Implementing an integrated system in a socially dis-integrated enterprise
A critical view of ERP enabled integration

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Abstract

Purpose – Organisational integration has been presented as a key imminent outcome of implementing ERP systems. This study aims to examine critically this notion of integration by focusing on the role of the social fabric of the organisation in the implementation of ERP systems and, in particular, its integration capability.

Design/methodology/approach – This study examines the case of a successful ERP implementation in a large international organisation through the analytical lens of actor network theory and the introduction of the concept of "organisational othering".

Findings – The study argues that the institutionalised marginalisation of some business units within the organisation created a highly political and largely dis-integrated social context for the ERP implementation, which contrasts with the system logic of integration, transparency, and coordination. It reveals that this organisational practice of dis-integration can be reproduced and inscribed in the implemented ERP system, thereby hindering the realisation of its integration capability.

Originality/value – The research contributes to the emerging critical studies of ERP systems and the ongoing discussion on IS implementation politics and intra-group conflict by suggesting that configuring integrated systems such as ERP in such a context requires careful consideration and delicate management in order to achieve a workable version of integration that is socially and organisationally acceptable.

Keywords Manufacturing resource planning, Integration, Organizational politics, Internal conflict

Paper type Case study

Introduction

The implementation of enterprise resource planning (ERP) systems has gained increasing attention. Companies have invested substantially to implement such systems, in what has been one of the largest areas of IT investment for many organisations (Sumner, 2000). There is extensive evidence to show that companies experience considerable problems in the implementation of such systems (Parr *et al.*, 1999), in what has been described as a "critical mission" (Davenport, 2000) equivalent to "the journey of a prisoner escaping from an island prison" (Ross and Vitale, 2000).

ERP implementation is affected by technical as well as social and organisational aspects (Boudreau and Robey, 2005; Vogt, 2002; Dong, 2000; Krumbholz *et al.*, 2000;

Markus and Tanis, 2000; Holland *et al.*, 1999). Although academics and practitioners agree that the major "hurdle" of ERP implementation is social and organisational (Cadili and Whitley, 2005; Markus *et al.*, 2000b; Mendel, 1999; Norris *et al.*, 1998). Studies on the social construction of ERP have rarely focused in a consistent way on investigating specific capabilities or features of the system. This problem is shared by many IS studies, leading Orlikowski and Iacono (2001) to urge IS researchers to engage "more seriously and more explicitly with the material and cultural presence of the information technology artifacts" and to pay substantial attention to the explicit consideration of the specifics of the IT artifacts under study (Orlikowski and Iacono, 2001). This study responds to this call by considering the ERP capability of integration and by critically reviewing its materialisation into the buyer's organisation. It adopts a broad critical framework based on actor network theory (ANT) and the introduction of the concept of "organisational othering".

The research draws on a single case study of a successful multinational ERP implementation in a large international organisation (Yin, 2003). It unravels some of the social aspects critical to the implementation of the integration capability of ERP systems and reveals the constant efforts required to resolve the contradiction and tension between the package-inscribed notion of "integration" and the organisationally embedded "social logic" of dis-integration.

The remainder of this paper is structured as follows. Section two reviews the literature on ERP integration and provides a working definition of social integration. Section three outlines the theory and concepts that informed the research, briefly reviewing ANT (particularly the notion of "translation") and developing and introducing the new concept of "organisational othering". Section four reports on the research setting and methodology. Section five provides an analytical reading of the case study details, followed by a discussion of the findings. Section six presents the conclusion and the implications of the findings for research and practice.

ERP integration

ERP systems are complex packaged software that identify integration as the major issue of corporate governance and emphasise it as one of the package's core capabilities (Kallinikos, 2002). These packages are composed of several modules, such as human resources, sales, finance, and production, which are interconnected to provide cross-organisational integration of data and business processes (Esteves and Pastor, 2001). They are believed to seamlessly transform the organisation into a monolithic integrated business entity (Clemmons and Simon, 2001) and to bridge traditionally separated organisational functions and geographically dispersed locations (Davenport, 1998, 2000; Norris *et al.*, 1998).

Mainstream ERP studies view the enterprise integration enabled by ERP systems as an inevitable outcome (Escalee and Cottleleer, 1999; Gupta and Kohli, 2006; Grant *et al.*, 2006a), but very few researchers have reviewed this notion critically. Lee and Myers (2004) reveal through a case study of ERP implementation how the integration enabled by ERP was subject to leadership understanding of the meaning and purpose of integration. This resulted in fluctuations of enterprise integration, moving between integration and dis-integration with each leadership change (Lee and Myers, 2004). Along the same lines, Rowe *et al.* (2005) suggest that corporate vision plays a role in achieving a strong cross-functional perspective of the firm (Rowe *et al.*, 2005).

