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## ABSTRACT

We attempt to understand how external institutional forces affecting ERP assimilation within organizations need not impact all organizations uniformly but instead can be moderated by the enterprises' knowledge-based capabilities. Building on an institutional model of ERP assimilation, we investigate the role of absorptive capacity (ACAP) in ERP assimilation. Specifically we examine how the ACAP of an organization can enhance or retard the effect of institutional forces on the degree of ERP assimilation. Following a recent framework we operationalize ACAP as potential ACAP (PACAP) and realized ACAP (RACAP) and find that both dimensions affect ERP assimilation in different ways. While both, PACAP and RACAP, have a direct positive impact on assimilation, PACAP moderates the impact of mimetic forces on assimilation whereas RACAP moderates the effect of normative pressures. While we find overall a strong support for our hypothesized model, interestingly, we also find that RACAP negatively moderates the effect of mimetic pressures on assimilation. We discuss the contributions of this study to a better understanding of IT assimilation processes.

**Keywords:** Absorptive capacity, ERP, assimilation, institutional forces, learning, China

### INTRODUCTION

In recent years IS scholars have shown a growing interest in using social and organizational theories to study technology assimilation and adaptation in the post adoption and implementation phases of large-scale enterprise systems. For example, Gosain (2004) explains how and why institutional forces are active even during the post-adoption stages of ERP systems. A recent study also tests the assertions that ERP implementation benefits would be high under high sub-unit interdependencies and low differentiation (Gattiker and Goodhue 2005). Another study analyzes the learning processes of individual users as they begin to use an ERP system. Considering the mediating role of top management, Liang et al. (2005) further extend this stream of research by showing how external institutional forces affect assimilation after implementation is complete.

While many recent studies stress the significant role of external institutional pressures during IT adoption and implementation, others have emphasized the importance of firms' learning capabilities (Attewell 1992; Cooper and Zmud 1990). Learning-related constructs continue to figure prominently in IT assimilation models (Armstrong and Sambamurthy 1999; Boudreau and Robey 2001; Fichman and Kemerer 1997; Teo et al. 2003a). While we are mindful of the learning perspective in IS studies of post-implementation issues, in this study we attempt to reconcile these with the role of institutional forces active during this stage. Our approach also follows a recent call in organizational literature to achieve synthesis between the deterministic effects of institutions and the emergent effect of organization-specific learning on innovation diffusion (Van de Ven and Hargrave 2004). More specifically, we attempt to understand how an enterprise's learning capacity helps it to achieve conformity with external institutional influences. Therefore, our research question is: *how do the learning capabilities of an organization affect the relationship between external institutional pressures and the degree of assimilation of the enterprise systems in their post-implementation stage?*

Combining the institutional perspective with the learning perspective provides us with an opportunity to close a theoretical gap in literature and to shed more light on the innovation assimilation processes. This is because the evidence on how learning capabilities affect assimilation is relatively rare and quite scattered. For example, Armstrong and Sambamurthy (1999) find partial support for the knowledge-related construct during IT assimilation. A study of the post-implementation ERP context reveals that situated learning is more useful than formal training (Boudreau and Robey 2001). In a study of financial EDI, absorptive capacity, a construct that signifies an organization's ability to apply an innovation towards

performance, is indirectly found to be significantly affecting adoption of EDI technology, but its direct effect on adoption is not supported (Teo et al. 2003a). Another recent study further finds that legitimacy factors are important for participation in B2B marketplaces but not for usage (Son and Benbasat 2004). We believe that a deeper understanding can be gained by studying the interaction between institutional forces and learning capabilities.

## THEORY DEVELOPMENT

In view of our focus on the post-implementation stage of ERP systems, we adopt the definition of assimilation by Purvis et al. (2001) as "the extent to which the use of technology diffuses across the organizational projects or work processes and becomes routinized in the activities of those projects and processes." This definition of assimilation corresponds to the "shakedown" and "onward and upward" stages of the ERP life cycle model proposed by Markus and Tanis (2000), our interest in this research.

The key objective during the post-implementation stage is to assimilate the technical features of an ERP system into the business routines so that the expected benefits of ERP can be actually realized. At this stage, the involvement of the vendors is significantly lowered and the system is considered officially "rolled out" for regular usage by the operational-level users. Most of the radical customizations such as process conversion and reengineering are complete at this stage (Luo and Strong 2004). As the initial implementation ends, organizations typically try to ensure that a sufficient amount of knowledge about the ERP system usage has been transferred from the vendors and consultants to the end users. Power users, i.e., users who are technically savvy about the ERP system, are identified to help their peers adapt, and sufficient training resources are committed to reinforce the changes (Somers and Nelson 2004).

