ONE ORGANISATION, THREE OUTCOMES: EXPLORING THE INFLUENCE OF POWER RELATIONS AND IT CONTEXT ON MULTI-SITE ERP IMPLEMENTATION IN CHINA

Zhang, Ying, University of New South Wales, Australia, zhang.ying@student.unsw.edu.au
Cecez-Kecmanovic, Dubravka, University of New South Wales, Australia, dubravka@unsw.edu.au
Pang, Vincent, University of New South Wales, Australia, VincentPang@acslink.net.au

Abstract
Since 2000, enterprise resource planning (ERP) systems have been widely adopted by large, state-owned companies in China. While there is a rich body of literature on ERP implementation in western companies, studies of Chinese companies are scarce. A recent exception is a study of seventy seven mostly manufacturing companies in China by Liang et al. (2007). They found that high coercive institutional pressures positively affect top management participation, which, in turn, positively affect ERP diffusion and the degree of its usage across the organisation. However, how the institutional pressures are exercised and what are the roles of top management in ERP implementation in complex Chinese companies remained open questions, worthy of further examination. The lack of understanding of specific conditions and especially dynamics of power relations in ERP implementation motivated our in-depth case study of a multi-site ERP system implementation in a large Chinese manufacturing company. The data collected from three divisions/subsidiaries shows that their implementation of ERP system turned out to have different outcomes. The key issues that emerged from the data indicate that the dynamics of power relations between the parent company and divisions/subsidiaries, and IT context have had a significant influence on the ERP implementation and different outcomes in divisions/subsidiaries.

Keywords: ERP implementation, IT context, Power relations, Top management support

1 INTRODUCTION
ERP (Enterprise Resource Planning) system is an enterprise-wide integrated information system which helps handle the majority of an enterprise’s functional areas such as manufacturing, marketing and sales, supply chain management, accounting and finance, and human resources (Somers and Nelson 2003, Monk and Wagner 2006). ERP promises to solve the challenges caused by disconnected and uncoordinated business activities by reshaping the business structures and streamlining business processes and their associated information and work flows (Davenport 1998, Al-Mashari et al. 2003). ERP systems are of particular importance for large and geographically distributed companies. Apart from aiming to cut costs and streamline their business processes companies such as Toyota, Unilever, and Volkswagen with divisions and manufacturing sites distributed globally, implemented ERP systems to achieve more effective centralized control (Goodwin 2004, Randolph & Main 2004). Research studies of ERP implementation in large companies therefore focused on issues related to
globally distributed operations, cross cultural issues and differences due to national cultures (e.g. Koh et al. 2006). However, very few studies (e.g. Krumbholz et al. 2000) focused on issues related to power relations between the different organisation levels during ERP implementation within a large organisation.

Since 2000, ERP systems have been widely adopted by large, state-owned companies in China through Computer Integrated Manufacturing System (CIMS) projects typically initiated by the Chinese Government (Quan et al. 2005). The current Chinese state-owned companies normally take the form of group enterprise which consists of a number of divisions and subsidiaries. While they operate in a single cultural context, these companies do not necessarily have a unique organisational culture across divisions and subsidiaries, which may affect ERP implementation. Furthermore, the typical ‘top-down’ approach to ERP implementation and the current relationships between a parent company and its divisions and subsidiaries (a division is fully controlled by the parent company whereas a subsidiary is a joint venture between the parent company and another company) may significantly impact on the implementation success. These issues are of particular importance to large Chinese companies but are not well understood and are generally underexplored in the literature.

An exception is Liang et al.’s (2007) study of ERP assimilation and the degree of usage in Chinese companies, based on a survey of 77 mostly manufacturing companies. They found that high coercive institutional pressures positively affect top management participation directly, which, in turn, positively affect ERP diffusion and the degree of its usage across the organisation. While this study demonstrated the role of top management in mediating institutional pressures on ERP assimilation in Chinese companies many questions remain open. Especially in large companies or enterprise groups top management role should be seen within the complex power structures of a parent company and its divisions and subsidiaries. The coercive pressures from the top management of the parent company as a resource for exercising power over subordinates companies can be subject to resistance. During an ERP implementation we cannot assume that power relations remain static. Given the degree of organisational change resulting from an ERP implementation and the potential impact on centralizing control it is more likely that existing power relations will not only impact on but will also be affected by the ERP implementation. The dynamics of power relations need to be investigated in-depth throughout the ERP implementation.