Furthermore, Light and Wagner (2006) suggest that integration could also be achieved through a combination of the package standard procedures and local customisations (Light and Wagner, 2006). However thoughtful such studies may be, the little research conducted on ERP integration has not considered the people involved: the social actors within the organisation who are implementing and being addressed by the ERP integration capability, their willingness and ability to join other organisational groups into one system, and how this could be achieved socially.

Research is therefore still needed to investigate the social aspects of ERP integration and to question the assumption that an ERP system will straightforwardly integrate an organisation through shared information and data flows (Shanks and Seddon, 2000). This study does this by examining the assumption of ERP's organisational integration capability by focusing on the social actors addressed and involved in the implementation of an integrated ERP system. In order to do this, a clear working definition of integration needs to be established.

Previous studies identified two facets of enterprise integration, recognised here as:

(1) technical; and

(2) operational.

Technical integration concerns the operability and technical characters of software and hardware (Themistocleous *et al.*, 2001). There is interesting research addressing from a technical view the problematic integrative character of ERP systems, including studies that focus on the integration between ERP and other disparate systems that coexist with it (Themistocleous *et al.*, 2001; Alshawi *et al.*, 2004). Markus (2000) provides a good departure point to define the operational integration by identifying "business integration" as "the creation of tighter coordination among the discrete business activities conducted by different individuals, work groups, or organisations, so that a unified business process is formed" (Markus, 2000).

Operational integration deals with the streamlining and amalgamation of business activities and processes. It means the integration of inter-organisational processes, including synchronising business functions and streamlining organisational activities and business processes (Hasselbring, 2000). Such operational integration could be achieved through business engineering "whereby business process cut horizontally through the traditional organisational structure" (Hasselbring, 2000). In this regard, ERP systems require re-engineering the organisation around business processes in order to have clearly defined end-to-end processes supported by the system.

This study suggests a third facet of enterprise integration, identified as social integration. Social integration deals with the coordination and conduct of these integrated activities and processes by individuals, work groups, and organisations. Social integration, as presented in this study, represents the ability and willingness of different individuals, work groups, business units, or organisations to work together in order to develop, establish, and carry out operationally integrated processes, and to be part of the same integrated organisation technically supported by the ERP system. The study maintains that all facets of enterprise integration are interrelated and cannot be clearly separated as boundaries between them are subject to negotiations (Law and Callon, 1992; Bloomfield and Vurdubakis, 1994). Indeed, they could all be gathered under the socio-technical label. The anatomy of enterprise integration sought in this study aims to closely zoom into the phenomena and provide a passage for the following sections.

Theoretical framework

This study applies a critical framework to help disrupt the taken-for-granted assumption that ERP has the integrative power to transform the organisation into a united whole. ANT is applied in this study because it is recognised as a useful framework for de-familiarising the taken-for-granted (Doolin and Lowe, 2002; Calas and Smircich, 1999). It is supported by the development of the notion of "organisational othering", which is argued to be implicitly embedded in the ANT conceptualisation of networks.

Actor network theory

Actor network theory (ANT) has been developed in the field of science and technology studies (STS) through the collaborative work of many scholars (Bijker and Law, 1997; Law, 1992a; Latour, 1987). It is engaged with unravelling the way societies come to accomplish certain goals (Latour, 1988) and maintains a distinct view of society, which it sees as a network of human and non-human actors. Since the social is nothing but chains of associations between human and non-human actors, the theory keeps an analytically symmetrical view of both the human and non-human social constituents.

ANT gained considerable attention in the IS field, and many IS scholars have applied it in their work (Hanseth, 2005; Monteiro, 2004; Hanseth *et al.*, 2004; Walsham, 2001; Monteiro, 2000a, b; Bloomfield *et al.*, 1997; Scott and Wagner, 2003). It views technology as a product of active negotiation and network building, where society actively *inscribes* on the technology certain "programme of actions" (Monterio, 2000a, b). It also sees technology as holding society together and rendering it durable and relatively irreversible (Latour, 1991).

Translation is the dynamic by which an actor recruits others into its project. This is a continuous process and "never a complete accomplishment" (Callon, 1986). By and large, it describes how actors are bent, enrolled, enlisted, mobilised in any of the other actors' plots (Latour, 1999). The word "translation" keeps its linguistic sense, meaning that one version translates every other (Latour, 1987, p. 121). However, it does not mean a shift from one vocabulary to another but "it means displacement, drift, invention, mediation, the creation of a link that did not exist before and that to some degree modifies two elements or agents" (Latour, 1999, p. 179). It also has the "geometric meaning" of moving from one place to the other. Translating interests means at the same time offering new interpretations of these interests and channelling people in different directions (Latour, 1987, p. 117). The translation or recruitment of entities towards a certain network could take place through implementing several strategies. All would lead the actors, whatever they do and whatever they are interested in, to help the network builders to pursue their interests.