### Absorptive Capacity of Organizations and ERP Assimilation

Recent work by Zahra and George (2002) asserts that absorptive capacity has two dimensions. First, *potential absorptive capacity* (PACAP) of an organization refers to its receptiveness towards acquiring and assimilating external knowledge. However, such receptiveness alone cannot guarantee that an organization will be able to exploit external knowledge. PACAP may, at best, enable an organization to value and acquire external knowledge but not necessarily exploit it. *Realized absorptive capacity* (RACAP) complements PACAP in this regard. RACAP refers to the transformation and exploitation capabilities of an organization. The distinction was proposed because "it was observed that some firms possessed strong ingenuity to understand complex technical problems but were not as effective in translating such knowledge into product innovation strategies" (p. 191). The two dimensional conceptualization of ACAP is also somewhat consistent with the inward-looking and outward-looking absorptive capacities proposed by Cohen and Levinthal (1990).

Consideration of both dimensions of absorptive capacity is important precisely because of the challenge faced by most firms in harnessing these dimensions. One would expect that since large firms have slack resources and thus higher PACAP (e.g., access to IT manpower and technical resources including vendors and consultants), they are less likely to face such implementation failures. But their implementation failure suggests that apart from PACAP, the presence of requisite knowledge-structures (RACAP) may also enhance their ability to assimilate enterprise systems. At the organizational and sub-unit level, the structural, cognitive and relational dimensions of inter-unit ties represent the knowledge structures, which enhance the creation of intellectual capital (Nahapiet and Ghoshal 1998). These knowledge structures essentially refer to the commonality among sub-units in terms of their understanding of the ERP system, or readiness towards assimilating the new system.

We argue that the lack of a sufficient level of PACAP and RACAP precludes users' comprehension of the ERP system in terms of the cross-unit interdependencies (Baskerville et al. 2001). Since the ERP system is a complex innovation, its complete assimilation requires users to engage in learning-by-doing. Training sessions generally oriented towards stimulating learning-by-doing therefore serve to enhance an organization's PACAP. Similarly, lack of who-knows-what knowledge retards problem solving when users encounter bottlenecks during usage of the system. The users' comprehension of cross-unit interdependencies is facilitated when all departments have a common understanding of the broader objectives and implications of system. This encourages cross-unit interactions between individuals regarding adapting the work processes to the new system. A lack of PACAP and RACAP is more likely to lead users to continue maintaining their shadow systems (i.e., legacy systems) which they are very accustomed to (Boudreau and Robey 2001). A tendency to devise workarounds, and thus avoid assimilating the ERP completely, is heightened due to the risk-averseness of the users. Risk arises because, irrespective of how the ERP eventually performs, users themselves are accountable for any operational errors in fulfilling customer orders, making inventory decisions, payments, etc. Therefore, we expect:

*Hypothesis 1: The absorptive capacity of an enterprise has a positive and significant influence on the level of ERP assimilation in the enterprise.*
*Hypothesis 1a: Higher level of potential absorptive capacity will lead to higher level of ERP assimilation in the enterprise.*
*Hypothesis 1b: Higher level of realized absorptive capacity will lead to higher level of ERP assimilation in the enterprise.*

**Moderating Effects of Absorptive Capacity on Institutional Forces**

The role of external institutional pressures in ERP assimilation processes is closely related to the characteristic of complex innovations such as enterprise systems in the sense that outcome uncertainties and goal ambiguities arising during its assimilation renders the organization acquiescent to institutional pressures (Gosain 2004). These systems contain commoditized knowledge (e.g., best practices packaged by its vendors) which potential users need to "unpack" and integrate with existing organizational knowledge (Davenport 1998). However, the so-called "best practices" embedded in ERP systems cannot provide a generic solution to all users (Newell et al. 2000; Swan et al. 1999). During the process of ERP assimilation, users need to figure out when to modify existing business processes and when to alter the ERP system. These incremental adjustments to system and processes are equally important and continue after initial implementation (Hirt and Swanson 2001; Markus and Tanis 2000).