Furthermore, studies such as Sumner (1999), Scott and Vessey (2002), Umble et al. (2003), Yusuf et al. (2004), and Kim et al. (2005), investigate factors that contribute to the success or failure of ERP systems implementation. However, in the context of China, one major factor which may negatively influence the ERP implementation is inadequate IT infrastructure and the lack of information systems (IS) experience (He and Brown 2005, Zhang et al. 2005, He 2004).

The lack of understanding of specific conditions and especially dynamics of power relations in ERP implementation in large Chinese companies motivated our in-depth case study of an ERP implementation in a large manufacturing company. The observed ERP system implementation in the two divisions and a subsidiary of the manufacturing company had significantly different outcomes. By drawing from this study, in this paper we aim to explain how top management support, dynamics of power relations and IT context and IS experience influenced the ERP implementation and its outcomes. We use the lens of power theory and perspective of IT context to analyse the data (semi-structured interviews and textual materials - documents, website and e-mails) to explain the different outcomes of ERP implementation in the same company.

This paper is arranged as follows. We begin with a review of literature on top management support in ERP implementation, power relations and IT context and IS experience. The second section presents research methodology, followed by a third section on results and discussion of the study. Conclusion and future research are discussed in the last section.

2 LITERATURE REVIEW

2.1 Top Management Support in ERP Implementation
The expected benefits of implementing ERP systems are manifold, including productivity improvements, improved decision making and planning, and supporting enhanced business growth (Shang & Seddon, 2002). However, ineffective implementation and use of ERP systems has been reported frequently (Zhang et al. 2005, Al-Mashari et al. 2003; Boersma & Kingma 2005). Many studies have identified a number of critical success factors, such as top management support, communication, training and education, project management and etc. (e.g. Al-Mashari et al. 2003, Umble et al. 2003, Yusuf et al. 2004). Among all these factors, top management support was considered as one of the most important.

Top management is critical because they are the primary human agency that “translates external influences into managerial actions such as changing organisational structures and establishing policies based on their perceptions and beliefs of institutional practices” (Liang et al. 2007, p.63). Top management typically develops and promotes a vision for the enterprise’s IT infrastructure and the role of ERP system, and is also responsible for harnessing the energy and creativity of employees (Bingi, et al. 1999, Al-Mashari et al. 2003, Umble et al. 2003). The outcomes from many studies seem to support the claim that when top management supports an ERP implementation it is more likely to succeed. Conversely, if no or little support is provided, the implementation is likely to fail (Akkermans & van Helden 2002).

2.2 Power Relations

Although there has been an increase in IS research paying attention to the organisational context, there have been fewer studies of the roles of power and politics in IS compared to other research interests (Goodwin 2004, Randolph & Main 2004). Doolin (1998) argued that “technology is both a condition and a consequence of power relations in organisations and society”. In order for ERP research to be relevant, the practices of ERP implementation and use need to be analysed in the context of a wider set of social and power relations.

Giddens (1979, p. 69) defines power as the transformative capability of human actions. Power is exercised via social resources (e.g. signification and norms). As Giddens (1984, p.15-16) explains:

> Resources are structured properties of social systems, drawn upon and reproduced by knowledgeable agents. ... Power is not itself a resource. Resources are media through which power is exercised, as a routine element of the instantiation of conduct in social reproduction.

The most obvious form of power is the formal hierarchy represented by the reporting and authority structure (Randolph & Main, 2004). Those who control the budget, have an extensive empire of subordinates, and have an influential voice, are deemed to be powerful (Bariff & Galbraith 1978).

However, power relations are always two-way (Giddens ibid.) and subject to change through interaction between human agents dynamically. “Those over whom power is exercised are recognized and maintained as people who act and could do otherwise” (Doolin 1998, p.307). Those in subordinate positions in social systems “are frequently adept at converting whatever resources they possess into some degree of control” (Giddens ibid., p.142-3). Power is always subject to resistance. Those subject to power can mobilise other social resources in a contribution to power relations through resistance (Barbalet 1985). Resistance limits the effects of power and in doing so materially influences the dominant power (Barbalet ibid.).

