information flow. Within the category of Transaction ES is, for example, sales systems and book keeping software included. Transaction refers to business transactions. A decision support system serving managers with information on sales figures or customer satisfaction is an Information ES. Finally, Security ES are hardware, software and processes created to protect other ES from abuse.

2.5   Dimension E: Intention and reactions

Content oriented research (c.f. Mohr 1982) dominates both the M&A and ES fields and consequently the theoretical foundation for defining process oriented dimensions is more limited. One M&A typology that recognizes that M&A integration does not always follow the same pattern is the Hostility-Friendliness continuum, originally developed by Pritchet (1985). One extreme of the continuum is labelled "Friendly" and the other extreme is labelled "Hostile" (Figure 0). The friendliest form of acquisition is the *organizational rescue*. Generally, this type of M&A is well perceived by the target. The next degree of M&A friendliness is a *collaboration*. This is to the nature more of a neutral merger than an acquisition. The objective is to reach a fair deal for both companies, but some of the problems that arise are related to the way in which the combination is communicated to personnel and the inability to follow up on hasty promises (Buono & Bowditch 1989). In *contested combinations* only one of the companies wants the deal, or the companies would prefer completely different arrangements (Buono & Bowditch 1989). Finally, *raids* are the most hostile type of M&A (Buono & Bowditch 1989). During raids, one company takes over another by bypassing management and directly asking shareholders to sell their shares (Buono & Bowditch 1989).
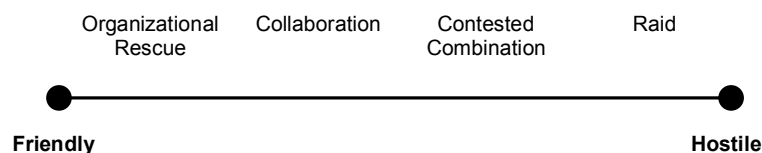

Figure 0. Friendliness - Hostility Continuum. Adapted from Buono and Bowditch (1989), based on Pritchett (1985).

2.6   Dimension F: ES integration role

Although many authors regard integration as a post-M&A issue, processes that are meant to end in integrated organizations can be traced back to well before the M&A deal is closed. McKiernan and

Merali (1995) argue that an important distinction to understand ES integration in M&A is whether ES integration is a post-M&A issue, dealt with reactively, or an early issue on the agenda, used proactively to maximize chances for positive outcome. McKiernan and Merali (1995) argue that currently ES integration is by managers considered as a post-M&A issue, dealt with reactively. However, according to the authors it should be an early issue on the agenda, used proactively to maximize chances for positive outcome

2.7 The complete framework

The complete framework is presented in Figure 0. In the very centre is the ES integration in M&A surrounded by the six dimensions that are useful to classify, describe, understand, and act upon an M&A process. All integration activities have at least one value in each dimension, but larger projects naturally span over many of the attributes.

Above are described the internal sides of the dimension, but the literature also suggest a number of relationships between the dimensions:
   a. *Synergetic potential – Degree of integration*: The degree and mode of integration should be dependent on synergies expected as higher levels of integration is resource demanding (Haspeslagh & Jemison 1991).
   b. *Synergetic potential – ES integration role*: A proactive use of ES integration enables more accurate synergy estimation and possibly identification of supplementary synergies (McKiernan & Merali 1995).
   c. *Degree of integration – Intention and reactions*: Resistance among employees may cause integration problems (Buono & Bowditch 1989).
   d. *Integration architecture – ES type*: If the ES is business critical then integrating with point-to-point or middleware could be preferred in favour of an enterprise wide system (Markus 2000).
   e. *Integration architecture – ES integration role*: A reactive approach is likely to transform existing system rather than replacing them (McKiernan & Merali 1995).

Recognizing the individual value of each dimension and additionally the combined potential to illuminate dynamics and relationships between different aspects of ES integration in M&A, we suggest that the framework may be used for several purposes including:

Describe how different key aspects of M&As and ES integration are related and how they mutually affect each other leading to a final outcome.

Describe and understand how initial conditions and the integration process management jointly create the integration solution.

Understand both how a specific integration-related work task fits into a greater context as well as the nature and complexity of a comprehensive integration project.