Even if enterprises are exposed to isomorphic pressures, the organization-specific peculiarities of the IT assets create uncertainties and goal ambiguities which lead to deviations from the deterministic effect of these pressures. Thus, enterprises are not *uniformly* acquiescent towards isomorphic pressures. Therefore, it is necessary to hypothesize the role of absorptive capacity of organizations and how it moderates the change potentially imposed by institutional pressures. In our model we are only interested in considering the mimetic and normative pressures since enterprises can exercise discretion in the extent to which they let these pressures influence ERP assimilation. We presume the effect of coercive pressures is not of interest to us.

*Mimetic Forces*

Mimetic mechanism operates when, under conditions of outcome uncertainty, organizations model themselves after other organizations in their field perceived to be successful. Besides, conferring legitimacy which is a key imperative for organizational actors, imitation also helps them to economize on search costs, and reduce the uncertainty related to the outcomes of their decisions. By nature, imitation has been found to occur between *role-equivalent* organizations, i.e., competitors or firms competing for similar resources (Burt 1987). A competitor being successful suggests to the observers that one of the factors that contributed to its success could have been the innovation under consideration (Strang and Macy 2001). Researchers also explain mimetic effects as an organization's tactic for reducing its search costs. In the ERP context, search costs are related to an ERP adopter trying to understand whether to fully embrace the ERP features. A competitor's decision to adopt an ERP is a signal that this product is viable. As the ERP vendor achieves higher credibility its obsolescence becomes less likely which in turn creates indirect network externalities (Katz and Shapiro 1985) by encouraging providers of IT components to create compatible systems[1]. It leads to an increase in the pool of trained implementers and consultants. An ERP adopter looks for signs of a vendor's product achieving the status of the dominant design (Suarez and Utterback 1995). Therefore a successful competitor adopting that vendor's product is a signal to the ERP adopter to assimilate the new system as fully as possible.

While mimetic pressures may directly influence organizations to adopt popular products (Teo et al. 2003b), we argue that its impact during post-implementation is not the same. In this stage, *learning-by-using* and *learning-by-doing* become the paradigms under which organizations transition from receiving support from consultants and vendors to self-support and self-service (Attewell 1992). This "reinvention" of its ERP system by a focal organization in terms of mimicking the assimilation levels of competitors (and other "structurally equivalent" organizations), could be enhanced or constrained by the absorptive capacity of the focal organization. In other words, even if an organization wants to mimic other organizations in terms of their ERP usage levels, it may not be able to do so unless it has the requisite level of absorptive capacity. Indeed a recent study finds that mimetic pressures may impact selection of IT applications but not usage (Son and Benbasat 2004). We propose that usage may be affected by mimetic pressures but the degree of assimilation is moderated by absorptive capacity.
*Hypothesis 2: Absorptive capacity of an organization positively moderates the effect of mimetic forces on the degree of ERP assimilation in post-implementation phases.*

[1] The large-scale announcements of ERP vendors regarding purchase of their product by a large client are an indicator of the significant positive gains accruing to the vendor other than the immediate revenue generation.

*Hypothesis 2a: Potential absorptive capacity positively moderates the effect of mimetic forces on the degree of ERP assimilation in post-implementation phases.*
*Hypothesis 2b: Realized absorptive capacity positively moderates the effect of mimetic forces on the degree of ERP assimilation in post-implementation phases.*

*Normative Forces*

Normative influences arise from the professionalism of organizational actors in the extended network of organizations. These networks (or organizational fields as the term coined by DiMaggio and Powell (1983)) differ depending on the type of industry. In industries where training and formal education are highly important, the normative influences manifest when personnel embedded in their professional networks transmit norms to peers across organizations. For other industries, the organizational fields may consist of suppliers, customers, regulatory agencies, etc. These influences are different from the mimetic influences in that these are considered to result from *agreement* among the members of the organizational fields, i.e., these influences have more rational bases than mimetic influences.

A consequence of the uncertainty regarding the degree of adaptation during ERP assimilation is that users tend to rely more on the professional norms that propagate throughout the community network of suppliers and customers (Swanson 1997). These are external entities in the highest proximity to the users in the post-implementation stage. In this type of environment, the organizing vision (Swanson, 1997) becomes a significant force that shapes individual beliefs, attitudes, and ultimately behavior. We argue that norms accepted in the subset of external entities - suppliers, customers and partners - of the industry-wide community, have a significant influence on the assimilation of the ERP system within the organization. These norms guide the users about the extent to which they should adapt their work routines to the ERP package and conversely what features of the ERP package can be modified to suit their needs.