Each network consists of a number of actors and intermediaries. At the same time, a network could be collapsed to represent a node in a wider network. Hence, an actor is not only a member of his own "local" network, but his network is also part of a wider "global" network. "Intermediaries" define the relationship between the local and global networks.

The network in ANT does not have inertia, as it holds only as a result of the network builders' constant efforts to keep the involved actors translated and committed to pursue the builders' goals. In principle, the network could be reversed if a

more powerful opposing translation emerges that diverts the actors from their previous network to another course (Callon, 1986).

Organisational othering

The notion of "othering" is implicitly embedded in ANT, as the theory stresses differences and the creation of distinctions between "them" and "us" in the attempts to translate and recruit actors into certain network and the associated attempts to distance or weaken their relationships with other networks. Othering is part of the competition between networks that is needed to create sustainable boundaries, space and distance between the actors and other networks.

The notion of othering is adopted from anthropology and politics. It was developed to understand how colonisers exercise power over the colonised by naming, labelling, stereotyping, and generally "othering" its subjects in order to "divide and rule". The colonial ruler produces the colonised as a fixed reality that is at once an "other" and yet entirely knowable and visible (Bhabha, 1986).

Othering, then, refers to the articulation of differences: the exclusion, labelling, naming, punctualising, and black boxing of some groups in order to marginalise them. Othering and differing also serve as a tool by which the identity of a group is assured against other groups. So, by othering and focusing on the differences between "us" and "them", a group stresses its identity, creating "symbolic boundaries" around it to keep it pure and to keep away intruders, foreigners, and all kinds of others (Hall, 1997).

In these ways, others are identified and "outsided", as they are different from "oneself". Hall (1997) argues that, from many different directions and within many different disciplines, the question of difference and "otherness" plays an increasingly important role. He explains that "difference" is "ambivalent" because it can play both positive and negative roles. It is important for the production of meaning, the formation of language and culture, for social identities and a subjective sense of the self. At the same time, it is threatening: a site of danger, of negative feelings, of splitting, hostility, and aggression towards the "other".

"Organisation othering" is the corporate labelling, stereotyping and categorisation of some groups within the organisation. This fixed perception, which labels and stereotypes others, is carved out and institutionalised over time. It is often employed by self-perceived powerful groups as a means of differentiating and facilitating their acting upon others, mainly to stress the identity of the powerful group over "others" (Beall, 1997). It is a kind of encapsulation and fixation about other groups that moves around and is adopted and transferred between different organisational actors, who act upon them accordingly.

This organisational social othering contrasts sharply with ERP's implicit assumption of a seamless organisational social fabric that is integrated and transparent, and that social actors are willing to coordinate and be migrated into a single ERP system. This raises the question of how such a contradiction could be resolved in the practice of implementing ERP, in particular its integration capability.

Research setting and methodology

This research belongs to the qualitative school of research in information systems (Kaplan and Maxwell, 1994). ANT is considered to be useful in providing an alternative critical view in IS to the well-established emancipation approach based on the work of

Habermas (Doolin and Lowe, 2002; Howcroft and Trauth, 2004). In this regard, being critical does not mean seeking emancipation but rather facilitating the disruption of existing assumptions and certainties (Doolin and Lowe, 2002) and "drawing attention to hidden aspects" (Alvesson and Deetz, 2000).

Data collection took place between August 2000 and March 2001 in a leading international food and drinks organisation in the top ten of its industrial league, as part of a larger research project to study the implementation of ERP in various organisations. This company is referred to anonymously as "Drinko". The system implementation project lasted for four years and consisted of implementing five modules of SAP R/3 in two major business units of the group located in two different European countries. The researcher was allowed access to this prestigious organisation in the last three phases of the project.

Data collection was primarily based on in-depth interviews with project stakeholders, supported by documents reviews. Interviews are considered "a key way of accessing the interpretations of informants in the field" (Walsham, 2006a), despite criticism that it is a rather distant method of data collection compared to more detailed ethnography and participant observations (Nandhakumar and Jones, 1997). However, while locating "structured interviews" as leaning towards the distant end of their distance-engagement spectrum of data collection methods, Nandhakumar and Jones (1997) admit that "unstructured interviews [. . .] provide opportunities for extensive exposure to the social actors' life-world", and hence they locate it within the engaged methods side (Nandhakumar and Jones, 1997, p. 115). Unstructured interviews give respondents considerable latitude over what they want to say and how they say it, allowing them to drift and speak about issues that they believe to be important (Bryman, 1989).