Conduct comparable case-studies that take into account the same aspects of several cases and enables accumulation of knowledge on M&As.

Focus attention of researchers and firms involved in M&A on the process' key aspects.

Facilitate for firms to realize ES integration issues, decisions, and actions a firm has to consider in acquisition processes

3   MANAGING ES INTEGRATION AT TRELLEBORG AB

Trelleborg AB is a global industry group with some 22 000 employees in about 30 countries. Annual sales are of approximately $3 billion. The head office is still located in the small city Trelleborg, in the very south of Sweden. The corporation is focused towards processed polymer materials: "*Based on its extensive knowledge of polymer technology, markets and customers, Trelleborg develops, manufactures and markets functionally oriented products, systems and services.*" (Trelleborg 2003, p. 3). During the latter part of the 1990s, the corporation was restructured and a new corporate strategy
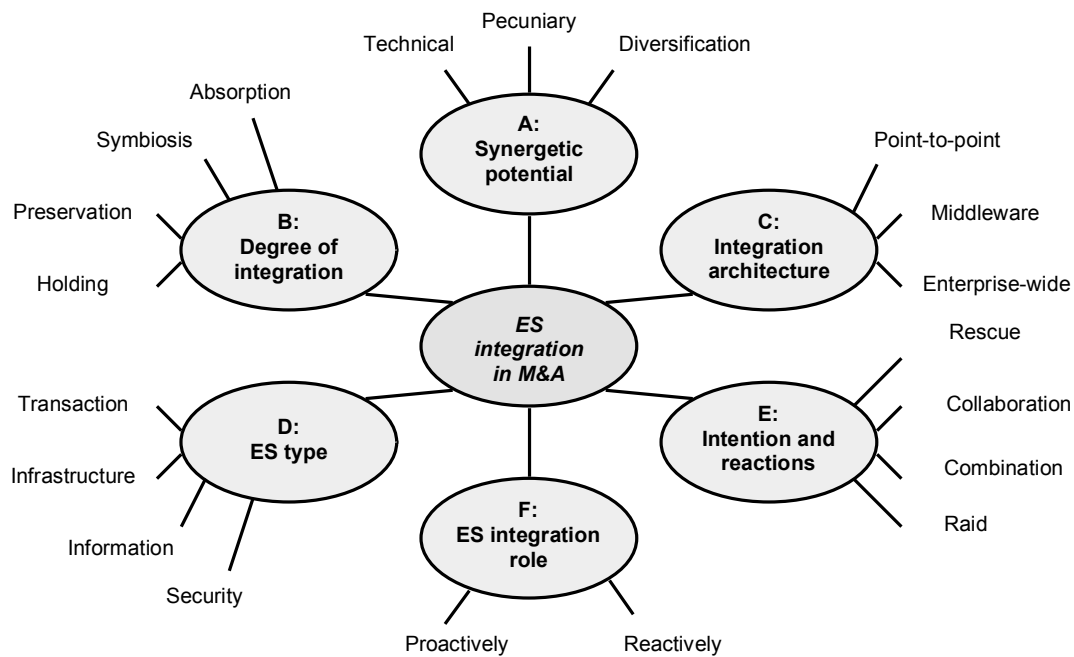
Figure 0. A framework for ES integration in M&A

was developed. The strategy adopted was termed "concentration and expansion". Divestment of operations considered non-core created a strong financial position. "Expansion" meant that the Group would utilize substantial amounts of its financial resources for external growth. As one consistuent part in the new strategy Trelleborg AB purchased CMP/Kléber Industrie from the international French Michelin group in 1996. The acquisition will in this section be presented using the framework introduced in the last section.

3.1 Dimension A: Synergetic potential – *Technical economies*

The two companies were potential competitors although not present at the same markets, meaning that the M&A was primarily a market extension. However, whereas Trelleborg had a strong market position in the Scandinavian countries, but weak in the rest of Europe, CMP/Kléber Industrie had a strong position in France, Italy and Southern Europe. It was expected that some of the two companies products that where direct competitive products would be produced jointly, thereby enabling larger volumes, enabling lower production prices per unit (economies of scale). For those products that were not direct substitute products, it was estimated that the acquisition would open up new markets and thus generate greater sales.