The implementation of an information system is found to cause the perception of power redistribution (Randolph & Main 2004) and power losers may resist the implementation (Sillince & Mouakket 1997, Randolph & Main 2004). The forms of the resistance observed include obstructive resistance (Markus 1983), conflict (Sillince & Mouakket 1997) or counter-implementation activities (Keen 1981). Markus and Pfeffer (1983) identified some indicators of resistance to system implementation, such as frequent complaints about the technical problems, parallel operation of the previous system to perform the functions the new system was designed to meet, poor cooperation in dealing with problems, bad data submitted to the system, insistence that the system did not satisfy the user requirements. However, resistance does not necessary take a form of overt opposition. Barbalet (1995, p.543) states that
“power about which there is consensus must frequently overcome what might be called ‘frictional’ resistance which arises from indifference rather than from conscious and active opposition”.

An ERP system which provides universal, real-time access to operating and financial data can be viewed as imposing centralized control which involves the centralisation of control over information and the standardization of processes, which are qualities more consistent with hierarchical, command and control organisations with uniform cultures (Davenport 1998, Goodwin 2004, Randolph & Main 2004). This would suggest that the context of Chinese companies with Government ownership should be conducive to ERP implementation.

### 2.3 IT Context and IS Experience

In recent years, IT penetration has brought both opportunities and challenges for China (Chen et al. 2007). Low IT maturity of China’s industries and inadequate infrastructure is regarded as a major problem for ERP implementation in China (Huang and Palvia 2001, Zhang et al. 2005, He and Brown 2005, He 2004). Generally enterprises lack a long-term IT strategy, and IT departments/staff (if they exist) lack project experience (Huang and Palvia 2001). Chen (2005, p.84) states that implementation of ERP in western countries and in China do not start from the same baseline. When implementing ERP system, which was one of the most complex enterprise wide IS, Chinese companies without much IS experience have to leap over several years of experienced typically acquired by western companies in similar situations.

The IT maturity has significant influence on ERP implementation. Previous IS/IT experience may have the potential to change employee’s view towards IS/IT which will impact on the future IS implementation. For instance, Leidner and Kayworth (2006) explained how IT can change the organisational culture from the point of view of value conflicts. Once a group experiences a particular information system capable of supporting their values, the group members then generalise the positive experience with the individual system to IT in general, and they are more likely to use IT strategically and innovatively to support group values in the future. As IT is used strategically and innovatively, the IT values themselves become part of the user group values (Leidner & Kayworth 2006). In contrast, if a company, as in the case of Chinese companies, has no or little IS experience beforehand, it is very hard for its members to see the value of IT. Consequently, the value gap between the adopting organisation and ERP system may potentially be huge.

From the literature review, we should expect that top management support would play an important role in an ERP implementation; that more hierarchical, command and control type of organisations, with uniform cultures, will be more compatible with assumptions embedded in ERP systems and therefore will more succeed in its implementation; and that IT immaturity and the lack of previous experience with IS will negatively influence an ERP implementation. Our investigation of the ERP implementation in the large Chinese manufacturing company however questioned some of these claims and confirmed others. The outcomes of the ERP system implementation were significantly different in the two divisions and a subsidiary. In this paper we explain these outcomes and the differences between them by analysing the nature of top management support, dynamics of power relations, and specific IT contexts and IS experiences in these divisions/subsidiary.

### 3 RESEARCH METHODOLOGY

The objective of this research is to investigate and explore the role and implications of top management support, dynamics of power relations and IT context and IS experience on the implementation of ERP system within the case company. An interpretive case study is adopted because firstly, it allows us to address ‘how’ and ‘why’ research questions rather than testing the relationship between dependent and independent variables. Secondly, the influence of organisational factors is a context related phenomenon. Walsham (1993, p.4-5) states that interpretive case studies aim at “producing an understanding of the context of IS, and the process whereby IS influences and is influenced by the context”.

Case background
Empirical data were collected in a listed state-owned manufacturing Chinese company ASC (the real name disguised to preserve confidentiality) during 2006-7 period. The history of ASC could be traced back to 1890s. The Chinese government restructured the company and publicly listed it on the share market in late 1990s but maintaining 51% of interest. ASC is one of the largest manufactures of special-purpose vehicles and medal hoses, with 10 divisions, four subsidiaries and a number of sales offices throughout China, and an annual turnover of approximately 1.2 billion Yuan. At the point of data collection, ASC has implemented ERP in two divisions and one subsidiary, all located in the same city in China. A centralised IT department at the level of the parent company, namely Information Centre, was responsible for the implementation of ERP for all sites.