The interviews for this study were designed to be unstructured. Some modification to this took place, according to the interviewee's openness and ability to talk on topics in an unguided way. When an interviewee required some guidance, general questions and a few prompts that encourage respondents to talk about certain issues were asked, which made some interviews lean towards being semi-structured (Bryman, 1989). Techniques for collecting sensitive in-depth interview data were followed in all interviews (Lee, 1993). On only one occasion did a respondent refuse to comment on a delicate question raised, which had referred to the future involvement of a certain business unit in the project. This interviewee subsequently cut all contact with the researcher, despite previously being one of the most helpful informants.

Documents reviews supported the interview data, and in some cases helped to validate some interviewee stories and generate queries for further clarification. Besides providing some technical information (such as organisation structure, system structure, project team structure), documents reviews helped to give a holistic view of the organisation and an initial understanding of the context and the different influential individuals and groups within the organisation. This view was validated or falsified during interviews. Some documents, such as internal reports marked "Strictly highly confidential", offered in-depth understanding of private issues that were confidently conveyed between different individuals or groups away from the rest of the project stakeholders. These enriched the researcher's understanding of context and aided in the process of making sense of data.

Thirteen members of the project from the two different countries that were the focus of this study were formally interviewed in their work premises. These include the

project director, project manager, module managers, change managers, and project members from all the implemented modules, as well as members from the external consultancy team involved. Each interview lasted between one and three hours. Some members were either interviewed more than once or contacted via e-mail or telephone to clarify or follow up the progress of certain issues. Follow-up interviews tended to be shorter, lasting 20 minutes to a hour. The company keeps a strict confidentiality policy, and therefore no interview recording was allowed. The researcher took handwritten notes and observations during the interview. She extended and elaborated them, and wrote more notes and observations directly after each interview.

Data analysis followed the hermeneutic cycle, constantly moving from the parts to the whole to understand the situation (Klein and Myers, 1999; Gadamer, 1976). Interview data was analysed and grouped according to several criteria, such as "issues", "actors", and "events" (Miles and Huberman, 1994). The researcher also returned several times to read whole interviews and documents chronologically, in order to clarify her understanding of the context and to develop a sense of the situation, the whole stream of actions involved and the project's progress over time (Vaughan, 1996).

The reporting of the case study seamlessly weaves the data collected from interviews and documents, following leading authors on ANT such as Latour (1996) and Law (1992b). However, the academic practice of stating the source of each quote (document or interview) and to which group the interviewee belongs has been maintained. All quotes presented in the paper in parentheses are quotes from the field. When more than one source agrees on a particular view, only one quote is presented identifying the business unit affiliation of the sources, but without referring to a specific interviewee.

The case study

Drinko is a global food and drinks group that owns many production, packaging, and sales sites, each of which represents a company or group of companies that operates locally. Drinko has major production operations in two European Countries (described here as "EUK" and "EUB"). The case will focus only on the business units (BUs) of the EUK and EUB groups, which include a total of over 25 BUs.

In 1998, Drinko announced the initiation of a "major Drinko-wide initiative unprecedented in scale and cost" (transcript of CEO speech in the project inauguration event) to implement a single ERP system based on SAP technology. The project lasted for over three years, involving an overall cost of more than £40 million. After some initial confusion concerning its scope, the project was narrowed down to focus on the two major groups of this study (EUK and EUB), together with the corporate centre and worldwide operational centres located in EUK. The EUB group had a long history of rejecting any sort of control coming from either the EUK group or corporate centre, and was generally sensitive towards whatever comes from EUK.

Analysis of the case study
Organisational othering

The staff of Drinko EUB was for a long time "othered" within Drinko. They were portrayed and stereotyped as "old fashioned" and complacent because they were using the same procedures and concepts they had been following for "over twenty years",

had typically worked for the company for 15 years and more, and had no intention of changing, advancing, or modernising their "historic style" (as expressed by many EUK interviewees). In contrast, EUK perceived their own staff as being superior: dynamic, modern, "capable of doing things", and able to face the aggressive competition in the market successfully.

Following this othering, EUK kept a distant relationship with EUB, limited to the revenues the latter generated. EUB was organisationally left alone (distanced and separated) and EUK interest was limited to EUB's "bringing the cash (revenues) back" (interviews with executive manager and change manager from EUK).