3.2 Dimension B: Degree of integration – *Symbiosis*

Haspeslagh and Jemison (1991) proposed a differentiation of integration in M&A into four categories: holding, preservation, symbiosis, and absorption. Regarding the initial post-acquisition strategy plans, the objective at Trelleborg was to make an absorption but the final outcome would turn out to be a symbiosis. To leverage these synergetic effects, the two independent units needed to be integrated and it was decided to create a new unit within the Trelleborg group consisting of the acquired CMP/Kléber Industrie and the corresponding unit from the Trelleborg group. The new business unit was named Trelleborg Industrial Hose (TIH). As Trelleborg was the acquirer, a Swedish management team was installed and Swedish business practice was introduced into the new unit. For example, it was decided that the IT systems at the old Kléber unit should be replaced by the systems used in Trelleborg. But,

although the Trelleborg group was substantially larger than the Kléber unit, the relation was the opposite within TIH. Whilst 600 persons worked at the old Kléber site at Clermont-Ferrand, only 200 worked for TIH in Trelleborg. Also, some production where transformed to Clermont-Ferrand to fully profit from the scale advantages. At the time of writing, the management team is now based in France, consisting of only originally French people. As a consequence the integration has become more oriented towards the idealized symbiosis type, rather than the absorption that was planned for. The TIH unit has partly because of the synergies created in the acquisition managed to turn red figures into profit, saving the two production sites from closure.

The change from absorption to symbiosis did have effects on how the ES were integrated. The two first years when TIH had a Swedish management integration projects were carried out by Swedish people, large product groups who tried to reach consensus in important decisions, and Swedish suppliers were most often chosen. After 1998 when the new management team was installed both the way of managing and the preferred way to do integration changed. The next dimension of the framework, the choice of integration architecture, illuminates this turnaround.

3.3 Dimension C: Integration architecture – *Enterprise wide*

The Swedish management team installed after the acquisition faced a rather complex IT infrastructure. At the Clerment-Ferrand site an ERP system developed in-house, called Bergounix, was running and in all the different countries where CMP/Kléber was represented by sales organizations were individual ERP installations found. The former Trelleborg part of the unit used the ERP systems Movex, from Intentia, in all countries, but also here every country had in reality its individual installation of the system. Decision was made to replace all Bergounix installations with Movex installations. Although these new systems would all be Movex systems, it was not one single system being implemented, but rather seven different instances. Different strategies, including both point-to-point and middleware solutions, where considered regarding how to integrate the systems. After all country managers had been questioned regarding the new systems functionality requirements consultants from Intentia along with Trelleborg employees calculated efforts needed to implement the new systems. The result was some 1000 consulting days.

The date when these cost calculations where finished was by end of 1998. At the same time a new, French, manager was hired who reorganized the management team and installed a number of new persons at key positions. Together they decided that the proposed development of a new system would be too expensive, but also too risky considering that the existing Bergounix system would not make it trough the Y2K-problem. The new management decided to modify the existing system in order to survive the millennium shift and search for other options.

At 1998 TIH continuously struggled with extensive losses and weak sales. Therefore the management team decided to reorganize its sales structure. Instead of having individual sales-companies with individual stock locations, ERP installation, book keeping etc, in each country where it was represented it was decided that only one invoicing company would exist and only three stock locations should exist. National companies were transformed to sales organizations. In order to achieve this new organizational structure, national centres needed to be fully integrated with the stock locations, production facilities and logistics departments. It was thus decided to eliminate the national ERP installations and make them use the same systems as was used in Clermont-Ferrand. At this time still the modified Bergounix system. Later on the Bergounix system was replaced by a Movex installation. The Bergounix system never became an enterprise-wide system. It was enterprise-wide in the old Kléber unit, but former Trelleborg parts were never included in that system. However, during 2005, also the old Trelleborg factory switched from one individual Movex installation to using the enterprise-wide system and 10 years after the acquisition the new unit had become integrated in terms of IT system.

The relation between the change in general integration approach, from absorption to symbiosis, and IT integration architecture is apparent, but the question is "why?". Our interviews provided insightful

information that contributes to that question being answered. While the Trelleborg group was trying to complete an absorption they were focusing other ES functionality than the new French management did. The group management did, to a higher degree than the TIH management, focus information flows vertically in the organization. On the other hand, the French TIH management had the TIH unit as primary horizon and more deeply involved in the daily business they considered to focus on the transaction ES.