Data collection
Data collection includes interviews, documents and observation and informal discussions. Fifty individuals in various positions were interviewed as shown in Table 1. The interviewees were selected based on theoretical sampling strategy (Neuman 2006). Key staff who were directly involved in ERP project were targeted. Interviews lasted on average one hour each, and were tape recorded or notes taken.

Table 1: Type and amount of interviews conducted at ASC (case company)

<table>
<thead>
<tr>
<th>Position</th>
<th>Division A</th>
<th>Subsidiary B</th>
<th>Division C</th>
<th>Information Centre</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior manager</td>
<td>1</td>
<td>4</td>
<td>-</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Project manager</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Implementation staff</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Middle manager</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>-</td>
<td>8</td>
</tr>
<tr>
<td>User</td>
<td>7</td>
<td>6</td>
<td>2</td>
<td>-</td>
<td>15</td>
</tr>
<tr>
<td>Consultant</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>15</td>
<td>7</td>
<td>15</td>
<td>50</td>
</tr>
</tbody>
</table>

An interview guide was developed with questions translated to Chinese (which is the native language of all interviewees and one of the authors). Although the essence of the interviews is real time conversations between the researcher and interviewees to reveal their personal views (Mingers 2003) we used the interview guide to ensure that all related issues to this study were covered across the company. The interviews were semi-structured and were centred on each interviewee’s involvement in, understanding of, and experience with ERP system and its implementation. Different sets of interview questions were developed to address the ERP issues related to the role of interviewees. Other sources of data collected including documentation (e.g. annual reports, internal publications), observations, and informal conversations (via email, telephone and online chatting software). Multi-data source helped us to provide a richness of findings and enabled triangulation (Yin 2003).

Data analysis
All interviews were transcribed. Only relevant part of the interview transcripts and documents were translated into English. The transcripts and relevant documents were input into NVivo (qualitative data analysis software). The process of data analysis proceeded in two steps. The first step involved open coding and thematic analysis of texts (Ezzy, 2002). The empirical data were read through several times, analysed and coded, using meaningful code names. They are then organised into hierarchical categories by eliminating, combining and subdividing. The second step was theory-based analysis. We draw on the lens of power theory and the view of IT context to explain the nature and outcomes of ERP implementation in the two divisions and the subsidiary. Based on this analysis a contribution to theory of ERP implementation in Chinese companies is made.
4 RESULTS AND DISCUSSION

4.1 Case Analysis

Around 2000, the Chinese Government initiated and promoted the ‘CIMS project’ (Computer Integrated Manufacturing System) among big state-owned companies nationally. The Government sought to select some big state-owned companies to trial and fund this CIMS project. The experience of big companies involved in this project was expected to diffuse along the supply chain so that IT innovation would be promoted throughout the industry in China. ASC was selected by the Government as one of the several companies to embark on the CIMS project trial in 2001. The Government invested partially in the project and encouraged these trial companies to invest additional money themselves in order to adopt the ERP systems. The implementation approach was ‘top-down pushing’ from the Government to the parent company, then to divisions/subsidiaries.

Although the major motivation for ERP adoption was coming from the Government, the top management of the ASC parent company had some managerial objective of their own for this project, as CIO explained:

“Our objective of the ERP project in the near future is to standardise the management of all the divisions and subsidiaries. Those divisions/subsidiaries have too much authority like the vassals in the old time. We don’t know what they are doing and their real business and operational situation.”

In 2001, the ERP project, a multi-phased implementation of Oracle modules, was launched in ASC. Division A was selected as the pilot for the ERP implementation, followed by Subsidiary B, and Division C.

**Division A**

Division A was selected for the first trial because its top management reports directly to the ASC management board and the fact that the CIO of ASC was a former general manager of Division A. The ASC CIO believed that his prior relationship with the Division A would help the implementation process:

“I knew most of the current senior managers of the division very well and it is more likely to get their supports than in other division/subsidiary. Besides, if necessary, I can put some pressure on them because of my longevity.”

Division A did not have an on-site IT department before ERP implementation. The employees had limited exposure to IT and only a financial software package was utilised in the Accounts Department. Thus, outside the Accounts Department IT did not influence their daily work.

As part of the implementation process, staff from different departments were selected as key users and trained. These key users then trained their fellow colleagues to use the system.