EUB, on the other hand, did not see a reason for EUK's perceived superiority and always tried to fight back and assert its identity and corporate capability through the fact that EUB was the most significant provider of cash for the company and that Drinko's leading financial performance owed a great deal to their hard work (as expressed by EUB interviewees and a change manager from EUK who was typically critical of EUB perception). EUB's network felt it was not fairly valued and positioned within the organisation. Hence, EUB staff sought to seize every opportunity to stress how much their business unit supported the company's whole network. This struggle to emphasise their organisational capability and identity was perceived by EUK, in a typical othered way, as EUB being "always problematic" and that "they are stubborn, resistant, and would resist and disagree with whatever comes from EUK". The two networks, EUK and EUB, were separate with the cash flow running between them as the only intermediary.

Othering versus integration

In 1996, Drinko's top management became concerned with the cash flow (intermediary) that EUB provided, following a continuous decline of EUB revenues. They feared that the increased competition might reduce these even further over time. Therefore, Drinko's top management felt the need to interfere in the internal network of the "cash cow" (i.e. EUB) to increase its efficiency and capability for meeting increasing competitive pressures. The management knew that EUB would be very sensitive towards whatever came from EUK, which meant that no change programme initiated in the EUK would be accepted by EUB. This led Drinko's senior managers to identify a good opportunity to align EUB to EUK business practices in a way that would be acceptable to EUB. They found that facing compatibility issues created by the "Year 2000" (Y2K) date problem could offer a convincing reason for implementing an integrated system, which would then interfere in the EUB network and connect it operationally to EUK.

This thinking led to the presentation of a corporate-wide SAP system to EUB top management as a means of solving the potential danger of a disastrous system collapse due to Y2K compatibility issues. This "problematisation" presented the system to EUB top management as a survival solution (Callon, 1986). It also cut off the route to any other possible IT solution to the problem, as it convinced EUB that any other approach would be not only be costly, but also high-risk considering the large number of legacy system in place in EUB. In ANT terms, Drinko's top management had set the integrated SAP system as the "obligatory passage point" (only solution) for EUB to overcome its Y2K crisis (Callon, 1986).

Drinko's senior managers were concerned that this translation would not be enough to pull the EUB internal network towards EUK because the long othering of EUB had made them "typically suspicious" of EUK (this suspicion is expressed by EUB interviewees, while EUK interviewees expressed critical and sometimes sarcastic awareness of this view). Drinko's top management feared that the invisible network that the EUB top management represented would render itself visible and problematic as the project progressed in practice. Hence, they decided to proceed with recruiting more actors from the EUB network.

This recruitment included a powerful non-human actor, namely the "other's" location of EUB, and adopted it as the location of the project. In doing so, they appeared to follow EUB's explicit interests in acquiring corporate recognition and equality with EUK by expressing publicly that the choice of location offers "significant resources" (transcript of the CEO speech) because of the size of Drinko's operations in EUB and the "available capabilities" (quotes of project director speech published in the corporate announcement) that EUB could provide. This translation of the other through corporate recognition and the pressurising of what is perceived and stereotyped as the organisational superior actors, including even compelling them to fly out to work from EUB, gave the othered actors of EUB confidence to join the project on the basis that they will be finally organisationally recognised and treated as project members on equal terms with the powerful actors.

Network reverse
EUK staff felt that they had been enrolled in EUB's internal network and that EUB was dominating the project, which was humiliating to their perceived superior identity. They first complained that the buildings were "old [. . .] like all the buildings [in EUB]". However the buildings – from the researcher's point of view – were not actually that old, but had traditional corridors and closed offices that were different to the open plan layouts in EUK buildings.

The "old fashioned" EUB offices and long corridors were viewed by EUK staff as constituting part of EUB's associations and networks, and hence part of the EUB identity that they strongly opposed and othered. This othering perspective viewed the building's internal layout as reflecting a hierarchical, slow, un-dynamic way of working "which is a common practice in EUB" (interviews with a module manager, a change manager, and a number of team members). Team members from the EUK refused to enter EUB's network by, for example, sharing office rooms with each other to try to translate the buildings into their own way of working. As a EUK manager expressed it, "Whenever [our project members] find a large room, they fit more than one person together to allow for 'informal ways of working'". Although EUB's buildings were criticised for enforcing a formal hierarchical relationship, the EUB business processes were later criticised as being too personal and informal, which reflects the contradictions and opposing opinions in the EUK side that stemmed from viewing EUB as the other, "the must be different from us".

Each team attempted to pursue its objectives through creating its own work style, schedules and milestones, which enrolled its favourite software to represent its work. For example, teams from the EUK used packaged software for diagrams and charts that were widely used in EUK, while teams dominated by EUB used other "outdated" and "old packages" (from the EUK point of view). EUB felt that

EUK thought it was smarter and kept "showing off with their fancy pictures and presentations", referring to the use of their package software tool (EUB team member). EUB teams "closed ranks"[1] themselves and continued their work in trying to keep to their schedules.