3.4   Dimension D: ES type

During the 10 years that has passed since the acquisition integration efforts have been directed towards all four kinds of ES but to different extent.

Infrastructure – Very little new infrastructural ES has been developed to facilitate the integration. The transformation of national companies into sales centers demanded more communication within the organization and also more elaborated ES infrastructure. However, the IT needed to do so already existed within the Trelleborg group. From a TIH perspective, it was more or less just a matter of plug in the cables and make a phone call to achieve the communication line.

Transaction – Transaction ES has been one major integration focus. The new organization as well as the joint production where the two production units should be used more efficiently demanded more transactions between the different parts of the organization. As explained above, this was essential to leverage the synergetic potential of the deal and was solved with the enterprise-wide system. As explained above, integration of transaction ES received higher priority when managers more deeply involved in the daily business became in charge of ES integration activity.

Information – Information oriented ES was not a primary target for the integration activities that has been undertaken until now. However, some functionality came automatically with the new enterprise-wide system, for example delivery times and detailed sales figures. In addition a number of minor projects have been initiated in order to increase the visibility further, for example use of production facilities.

Security – Security ES has been integrated as a consequence of all TIH system being centralized. However, there is pressure from the Trelleborg Group to further standardize and integrate security systems in the whole group. Interestingly this is basically the only ES integration taking place between the old Kléber unit and the Trelleborg group, except from linkage with the corresponding unit explained in this article.

In 1998 it became clear which level of ES integration that was needed in order to leverage the synergetic potential of the M&A and to enable future business activities. The need of transaction ES made an integration architecture based on point-to-point or middleware too complicated. Instead the solution of an enterprise wide system was chosen.

3.5   Dimension F: Intention – *Collaboration*

Describing the acquisition process in terms of Buono and Bowditch' (1989) intention typology is somewhat difficult as the process includes elements that are typical for at least three of the categories. In 1996 the Kléber unit was struggling financially. One potential outcome of the minor crisis was a closure of the factory. Regarding the acquisition from that viewpoint, the appropriate category would be "Rescue". But what is also to known is that the financial situation was equivalent at the Trelleborg site. The discussions before the acquisition were about either divesting the unit or invest and try to make it profitable. Regarding what Buono and Bowditch (1989) say would trigger the "rescue"-reaction it is very likely that this may have affected the acquisition and post-acquisition integration process. Trelleborg was not a profitable company coming to rescue with superior knowledge on how to do the business. Rather, both companies were at same levels and needed a new strategy. Therefore,

the most appropriate category to sort the acquisition into would be to "Collaboration". However, as the two units were directly interchangeable in many aspects it was, in still is, a natural contest and rivalry between the two sites. A characteristic that is typical for the category of "Contested Combination".

This natural rivalry between the two units has been prevalent in all ES integration projects and thus has become a management challenge. The intention is related to all of the prior dimensions. To integration, A1, as the turn from rescue to collaboration is parallel to the change from absorption to symbiosis. Further, the collaboration is reflected in the choice of IT integration architecture and the priority shift in ES functionality.

3.6 Dimension F: ES integration role – *Reactively*

The second process oriented dimension is adapted from McKiernan and Merali (1995). The authors argue that an important distinction to understand ES integration in M&A is whether ES integration is a post-M&A issue, dealt with reactively, or an early issue on the agenda, used proactively to maximize chances for positive outcome. McKiernan and Merali (1995) suggested that ES integration should be used proactively rather than reactively in acquisitions, meaning that it should be a pre-acquisition issue rather than a post-acquisition issue. In the TIH case there is no doubt ES integration was a post-acquisition concern. Which also lead to some problems directly after the acquisition when the management had some difficulties finding the right integration mode. However, in this case it did not turn out to be a deal-breaker that should had stopped the process, but it easy to see that the integration could had been smother if the units would had been better prepared. As example, TIH recently made a new acquisition itself, acquiring the small hi-tech company Dynaflex. The integration of this unit became very smooth as only a few adjustments had to be made in order to include the Dynaflex unit into the enterprise wide system. The old Dynaflex site at Orleans, France, is now a third production unit within the system. If Trelleborg at the time of 1996 would have had a similar system it would had been easier to include the new factory and new sales offices in the existing system.