The Division A top management claimed to support the project but they did not drive it nor did they engage in the implementation process to ensure the success of the project. They relied on reports produced from the middle management related to the progress, including any problems, related to the ERP implementation.

After 10 months of hard work of preparing the data, analysing business processes, configuring the system, and one month after the implementation, the ERP system was shut down because of problems related to lack of integrity of the data in the system. This was a very serious failure for Division A, since the parent company had high expectation of the first trail. In order to clarify the reasons of failure, the general manager of Division A wrote a letter to CIO of ASC, and blamed the Information Centre implementation staff for not responding immediately and the complexity of the system:
On the day when the fault happened, we tried to contact the staff of Information Centre, but nobody replied. We think Information Centre should establish a fast feedback system to ensure the successful implementation......Since the system has been rolled out, we regularly get some system problems. Sometimes, it can cause one day shutdown......The system is obviously too complex for us. We believe there must be some potential problems with the system. If one operational mistake can bring un-repaired problems and a system shut-down, we don’t think this system should be implemented in practice. Otherwise, it is a ‘time bomb’ for us.”

In his response, the CIO of ASC criticised the attitude and ‘old management style’ of the Division A top management and insisted they had to learn about the ERP system and understand the need to change their work practices in order to gain benefits of the system. As the top management of Division A realised this was an unavoidable command from the parent company, they started to implement the ERP system again. At the end of 2003, nearly half a year later since its first trial failed, the system did function as intended. However, the employees still did not see how ERP helped them in their work but, instead, they perceived ERP as a controlling tool deployed by the parent company to monitor them as described by a staff from the Division A Data Centre:

“After ERP implementation, they (the parent company) have even more control over us. I don’t know whether they usually check the system or not. But if they want to have a look at it (business and operational data), they can know anything that we did. The financial information is more transparent. They can check any accounting detail if they would like to.”

Subsidiary B

Subsidiary B voluntarily applied to be the second trial implementation site after the initial failure of Division A. The Subsidiary B top management regarded the ERP implementation as an opportunity for them to improve their management as explained by the General Manager of Subsidiary B:

“Firstly, we really want to know our real business operational situation and accurate calculation of profits. Secondly, we want to use the system to eliminate the ‘information islands’ which we used to have, and foster the information sharing throughout the organisation. The third objective is to make the business process standardised and visible, especially some key business sectors such as Purchasing Department......Although we do not know the ERP system very deeply, we know exactly what the ERP system can or cannot enable us to do. Therefore, we have our own objectives towards the ERP implementation, unlike other divisions which are forced to implement.”

Subsidiary B has had significant experience with IS/IT. Subsidiary B was the first in ASC to use CAD to assist in product design and, later, they implemented an in-house ‘ERP-system’ (this is what they called their system). This system consisted of Finance and Accounting Module, Purchase Module and Sales Module. They experienced the real benefits of IS and believe IT is something that they should use in their business. When an opportunity arose, they did not hesitate to apply for the implementation as justified by the Subsidiary B General Manager:

“We even did not think about the question of whether to implement it (ERP system) or not. We know this is a good system which definitely can help us to improve our management......Before this Oracle ERP, we’ve already had an experience with two information systems. That’s where we are different from others. It’s natural for us to want to use it (ERP).”

The top management showed their full support and commitment throughout the implementation process. As part of the implementation process, the management team attended workshops to discuss changes to their business processes and the system configuration. A new department, called Data Centre, was established. This Data Centre not only supported the IT operation but was also responsible for the data entry for most of business units. In order to achieve better usage of the system, the top management further introduced ‘rewarding and punishing’ measures. Every end user had to attend and pass the training course before they were allowed to operate the system. Those who achieved high marks in the examination were rewarded with bonus. However, if a staff failed the examination, s/he has to attend the training until s/he passed the examination. The trained staffs were expected to operate
the system effectively and the Data Centre checked the system regularly to ensure the data were consistent. Employees who made too many mistakes were punished by salary deductions.

ERP implementation in Subsidiary B is considered a success. The CIO of ASC wants to use this site as an example for future ERP implementation for other divisions/subsidiaries.

