By Maris G. Martinsons

ERP in China: One Package, Two Profiles

How and why the same software system implementation can produce fundamentally different results.

The People's Republic of China enacted the concept of "one country, two systems" when it regained sovereignty over Hong Kong. Since 1997, two socioeconomic systems have coexisted within China's boundaries. My research of strategic management and organizational change in China, and enterprise resource planning in particular, reveals a similar coexistence at the organizational level.

The first type of organization in China is the state-owned enterprise (SOE), which were established as the Communist Party nationalized large parts of the mainland Chinese economy after acquiring political power in 1949. Consistent with a primary reliance on central planning, government ministries not only set prices but also assign employees and specify output quotas for SOEs. The second type of organization emerged after Communist Party leader Deng Xiaoping initiated economic reforms in 1979. These reforms eased restrictions on private (non-state) ventures and encouraged foreign investment with an open-door policy. Although the state still owns or controls most productive assets, the mainland Chinese economy has become increasingly decentralized and market-oriented [4]. Local entrepreneurship is thriving while many overseas firms have established joint ventures or wholly foreign-owned enterprises in China.

Organizations across China have invested billions of dollars in ERP. More than 1,000 Chinese sites had an ERP system by the end of 2001. Nearly 300 of these used SAP's R/3 software package, according to scenarios and forecast data provided by the Gartner Group and IDC. Since 1998, I have completed eight intensive studies of cases where this SAP package was implemented—four SOEs and four private ventures (PVs). Although the same software was implemented in every case, I discovered fundamental differences between the two aforementioned types of organizations in terms of both the process and the outcomes of implementation. Using case study methodology, I also examined the mechanisms (how) and rationales (why) behind these differences.

Recently, I reviewed the results of a large-scale user survey sponsored by SAP Greater China. The survey data collected from 189 SAP customers [8] confirmed the fundamental contrast I had discovered earlier. This is significant for IT managers and

professionals worldwide. China is now the third-largest IT market, after the U.S. and Japan. Even as global IT demand tapers off, China's IT market is still growing at double-digit annual rates. ERP sales in China are rising even faster and are forecast to triple in five years from an approximately $1 billion base in 2002.[1] Although local firms like UFSoft and Kingdee Software are gaining market share, SAP CEO Henning Kagermann confirms that his company has "consistently achieved 50% annual revenue growth" [10].

With China's accession to the World Trade Organization, many multinational enterprises are rushing to establish operations in China and/or interact with Chinese business partners. IT professionals in these firms need to understand how ERP is being applied in China. Eight differences between ERP implementations in SOEs and PVs are highlighted here. However, ERP implementations in these two types of Chinese organizations are not entirely different: three characteristics common to all the ERP cases in China (see the table here) are outlined before the eight differences are detailed.

Projects are rarely completed on time, but they usually remain within the official budget because additional resources are reallocated to them on an informal basis.
Lack of improvement in cycle times or customer satisfaction after implementation raises questions about ERP value in dynamic environments.
Projects led by general management are judged to be much more successful than those led by IT managers.

Common characteristics of ERP in China.

Common Characteristics of ERP in China

ERP projects in China almost invariably failed to be completed within the scheduled time frame, but only rarely did they exceed the planned budget. Additional people and materials were often reallocated to the projects during implementation, but this was usually done on an informal basis. Official budgets were unaffected. I observed ERP project managers calling in personal favors from their colleagues or promising them future considerations. Informal resource reallocation is prevalent in Chinese organizations, but inconsistent with the formalization paradigm of ERP [3].

Secondly, ERP projects rarely improved cycle times or customer satisfaction. Instead, the major benefits were reductions in unit labor costs and/or inventory levels. The Chinese organizations implementing ERP often reorganized task responsibilities and/or consolidated key processes. However, they were rarely able to improve their responses to customer needs. Response time reductions were less than 10% in all eight cases (and for over 95% of survey respondents). This raises questions about the value of ERP in dynamic environments that reward flexibility rather than efficiency.

The third similarity provides a cautionary note for all IT specialists. Projects initiated by IT personnel (such as the CIO or IT manager) were much less likely to be successful than those begun by general management—the big boss in the hierarchical Chinese organization. Top management initiated ERP projects in five of the eight cases. Four of these were successful implementations. In contrast, all three cases initiated by IT managers were failures.