As the role of ES integration has been reactive the ES integration efforts have changed along with the other dimensions. As the management changed, so did also the desired ES integration. The integration objective has evolved to support business objectives, for example the above described rationalization of national companies to sales organizations. Today, ES integration has a more active role which permits acquisition of more absorption nature, such as the acquisition of Dynaflex.

4 CONCLUSION, TRENDS AND GUIDELINES

In this article we developed a framework for ES integration in M&A. The framework was used to describe and explain an ES integration in a large firm. Using the framework we explained how a number of characteristics were related to each other and mutually affected the development of the integration process and the final integration outcome. It was shown that no single approach can in itself give a complete explanation to the development, but by combining existing models into a comprehensive framework most aspects of the integration may be explained. The framework has a managerial focus and has both a content and process focus. Although, the framework was used to describe an integration process we think the framework can also be used to help managers involved in ES integration in M&A. It will help mangers focus critical issues and gives alternative ways to address issues and problems.

By integrating the framework's dimensions we were able to dicern six suggested dependencies that later were confirmed in the empirical case:

    a. *Synergetic potential – Degree of integration*: The degree and mode of integration should be dependent on synergies expected as higher levels of integration is resource demanding (Haspeslagh & Jemison 1991).

b. *Synergetic potential – ES integration role*: A proactive use of ES integration enables more accurate synergy estimation and possibly identification of supplementary synergies (McKiernan & Merali 1995).
    c. *Degree of integration – Intention and reactions*: Resistance among employees may cause integration problems (Buono & Bowditch 1989).
    d. *Integration architecture – ES type*: If the ES is business critical then integrating with point-to-point or middleware could be preferred in favour of an enterprise wide system (Markus 2000).
    e. *Integration architecture – ES integration role*: A reactive approach is likely to transform existing system rather than replacing them (McKiernan & Merali 1995).

In addition the case suggests that there are further four relationships:
    f. *Degree of integration – Integration architecture*: Higher degrees of integration were not efficient to undertake with middleware architecture.
    g. *Degree of integration – ES type*: The symbiosis approach favoured other functionality than the absorption strategy.
    h. *Degree of integration – ES role*: Proactive use of integration enabled smooth absorption.
    i. *Intention and reaction – ES type*: Collaborating resulted in a different functionality focus.

A number of trends related to ES integration in M&A are worth noting. First is the development of different types of process standards. Process standards are developed in different industries. One example is the work of the Supply-Chain Council, which is developing the Supply-Chain Operations Reference (SCOR) model. SCOR "lays out a top-level supply chain process in five key steps: plan, source, make, deliver, and return." (Davenport 2005). The ERP-company SAP has begun to include SCOR flows and metrics in its supply chain software packages. Another approach is the The MIT Process Handbook Project (Malone et al. 2003). The project involved collecting examples of how organizations perform similar processes. The process on-line repository includes knowledge about over 5000 business processes and activities as well as tools to edit and view this knowledge repository (http://ccs.mit.edu/ph/). The Handbook has been used by, for example, Dow Corning Corporation in a major SAP implementation and project supply chain management project (Phios 1999). Yet another approach is the enterprise engineering/integration and the framework Generalised Enterprise Reference Architecture and Methodology (GERAM), which is a generalized framework for describing the components needed in all types of enterprise engineering and enterprise integration processes (Bernus & Nemes 2003) (see, also, http://www.cit.gu.edu.au/~bernus/taskforce/geram/versions/). These three examples and similar approaches of development of process knowledge and standards are likely to make ES integration easier.

Another trend that will affect ES integration in M&A as well as ES integration in general is the development and increased use of Web services, Service Oriented Architecture (SOA), Enterprise Application Integration (EAI) and Enterprise Service Bus (ESB). These developments, as well as other, will from a technical view make integration and de-integration easier to accomplish and also make new integrations possible. Still, the managerial issues in the presented framework will be the same.

Future research is needed on the suggested framework. This includes using the framework in actual ES integration in M&A processes. Further test of the validity of the framework is also needed.

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