**Division C**

Before ERP implementation, Division C had no experience in IT use and did not have a single computer on site. Like Division A, Division C was fully controlled by the parent company. The only difference was that Division C did not have a close relationship with the parent company as in the case of Division A (the CIO of ASC was a former general manager of Division A). When talking about the influence of CIO, the director of the Information Centre said:

“Our CIO has limited influence on the top management in Division C. ...Even though his position is higher, those division leaders may not listen to him.”

Since this is the third implementation in ASC, it was expected that this implementation could be even more successful than the previous two since the staff of the Information Centre were more experienced. However, that was not the case. When comparing the implementation of Division C with previous implementations, an Information Centre member mentioned that:

“To be honest, their management foundation is quite bad. They did not carefully prepare the data that needed to be input into the ERP system, nor did they investigate the business processes to optimise them. They implemented the ERP system just to comply with the parent company’s request.”

The top management of Division C however claimed that he supported the implementation. He asked the Information Centre to come to implement the system, but objected that they ignored any problems arising during the implementation. They selected the staff from the Design Department who were young and with some knowledge about the technology to be in charge of the project. However, there was not enough preparation done before going live. Furthermore, no formal training was given to the users and they did not understand how to use the system. Thus, the users were confused with the functionalities of the system. As a result, the system had too many errors and unfixed problems and became un-operatable. The users stopped using it and went back to their old practices.

One of the members in the ERP project expressed his opinion in the ERP implementation:

“Our manager does not really care about the system and the project. We don’t think the system is quite useful for us. Within the whole division, I am the only one responsible for the implementation. Without their (top management) support, I can hardly make other people listen to me......We lack people who are familiar with IT and capable to do this thing. I am not the right person. Even if I were an IT expert and knew everything about the system, so what? Nobody cares about that. But product design is different, it’s a real technique and skill......I cannot see the future of using the system. I feel I am wasting my time.”

### 4.2 Discussion

The major issues that show the differences of ERP implementation cross the three sub-cases are summarised in Table 2.

**Table 2: Comparison of three ERP implementations in ASC**

<table>
<thead>
<tr>
<th>Top management support view &amp; participation</th>
<th>Division A</th>
<th>Subsidiary B</th>
<th>Division C</th>
</tr>
</thead>
<tbody>
<tr>
<td>ERP perceived as an operational tool</td>
<td>•</td>
<td>• ERP perceived as a management tool</td>
<td></td>
</tr>
<tr>
<td>Some support but no commitment</td>
<td>•</td>
<td>Full support &amp; commitment</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Virtually no support</td>
<td></td>
</tr>
<tr>
<td>Power relations</td>
<td>•</td>
<td>More independent from parent company</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>More dependent on parent company</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>More dependent on parent company</td>
<td></td>
</tr>
</tbody>
</table>
• Strong pressure from the CIO of ASC  
• Hidden resistance from the Division top management  
• Little pressure from the CIO of ASC  
• No resistance perceived  

<table>
<thead>
<tr>
<th>IT context</th>
<th>Prevailing belief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Little IT experience</td>
<td>“At least, we are still using it (ERP) now.”</td>
</tr>
<tr>
<td>IT department created to manage ERP implementation</td>
<td>“We are quite successful in ERP implementation.”</td>
</tr>
<tr>
<td>Significant IT experience</td>
<td>“I cannot see the future of using the (ERP) system.”</td>
</tr>
<tr>
<td>IT department as a core of business operation, was in charge of ERP implementation and use</td>
<td></td>
</tr>
<tr>
<td>No IT experience</td>
<td></td>
</tr>
<tr>
<td>No formal IT department</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 indicates the diverse outcomes of the ERP implementation in two divisions and one subsidiary. The outcomes can be explained by understanding their different forms of power relations with the parent company, and their different IT contexts.

Among the three sub-cases, Subsidiary B which was comparatively more independent and over which the parent company had less control turned to be the most successful in ERP implementation. This is unexpected as the pressures from the parent company could not have been very effective. An explanation why this was the case is Subsidiary B’s significant IS experience and positive attitude toward IT. Namely, during the past 15 years, the Subsidiary B has kept exploring the possibility of applying IT into and innovating their operations and management. During this process, IT has gradually changed the culture in terms of the values associated with IT set by the subsidiary. Both the top management and employees believe IT/IS is a necessary tool to support business operations and improve existing management. As a result, when the parent company forced all the divisions/subsidiaries to implement ERP system, although subsidiaries were less pressured than divisions, the top management of Subsidiary B took this as an opportunity for management improvement. The positive values towards and good understanding of IT/IS enabled the top management to see the potential benefits offered by ERP. Therefore, during the implementation, the top management took active participation and provided extensive support and facilitation.