The big boss's authority was often critical to move an ERP project forward and overcome resource bottlenecks along the way. In contrast, disputes between functional managers emerged frequently in IT-initiated projects. Even the top IT manager in a Chinese organization seldom had the political clout and extensive business knowledge to resolve these disputes and make ERP a success.

Successful ERP implementations in China tend to be initiated by top management, planned ahead of time (ensuring their feasibility), and tightly controlled during implementation. Despite these commonalities, I found eight fundamental differences between ERP implementations in China's SOEs and PVs.

Eight ERP Differences

Difference #1. The initial aims of Chinese ERP implementations invariably reflected the need to demonstrate tangible benefits. SOEs typically had a low preexisting level of process automation. Existing IT applications were restricted to financial accounting and very basic inventory control. A prerequisite need to consolidate activities across functional areas inhibited the streamlining of entire processes. As a result, their ERP efforts aimed to increase consistency and reduce costs like overhead. No SOE project aimed to generate new revenue sources or achieve end-to-end supply chain management.

PVs had comparatively higher existing levels of IT application. Online databases for customers and materials were common. Their ERP implementations were thus able to build upon a solid foundation of semi-standardized and partly automated processes. Further enhancing standardization and automation was a common aim. However, PV leaders typically perceived ERP as part of a comprehensive and continuous effort to enhance their supply chain management and adopt the best business practices.

Difference #2. Top managers in PVs were more actively involved in ERP projects than their SOE

[1] Based on scenarios and forecast data provided by the Gartner Group and IDC.

AN AWARENESS OF CULTURAL DIFFERENCES IS CRITICAL TO ERP SUCCESS—THE EVIDENCE FROM CHINA SUPPORTS THIS CONTENTION.

counterparts. PV leaders envisioned ERP as a bet-the-business initiative and viewed their own clearly demonstrated commitment as a critical success factor. In contrast, top SOE managers were commonly reluctant to become directly involved in the ERP project. This reluctance can be attributed to the prevalence of hierarchical authoritarianism in Chinese societies. Top managers enjoy status and power primarily because they are greatly respected by their subordinates. This respect would be compromised if they demonstrated unfamiliarity and/or discomfort with an ERP implementation. By delegating ERP responsibilities to middle managers, they implicitly signaled that the ERP project was not that critical to their organization.

Difference #3. Each PV had a cross-functional steering committee. This committee met frequently and made decisions based on a majority vote or, less commonly, through a group consensus. Resistance was reduced by getting users involved early in the project and providing significant rewards for meaningful contributions. In contrast, SOEs had a much more centralized management structure. A small group of senior managers (usually the oldest rather than the most capable) tended to control rather than supervise the ERP project. Cross-functional conflicts and user resistance were often suppressed rather than resolved.

This observed difference highlights two issues: the need to distinguish clearly between the management of a project, by a designated individual, and the supervision of a project, by a steering committee; and the clear benefits of being proactive when addressing both cross-functional conflicts and user resistance.

Difference #4. PVs were more likely to hire consultants, and their external contractors tended to have considerable experience, both with IT in general and ERP specifically. These consultants demonstrated an ability to guide ERP projects forward at critical junctures by drawing upon their expertise to resolve problems and conflicts. SOEs had limited experience with consultants. SOE managers worried their competence would be questioned and authority undermined if they hired consultants. They rarely engaged outside help, and their consultants tend to be IT generalists, not ERP experts.

Difference #5. PVs commonly adopted a cross-functional focus and applied ERP modules across their entire organization. Similar efforts in SOEs spawned functional conflicts. The accounting and finance department often squabbled with either the purchasing or manufacturing department, while the latter two departments argued among themselves. These conflicts moderated the application of ERP and demonstrated the importance of the "danwei" in SOEs. This internal union tends to protect employee and work group interests at the expense of broader economic interests.