In the ERP context, such norms signify the likely technological trajectory of the majority of the user organizations and therefore are believed to be important to adhere to. This is because it is uncertain at what point in time, the business activities of suppliers, customers and other partners become interdependent (Swanson 1997), at which time effecting change quickly to be compliant with the norms, may be costly. In the absence of norms or if the norms are weak, then the uncertainty faced by users and managers of the ERP systems will be higher rendering them directionless to a certain extent, in terms of specific adaptations.

We argue that in the case of complex innovations, the absorptive capacity of an organization helps it to sift, filter and absorb the extensive amount of normative information about using the ERP system that is acquired from the members of organizational fields. Thus, even though organizations may be exposed to normative pressures about using and deriving benefits from ERP it is their absorptive capacity that helps them to apply that vision and accordingly adapt the artifact. In other words, we argue that it is the combination of normative pressures moderated by absorptive capacity that results in higher assimilation.
*Hypothesis 3: Absorptive capacity positively moderates the effect of normative forces on the degree of ERP assimilation in post-implementation phases.*
*Hypothesis 3a: Potential absorptive capacity positively moderates the effect of normative forces on the degree of ERP assimilation in post-implementation phases.*
*Hypothesis 3b: Realized absorptive capacity positively moderates the effect of normative forces on the degree of ERP assimilation in post-implementation phases.*

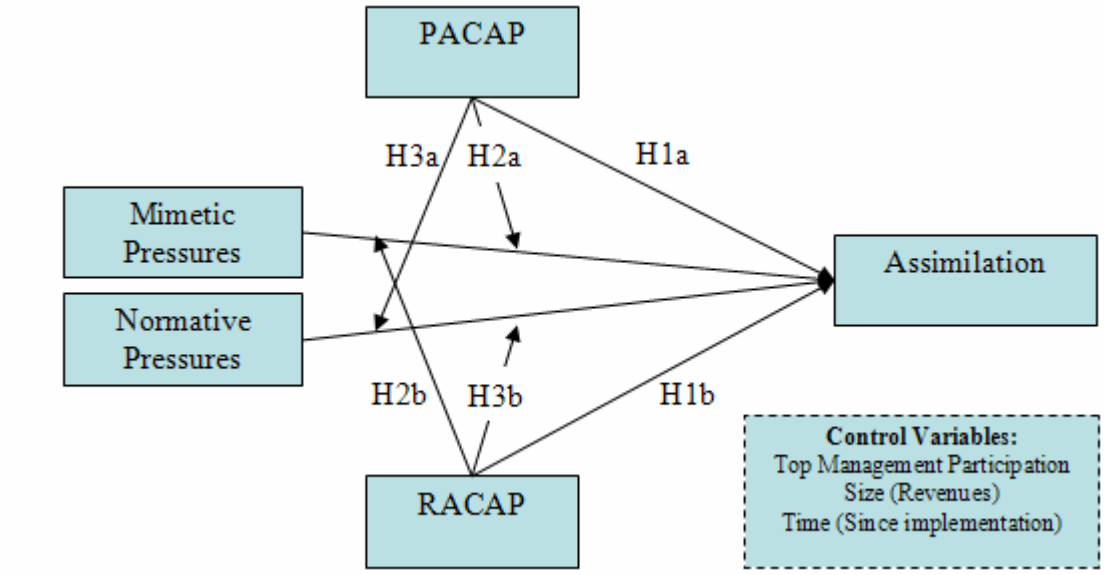
**Control Variables**

We expect from prior extensive IS literature that top management participation would significantly explain some variance in the degree of assimilation[2]. We use the revenue as a measure of organizational size. Just as organizational size connotes slack resources required for purchasing expensive innovations and withstanding adoption failures (Rogers 1983), bigger size permits organizations to foster adaptation mechanisms such as maintaining shadow systems and slow phasing out of legacy systems. Whereas larger organizations can withstand such implementation hurdles by virtue of their size, for smaller

[2] To be consistent with a recent study on ERP assimilation where top management participation is included as a mediator Liang, H., Saraf, N., Hu, Q., and Xue, Y. "Assimilation of enterprise systems: The effect of external institutional pressures and the mediating role of the top management," in: *under third round of review at MIS Quarterly*, 2005., our model testing will also include effect from such recent findings by including a path from top management participation to ERP assimilation.

organizations survival is the more immediate concern and therefore any ERP implementation hurdle has immediate repercussions on their business commitments to customers and suppliers. Organizational slack is an important control variable for another reason. ERP system vendors have more at stake by being attentive to their larger clients compared to their smaller ones (Carmel and Sawyer 1998). Our third control variable is time since implementation to control for the natural learning that occurs with time. Figure 1 depicts the model implied by our hypotheses.