Given the power structure of ASC, it was expected that ERP implementation in divisions should be more efficient than in subsidiaries, because the management and control from the parent company were more direct, and divisions were more likely to follow the parent company’s decisions and pressures. However, in the case of ASC, the analysis shows an unexpected result. Both Division A and C expressed some form of resistance to avoid the implementation. This can be explained by the perceptions by the top management of Divisions A and C that with the ERP they would be more effectively controlled and would in effect lose power. The declared intention of the parent company to adopt ERP system in order to place business activity under scrutiny and to persuade divisions/subsidiaries to confirm to ‘normal’ work practices defined in ERP system, could have been seen as the intention of the parent company to get even stronger control over its subordinates. This action, it was suspected, would potentially change the existing power structure within ASC, and subject divisional top management to a more efficient surveillance and control by the parent top management. Furthermore, the insufficient IT context also contributed to the resistance by the top management of divisions. This is particularly true in Division C, employees valued the manufacturing technology and professional skills much more than IT knowledge and skills. When implementing ERP system, this became an obstacle for the top management to understand and to learn the complex ERP system. Consequently, it was very hard for them to see the benefits of ERP for their division.

The forms of resistance in the two divisions A and C were however different. In Division A, the top management did not openly reject the system but kept telling the parent company about the technical problems and mismatches of the user requirements and the ERP; they nominally supported the implementation activities (e.g. training), but in fact did not care much about the effects of the training, which eventually led to inappropriate data and the failure of ERP use in their first trial. They hid their resistance basically because of the strong pressure from the ASC CIO. In contrast, Division C which
was less pressured by the CIO, resisted the ERP implementation more overtly by mostly ignoring the ERP implementation. Although Division C was the third to implement ERP, expected to profit out of the accumulated experience by IT staff from the parent company (acquired during implementations in Division A and Subsidiary B), its outcome turned out to be the worst.

5 CONCLUSIONS

The literature on ERP research in China suggests that Chinese culture has a significant impact on ERP implementation. In most cases, the conflicts between Chinese culture and values in ERP system may lead to failure of ERP implementation (Xue et al. 2005). However, our case study did not confirm this claim. As the above analysis shows, the ERP implementation within the same Chinese context, and the same organisational context (ASC), had different outcomes. We demonstrated that power relations between the parent company and its divisions/subsidiaries and the respective IT context/IS experience can make a key difference.

Drawing on power theory and the perspective of IT context, and the extant literature on ERP implementation, we showed how power relations and IT context influenced the multi-site ERP implementation in a large group enterprise in China. The data collected from three divisions/subsidiaries in ASC, the Chinese manufacturing company, show some unexpected results.

The two divisions which were more dependent on the parent company thereby, expected to more closely follow the orders from the parent company’s top management, turned out to more or less covertly resist ERP implementation. Consequently, they implemented the system but the functions of the system were not used properly. The form of resistance in the Division A was more covert as its top management pretended to support and actively engage in the implementation. It can be named covert obstructive resistance, which is similar to Markus’ case (1983). The form of resistance in the Division C was more overt but still did not escalate into an open conflict with the parent company. The Division C top management used the technical problems, the misfit between the ERP and their production structure and processes, and the fact that the system did not satisfy their requirements as resources to counteract coercive pressures by the parent company (Barbalet 1995, Markus & Pfeffer 1983). The top management of Subsidiary B, on the other hand, which was more independent of the parent company, was more committed to the ERP implementation and ultimately successful.

Our analysis shows that the combined influence of power relations between the parent company and divisions/subsidiaries, and the respective IT context and IS experience caused three different outcomes of the ERP implementation. Coercive pressure by the parent company’s top management was not shown to lead to higher divisional top management support. This is because of the relational two-way nature of power relations and abilities of divisional top management to mobilize resources to resist parent company’s coercive pressures.

This study contributes to two well established streams in the literature: studies that explain the multi-site ERP implementation and those that investigate ERP implementation in a Chinese context. This study is expected to be of interest to practitioners, especially the top management of large group enterprises. Understanding the power relations and enhancing a positive IT value throughout the whole group enterprise is very important for the parent company which could enable implementation to be more effective, as it can be managed when understood.

References