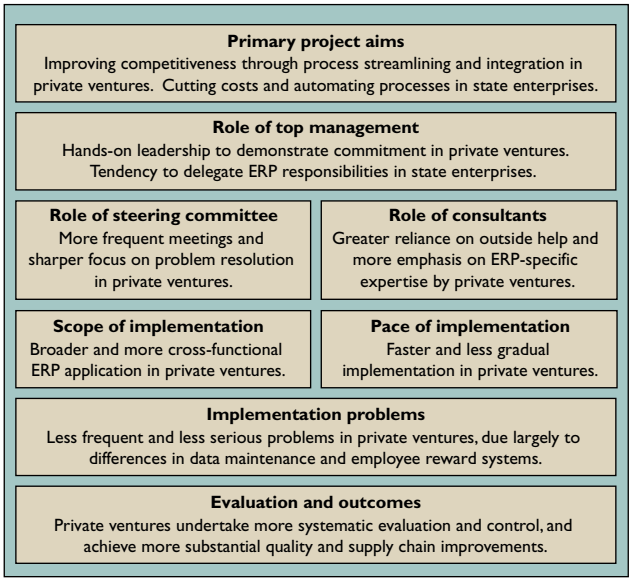
Difference #6. ERP implementation was also faster in PVs. They introduced more software modules simultaneously and cut over to the ERP system at once rather than operating old and new systems in parallel. In contrast, SOEs implemented their ERP in phases. SOE managers tended to rely greatly on personal relationships and their own intuition. They commonly resisted change and were reluctant to trust an impersonal system. The relative inexperience of SOEs with automation and standardization also tended to limit the tolerable pace of change. This elaborates previous findings that incremental and continuous change is preferable to radical and episodic change in China [6].

Difference #7. SOEs had comparatively more data maintenance problems after adopting the ERP system. These problems tended to reflect the neglect of material and customer data issues during the project. Many SOE employees worried about their job security, particularly after the ERP system was implemented. Their priority was continued employment at the SOE or finding a new job rather than making the IT application work. Akin to a case in Hong Kong [2], SOE employees were also reluctant to assume responsibilities associated with empowerment.

The non-management employees of non-state ventures contributed comparatively more to the success of ERP projects than their SOE counterparts. These PV workers were less distracted by personal issues,

more comfortable with empowerment, and motivated by more attractive incentives for useful contributions.

Difference #8. PVs had higher degrees of satisfaction with ERP implementations. PV managers developed a solid understanding of the interactions between different organizational elements. They measured ERP costs and benefits and offered considerable rewards for superior outcomes. Each of the PV cases improved production quality while reducing inventory levels and unit costs. Post-ERP performance improvements in SOEs were less impressive. Although cost reductions were common, quality or supply chain enhancements were rare. The entrenched mind-sets of SOE managers and workers were identified as a major obstacle to fully realizing the potential benefits of ERP.



ERP implementations in China: Eight differences between private ventures and state enterprises.

Conclusion

Davison [1] contends that an awareness of cultural differences is critical to ERP success—the evidence from China supports this contention. ERP developers and consultants certainly need to adapt their products and services to different national contexts, and to different types of organizations within a single country.

Markus [3] argues that ERP is more than a software package, suggesting it represents a specific paradigm or mind-set. My results support her argument. The business models underlying ERP packages reflect European or U.S. industry practices [9] while the ERP concept fits the management mind-sets and organizational behaviors commonly found in Western economies.

The eight differences summarized in the figure here indicate a poor fit between ERP and the Chinese SOE context. What if the misfit between ERP and traditional Chinese management systems [5] is a fundamental incompatibility that cannot be resolved?

Such an incompatibility would sustain the distinctive pattern of IT application in the Chinese business context [7]. More generally, it raises questions about the adoption of Western business practices by Chinese SOEs. Two alternative futures can be envisioned for Chinese SOEs. ERP implementations, invariably triggered by external pressures, would change the SOEs dramatically by formalizing, standardizing and (at least partially) automating their business processes. Increased competitiveness would offset labor substitution and stimulate economic development.

Alternatively, these traditional Chinese organizations would continue to rely largely upon personal relationships and actively resist change. The consequences of this resistance, in terms of foregone competitiveness and mass unemployment, may threaten not only further development of the Chinese economy, but the very stability of Chinese society. C

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