**Figure 1: Research Model**




## RESEARCH METHOD AND DATA

### Instrument

We chose an ERP system as the test case because even though ERP systems have been adopted world-wide, their failure rate is significantly high and the consequences are often severe (Markus and Tanis 2000). We first conducted a literature review to identify measurement items for the proposed constructs in our research model (Table 2). Some modifications were made to make the scales more suitable in the context of ERP assimilation. Since the target organizations were the companies that had implemented ERP systems in China, the questionnaire was translated and a panel of experts in the Chinese ERP industry examined the face validity of the items. A few changes to the scales were made to match the Chinese context.

All of the extraneous constructs in the model are operationalized (except ERP assimilation) as reflective constructs. All of the items of reflective constructs were evaluated on a 5-point Likert scale on which 1 means "strongly disagree" (or "very low") and 5 means "strongly agree" (or "very high"). The dependent construct, ERP assimilation, was operationalized as a formative construct.

### Data Collection

The survey was administered to managers in Chinese companies which have implemented ERP systems. A sample was drawn from the clients of UFIDA (named as UFSoft before 2005), a vendor which has the largest market share in China's ERP market (Liang et al. 2004). We requested a marketing manager at UFIDA to randomly distribute 100 questionnaires to the directors of its 14 subsidiaries and 15 offices. These subsidiaries and offices are located in China's four largest cities, three autonomous regions, and 17 provinces, representing a wide range of geographical and cultural diversity. Each of the 29 directors randomly selected some ERP customers from his or her region and handed questionnaires to the persons who supervised the ERP projects in these companies. This data collection method is recommended by IT researchers and practitioners in China to address the cultural features and ensure the high response rate.

| Construct | References |
|---|---|
| **ERP assimilation**<br>***Volume***: The average extent to which each business process was conducted using ERP (%).<br>***Diversity***: The number of functional areas automated by the ERP.<br>***Depth***: The nature of usage varying from simply planning to more sophisticated usage such as decision making, planning and operation. | Hart and Saunders (1998), Iacavou et al. (1995), Massetti and Zmud (1996) |
| **Top management participation**: The extent to which senior management actively managed the ERP assimilation process. | Chatterjee et al. (2002) |
| **Mimetic pressures**: Perceived success enjoyed by their competitors who adopted ERP. | Teo et al. (2003b). |
| **Normative pressures**: Perceived influences from professional networks, industry associations, and common educational background. | |
| **Absorptive capacity (ACAP)**: The extent to which an organization possesses the requisite know-how for assimilating the ERP artifact. | Attewell (1992), Teo et al. (2003a) Zahra and George (2002), Robey et al. (2002) |

**Table 1. Construct Operationalization**

| | | |
|---|---|---|
| PACAP | ABC1 (support) | 1. It is well known who can help solve problem associated with the ERP package.<br>2. Our company can provide adequate technical support to using ERP.<br>3. Our company obtained enough knowledge about using ERP from the ERP vendor. |
| | ABC3 (training) | 1. Our company provided ERP training opportunities to employees on a regular basis.<br>2. The IT department provided specific information on using different ERP modules. |
| RACAP | ABC2 (coordination) | 1. All departments in our company were able to use common language to talk about ERP usage<br>2. All departments in our company had a clear understanding about the goal of using ERP<br>3. Our company had the ability to manage interdepartmental issues relating to ERP usage |

**Table 2: ACAP Sub-Constructs**

Of the 100 questionnaires distributed, 80 questionnaires were returned and 77 questionnaires were completed and usable for data analysis, showing an effective response rate of 77.0%. We assessed non-response bias using Chi-square tests or t-tests to compare the responding and non-responding companies' business type, ownership, revenue, and number of employees and found no significant differences ($p > .05$). The average annual income is US dollar 48.47 millions and the number of employees is 881. All respondents have senior level designations in their company. Fifty two companies are in the manufacturing sector and 21 in the service sector. Mean time since ERP implementation was 21.88 months.