EUK teams felt "more competent" and created a boundary not only between themselves and other teams, but also with the programme office itself. Being managed from EUB and dominated by EUB personnel, EUK felt superior to the programme office, as indicated by comments such as "what do they know [. . .] it is their first time [. . .] we were there several times before". They did not "see a point" in being recruited into his network and to exchange the agreed-upon intermediaries – i.e. schedules, milestones, and progress against targets. For this reason, the project office lost track of some teams because it continued to have outdated information on their progress. The project manager's invisible internal network was made visible when his aligned technical tools, such as project management software and Gantt charts, were not allowed to operate because the data they had was out of touch with what was happening on the ground.

Many teams missed their deadlines, including those dominated by EUK. This caused delays in the project schedule. EUK teams found the delays an opportunity to translate top management and convince them that EUB posed a threat to the project, and hence should be distanced from it. A confidential report to the CEO was raised to complain about the "domination" of EUB and their lack of cooperation, which they said hindered EUK teams from finishing their work in time. This was followed by another complaint that EUB compromised the quality of work for the sake of meeting deadlines and that EUK were "genuinely concerned of the effect [. . .] [of this] on the final solution [the implemented system]".

Concerned by the sensitivity of the issue, the top management commissioned a consultancy firm (Independent Consulting) to investigate the issue. Its report, confidentially submitted to the CEO, revealed that both EUB-dominated teams and the project office preferred to share the same building, while EUK teams and staff chose from the start to be in the other building in EUB. The consultants' report noted: "the two buildings are taking on individual characters [characteristics] and alignment which might result in gaps appearing in the overall solution [system]". This was also supported by the EUK process owners, who found it difficult to "conquer the in-built prejudices and impacts of their location in designing and communicating a shared vision" with EUB (an interview and an internal document).

These reports and their claims translated top management. They decided to move EUB away from direct involvement in the project teams, while keeping it broadly locked into the project network. Pulling the location out would have been quite risky, as it represented EUB's "actorship" in the project and was strongly associated with all actors in the EUB network. If the non-human actor of EUB locations were removed from the SAP project network, the associated human EUB actors would probably have followed by withdrawing from the project network. Drinko top management asked Independent Consulting to advise on how this change and marginalisation could take place without enflaming the tensions between the involved parties.

After long discussions with Independent Consulting, a joint report was compiled and issued *under the consultants' authorship* to convince EUB and justify the change. This report explained why a new approach was being adopted by mentioning that "it is

not unusual to change during a programme" and that the change proposed would be a way of going forward with the SAP project, and a reflection of the need for the project to have "a business pull" rather than "the programme push" that had been taking place (consultants' report and a number of presentations, a change manager interview, and a consultant interview). The changes that were then suggested in effect marginalised EUB actors, while continuing to lock them into the project network. For example, the project's new structure moved the managing director of EUB from the active post of sponsoring the sales and operations planning team to a more ceremonial position of being a member of the steering committee. The sponsors of the new teams were all located in EUK. To ensure the locking-in of EUB business units, a new "release owner" post was created for each stream, with three owners representing the companies within the project's scope: EUB, EUK (including the corporate centre), and Europe sales. This ensured that the EUB release owner was responsible only for the businesses processes in EUB, and the rest was left for EUK release owners.

These changes guaranteed that EUB staff would not be in an effective powerful position, although they would remain actors in the network and loyal to the project. Most of the newly appointed actors worked from EUK offices without any formal announcement of a location change for the programme. Consequently, the project returned back to EUK, putting an end to the EUK staff's feeling that it was being dominated by EUB in terms of staff and location.

The organisational othering inscribed

The long othering of EUB was extended to the SAP system configuration. SAP recommends and supports having one service centre for the whole organisation, which is considered to be a source of cost cutting and efficiency. In Drinko, the location of the shared service centre turned out to be problematic and another manifestation of the othering of EUB and the denial of each party to bridge their prejudices and go to the other. EUK staff's argument that it had to be in the EUK was an expression of their view that they had superior capabilities to run the organisation, which was something that EUB should not be granted. They problematised the issue to top management by arguing that EUB did not have the competences to operate the centre and the only staff who knew how to do that were in the EUK.