## RESULTS AND ANALYSES

Partial Least Square (PLS) was chosen for data analysis. All the reliability coefficients are above .70 and each AVE is above .50 and thus the latent construct can account for at least 50% of the item variance. Factor loadings are in an acceptable range and are significant (p=.01) (see appendix). The square root of the AVE of a construct is greater than it's the inter-construct correlations (see appendix for more details). All these steps suggest good discriminant and convergent validity of the model constructs which was also confirmed using a cross-loadings table (Gefen et al. 2000). Overall, the $R^2$ value of .614 indicates that the model explains a good amount of variance in ERP assimilation (Figure 2).

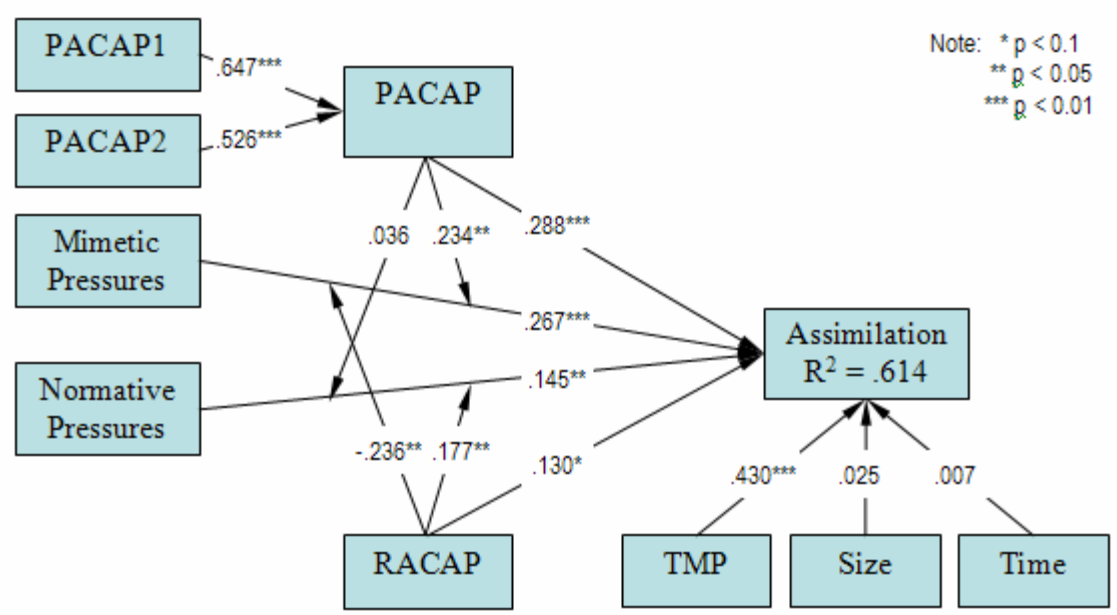



**Figure 2. PLS Results**

Overall, our approach of distinguishing between PACAP and RACAP has proved useful in teasing out the impact of knowledge-related factors on ERP assimilation. Both hypothesized direct effects are significant (H1a (0.288) and H1b (0.13)). Following Chin et al. (2003), we tested the four hypothesized moderating effects and found support for two (H2a and H3b). PACAP indeed strengthens the effect of mimetic pressures on the degree of ERP assimilation. Similarly, RACAP strengthens the effect of normative pressures. As Chin et al. (2003) suggested, we calculated Cohen's effect size to confirm the overall moderating effects. The Cohen's effect size was 0.253, indicating the existence of strong moderating effect.

$$\textit{Cohen's } f^2 = R^2 \textit{ (interaction model)} - R^2 \textit{ (main effects model)} / [1 - R^2 \textit{ (main effects model)}]$$

Surprisingly, we find that the moderating effects of PACAP and RACAP on ERP assimilation vary. PACAP does not strengthen the effect of normative pressures which goes against our expectations whereas RACAP weakens (significantly) the effect of mimetic pressures. An explanation of the negative moderation could be that enterprises having highly developed RACAP have no need to mimic other organizations, which is counter-intuitive but in retrospect quite possible. For example, one can naturally expect organizations having high IT expertise to avoid relying on mimicry to reduce their search costs for IT solutions. Rather, instead of mimicking, high RACAP organizations are more likely to evaluate industry norms judiciously before adopting them. Therefore, the RACAP moderates the Normative to Assimilation link. A reason why PACAP has no effect on the Normative to Assimilation link could be that a high PACAP in itself implies high normative content of the ERP training (from consultants and technical specialists) which possibly conflicts with industry norms from suppliers and customers. In summary, our results suggest that the promised benefits of ERP can be realized when organizations focus on developing both, PACAP and RACAP, since these capabilities either directly or indirectly affect the degree of ERP assimilation.