Top management did not want any explicit manifestation of otherness and marginalisation at this point, so they did not want to "take away everything" from EUB territory, particularly after marginalising EUB through changing the project structure and implicitly allowing EUK project members to work from their EUK offices and not from the project office in EUB. They thought that locating the service centre in EUK "would jeopardise the whole thing in such a critical time [when the SAP configuration was being finalised]". Thus, top management decided to compromise the system and configured it awkwardly to have two shared services, one in EUB and the other in EUK, in order to ensure the continuity of EUB cooperation in the system implementation.

At the same time, Drinko's top management made it clear that this was a temporary solution and that it intended to move to a single shared services centre some time in the future, with the time and location being determined later after the implementation. By the end of 2001, nine months after the implementation, the company announced the future amalgamation of the two-shared service centres (EUK and EUB) into a single

centre located in a third European country (EUC). They aimed to undo the existing "odd structure" and achieve better organisational integration, overcoming the social logic and avoiding any controversy concerning who will "boss" whom.

Discussion

The long othering of EUB meant that the EUK organisation had no interest in the EUB organisation apart from the revenues it provided. The decline of these revenues triggered the perceived superior and more powerful and competent EUK organisation to interfere in the EUB network's operation to remedy the situation. ERP was then identified as the solution of the EUB problem and a way of making their transparency a fixed organisational reality. With the knowledge that EUB would fiercely resist any explicit EUK interference, top management had to interest the other (EUB) and bridge the institutionalised perception of a power gap and superior corporate identity of EUK. To ensure this end, a long chain of translations and network formation and de-formation took place. In the initial stages, top management had to interest and juxtapose a strong actor in EUB to help translate this historically distant network and encourage it to join the project network. They therefore recruited the non-human actor of the EUB location to assert EUB's identity and sense of equality and search for corporate recognition. This admission of the value and power of EUB, particularly by EUK, was successful in translating the EUB network into a committed faithful alliance to the ERP implementation project.

The existing social logic of othering shadowed the implementation of the integrated system, resulting in separate isolated teams that largely did not communicate with each other, and hence faced the risk of configuring isolated modules of what was supposed to be an integrated system. The EUK team members could not overcome their othering of EUB and consider them on equal terms as project members. Thus, they isolated themselves in a separate building (another non-human actor) and expressed their sense of superiority by not communicating with other teams and the project office.

The EUK teams could not accept new terms for their relationship with EUB that could possibly diminish or even equalise them with the opposed others, because this opposing relationship defines EUK and creates their sense of identity (Rose, 1995). Therefore, EUK wanted to reverse the top management translation in order to return back to a boundary relationship and a marginal status for EUB through which they could assert their organisational identity. As the deadlines of teams started to slip, top management realised the risk of having the teams not communicating with each other and had to recruit consultants to ensure the continuation of the translation of the other (EUB) into the project, under new conditions that suited EUK teams. The consultants issued a report under their own authorship recommending a structural change in the project organisation that effectively marginalised EUB and at the same time prevented them from noticing the displacement. This translation prevented the network from reversing, despite the change of EUB's status within the project.

The service centre was an occasion for EUB to stress their identity as an organisation actor capable of operating a sophisticated integrated operation. EUK also strived to own the service centre as an assertion of its domination, superior capability, and operational competency. In such an intensive political situation, top management had to compromise the integrated ERP system and configure it to suit the existing

social logic of isolation and separation. The allocation of two service centres for SAP, one to be located in each business unit, is considered inefficient from the point of view of the system. It misses the significant cost savings that could be achieved from technically integrating the organisation under a single service centre for the whole organisation. Yet this technically inefficient solution seemed to be socially efficient, as it guaranteed to keep all the actors involved translated and committed to the SAP implementation. Another less socially sensitive solution might have triggered the superior-inferior relationship of organisation othering, destabilised actors' translations, and weakened their commitment to the implementation project. That could have brought the implementation itself to a halt.

Conclusion

Although the deterministic conception of ERP systems is receiving growing attention and questioning (Elbanna, 2006; Grant *et al.*, 2006b), its particular integration capability has continued to enjoy less critical examination. Enterprise integration is consistently considered to be one of the key aims of organisations implementing ERP systems. This objective is usually taken for granted as a technical capability of the system that can be simply transferred and delivered to the organisation once the system is in place (Norris *et al.*, 1998; ASAP World Consultancy, 1996). The study reported here explicitly examines this view through discussing the anatomy of enterprise integration. It identifies three highly interrelated facets of integration:

(1) technical;
(2) operational; and
(3) social.

Highlighting the anatomy of enterprise integration helped to qualify the bold statement that ERP systems assumptions "implies that the existing situation lacks integration" (Light and Wagner, 2006). The research illustrates that the ERP capability of integration implicitly assumes a simple view of integration based on the perception of the organisation as a united social whole that requires only technical and operational integration. This inscribed capability assumes the existence of social actors that are able and willing to coordinate and work together in order to develop, establish, and carry out the technically supported operational integration and be part of the same integrated organisation. In contrast to this view, the study reveals the complexity of the organisational social fabric and the need for it to be delicately managed in order to ensure the progress of the implementation project of the integrated system and to achieve a socially viable version of integration. In this regard, it challenges the thinking that ERP systems straightforwardly enable organisations to coordinate across geographically dispersed locations (Davenport, 1998) and that they redefine the previously known organisational boundaries (Brehm *et al.*, 2001; Foremski, 1998).

The findings contradicts the notion that an ERP system could serve as an "enterprise integrator" (Hanseth and Braa, 1998, pp. 192-3), a view based on a rather romantic perception of the social actors of the organisation as requiring only the integrated forum of an ERP project to "become acquainted with each other, learning about each others' way of working and doing business". In contrast, the study reveals the social and historical conception of dis-integration that played a crucial role in the context within which ERP system implementation took place and shows the contradiction between the

package logic of integration and the organisationally embedded social practice of dis-integration that surrounded the implementation. These findings provide a possible explanation of why the authors' studied organisation eventually failed to have a shared service centre for all divisions (Hanseth and Braa, 1998, p. 194).

The study also illustrates how organisationally embedded social dis-integration can be inscribed in the ERP system, resulting in an awkward and costly configuration. This provides possible explanation of some of the briefly mentioned observations and passing statements in the relevant literature, such as the comment that "ERP reproduced existing structure" in Quattrone and Hopper's (2005) study on management control, or in brief reports without further explanation that organisations reach a country-specific customisation of the system (Alshawi *et al.*, 2004; Markus *et al.*, 2000a). The findings of the study reported here also give support to an unsupported statement by Lee *et al.* (2003) that the failure of the social integration can jeopardise the success of the technical integration.

The notions developed here of othering, institutionalised prejudices, and historically cultivated differences enrich the emerging studies on the multiplicity of organisational life, which ERP itself can provide an opportunity to address but cannot resolve through its own inscribed functions. These notions expand the previously identified aspects of multiplicity such as "multiple temporality" (Scott and Wagner, 2003), multiple "epistemic culture" (Wagner and Newell, 2004; Knorr-Cetina, 1999), and multiple organisational visions (Rowe *et al.*, 2005). The identified concepts offer an alternative lens to understand the complexity of ERP project teams and the intra-group conflict involved, beyond those issues that appear as being task-related. This complements the previously identified factors, such as large team size and the involvement of professionally heterogeneous groups (Sawyer, 2001b; Kay, 1996; Ward and Peppard, 1996). The findings reveal that the categorisation of the nature of intra-group conflict into "relationship" and "task" related conflict (Besson and Rowe, 2001; Sawyer, 2001a; Besson, 1999) and the subsequent *a priori* decision of ERP researchers to focus on one aspect or another (Besson and Rowe, 2001) are over-simplified and miss the complexity of the conflict encountered.

The study introduces a novel critical framework based on ANT and the concept of organisational othering. In doing so, it responds to the call to broaden the critical information systems research agenda beyond the traditional critical discourse based on Habermas (Brooke, 2002; Doolin and Lowe, 2002; Walsham, 2006b). The incorporation of non-humans (such as buildings, consulting reports, systems configuration) as actors in the organisational politics and the revealing of their role in the conflict and its resolution adds a new dimension to the research on the political aspects of information systems. This contributes to and enriches the ongoing discussion on the politics of IS implementation (Allen and Kern, 2001; Doolin, 1999; Brooke and Maguire, 1998; Cavaye and Christiansen, 1996; Markus, 1983).

The findings of the study suggests that implementing an integrated packaged software requires achieving some sort of social integration in order to keep all actors involved committed to the implementation. This social integration could be achieved through delicate transitional translation processes of the involved social actors and managerial acceptance that this might not lead to achieving the package-prescribed integration, but rather to a version of the enterprise integration that is socially acceptable and supported by the ERP system.

The research invites practitioners to reconsider the view that the technical integration capability of ERP could be straightforwardly materialised across the previous organisational boundaries to lead to successful cooperation between previously isolated groups. Instead, they should be open to examining the roles of all actors with the power to affect not only the implementation project but also the system being implemented. Organisational othering should be accounted for, monitored, and addressed before it gets inscribed into the ERP system, which would result in a reproduction of organisational boundaries. At the same time, practitioners can seize the opportunity of ERP implementation to loosen established organisational barriers and tackle prejudices between different organisational groups.

Note

1. This is a military term for forming a self-enclosed group, typically for self protection against outsiders.

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