## DISCUSSION

This is one of the first studies which integrate two streams of research on technology assimilation, one that is based on the institutional theory and the other based on organizational learning. In doing so, a more complete and accurate picture of complex technology assimilation in organizations is revealed. Our findings suggest that while institutional forces, including mimetic and normative pressures are the drivers of the organizational change in accommodating for and adapting to new technologies, these forces are nonetheless either enhanced or retarded by the organizations' ability to acquire, assimilate, transform, and exploit the new technology. We believe these findings contribute to the literature on technology assimilation and the management practices. However, to the extent that the Chinese context differs culturally from other industry settings, our findings have limited generalizability.

The existence of two different streams of literature, one that explains change as resulting from institutional influences and

another that explains change as resulting from firm's learning capabilities (and guided by its strategy to achieve relative advantage), has led scholars to reconcile the two perspectives (Van de Ven and Hargrave 2004). The co-existence highlights the duality between structure and action. Structural forces by definition affect all organizations equally and therefore are more likely to lead to isomorphism whereas internal organizational capabilities are the ones that lead to differential advantage (Van de Ven and Hargrave 2004). The argument we present towards reconciling these two perspectives is that much of the IT-related adaptations organizations engage in, is not only as a response to external institutional pressures but also moderated by the organization's absorptive capacity.

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# APPENDIX

## Correlations among Constructs

| Construct | Reliability | TMP | MEM | NOR | PACAP1 | PACAP2 | RACAP | Assim |
|---|---|---|---|---|---|---|---|---|
| TMP | .839 | **.637*** | | | | | | |
| MEM | .851 | .230 | **.658*** | | | | | |
| NOR | .906 | .084 | .326 | **.763*** | | | | |
| PACAP1 | .839 | .164 | .139 | .167 | **.636*** | | | |
| PACAP2 | .891 | .351 | .358 | .235 | .447 | **.804*** | | |
| RACAP | .883 | .305 | .361 | .300 | .558 | .467 | **.719*** | |
| Assim. | .817 | .530 | .389 | .328 | .412 | .442 | .348 | **n/a** |

* AVE of each construct

## Factor Loadings of the Indicator Variables

| **Construct** | **Indicator** | **Mean** | **SD** | **Loading** | **T-value** |
|---|---|---|---|---|---|
| TMP | TMP1 | 3.78 | .74 | .829 | 16.509 |
| | TMP2 | 3.82 | .66 | .866 | 24.730 |
| | TMP3 | 3.87 | .73 | .716 | 4.515 |
| Mimetic pressure | MEM1 | 3.34 | .72 | .728 | 6.779 |
| | MEM2 | 3.61 | .63 | .856 | 18.513 |
| | MEM3 | 3.35 | .60 | .844 | 16.492 |
| Normative pressure | NOR1 | 2.43 | .83 | .874 | 17.704 |
| | NOR2 | 2.77 | .84 | .922 | 35.208 |
| | NOR3 | 3.65 | .84 | .821 | 9.457 |
| PACAP1 | PA11 | 3.75 | .84 | .846 | 23.165 |
| | PA12 | 3.45 | .90 | .847 | 25.295 |
| | PA13 | 3.44 | .88 | .692 | 5.464 |
| PACAP2 | PA21 | 3.10 | .89 | .874 | 28.270 |
| | PA22 | 3.35 | .82 | .918 | 31.429 |
| RACAP | RA1 | 2.88 | .88 | .727 | 5.915 |
| | RA2 | 3.32 | .99 | .913 | 19.678 |
| | RA3 | 3.58 | .87 | .890 | 12.786 |
| Assimilation | Volume | 54% | 21% | n/a | n/a |
| | Diversity | 2.92 | 1.68 | n/a | n/a |
| | Depth | 2.60 | .63 | n/a | n/a |