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PLATFORM-ENABLED AMBIDEXTERITY

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ABSTRACT

Firms bogged down with organizational inertia are unable to gain the competitive advantage other firms can achieve through organizational ambidexterity. By definition, firms experiencing high levels of inertia are unable to rapidly adapt and change as their needs dictate. This research addresses the question of “How can firms experiencing organizational inertia achieve ambidexterity?” In doing so, the role of IT as a digital options generator is explored and the concept of platform-enabled ambidexterity is introduced.

Keywords

IT platforms, inertia, ambidexterity, digital options, alignment, adaptability

INTRODUCTION

Organizations are increasingly adopting and relying on different types of information technology (IT) platforms. They do so for a variety of reasons. Doing so may allow a firm who may not have knowledge and experience in a particular area to tap into and leverage the expertise of the original platform designers (Tiwana, Konsynski and Bush, 2010). It may also give the firm access to new innovations stemming from independent hardware and software developers that have been granted access to the platform (Boudreau, 2010). One example of this can be seen in the explosion of new innovation stemming from development on Google’s Android, now the world’s leading smartphone platform. Smart phone vendors such as LG, Samsung, Acer and HTC are greatly benefiting from the Android platform (Canalys, 2011).

IT platforms are defined as the extensible codebase of a software-based system that provides core functionality shared by the modules that interoperate with it and the interfaces through which they interoperate (Tiwana et al., 2010). IT platforms can help organizations integrate and align a variety of business functions, but they also need to be adaptable to meet the ever changing technology needs of the organization. However, how well or how poorly a particular IT platform can respond to the dynamics of the environment in which it is utilized can be influenced by the platform designers’ technical choices (Tiwana et al., 2010). To this extent, this paper suggests and develops the notion that IT platforms can either enable or disallow firms to become more aligned and more adaptable—referred to herein as achieving IT platform-enabled ambidexterity. This represents an important gap in our understanding of the impact a particular IT platform can have on an organization. Current research does not identify *how* IT platforms can be leveraged to help make organizations ambidextrous.

To address this gap, this research brings into forefront the IT artifact as IT platforms can be embedded with a range of real options which can be leveraged to achieve IT platform-enabled alignment and IT platform-enabled adaptability. Digital options—IT capabilities in the form of digitized capital—can be a valuable asset if they are properly exercised. Knowing the specific options that can be exercised depends on both the IT platform in which they reside and the ability of the firms to know when to exercise them. However, inertial forces which may interact with this association may help or hinder an organization’s ability to leverage their digital options. Thus, different levels of organizational inertia will have a different impact on a firm’s ability to leverage their IT platform-enabled digital options to achieve the combination of IT platform-enabled alignment and IT platform-enabled adaptability to achieve IT platform-enabled ambidexterity. This research in progress paper uses the following research question to begin to address this interacting association: *What effect does organizational inertia have on a firm’s ability to exercise the digital options embedded within an IT platform to achieve IT platform-enabled ambidexterity?*

THEORY AND HYPOTHESIS DEVELOPMENT

IT Platform-enabled ambidexterity

Organizational contextual ambidexterity is defined as the behavioral capacity to simultaneously demonstrate alignment and adaptability across an entire business unit (Gibson and Birkinshaw, 2004). Research has shown that elements that focus on alignment promote coherence among goals and activities and the efficient utilization of resources, whereas elements that

focus on adaptability promote responsiveness to opportunities through innovation and reconfiguration (Im and Rai, 2008). Successful organizations (i.e., those that are able to remain competitive in dynamic environments) excel in their ambidextrous ability to remain efficiently aligned in the management and coordination of business activities, while remaining flexible and adaptive—to meet changing demands in the task environment, or to detect and seize opportunities for innovation—by assembling or reconfiguring requisite assets, knowledge, and relationships with speed and surprise (Sambamurthy, Bharadwaj and Grover, 2003). Conceptualized as being comprised of the non-substitutable combination of alignment and adaptability, ambidexterity is a desirable capability that organizations can strive to develop (Gibson and Birkinshaw, 2004; Im and Rai, 2008; Tiwana, 2010).

To refine the focus of this research, this paper takes the position that the current conceptualization of ambidexterity can be narrowed to specifically focus on the capabilities of the technology platform, rather than the capabilities of the employee base. IT Platform-enabled ambidexterity is herein referred to as the extent to which an IT platform has the capacity to simultaneously support IT platform-enabled alignment and IT platform-enabled adaptability. This definition will be expanded upon as the concepts of IT “platform-enabled” alignment and adaptability are discussed. Briefly previewed, the conceptualization for IT platform-enabled alignment stems from literatures of IT alignment and IT system integration. The conceptualization for and IT platform-enabled adaptability stems from the literatures of IT agility and IT architecture modularity. The definitions will consist of a thematic (i.e., support goals and objectives) component and a more functional or technological (i.e., integrate data and communication technology) component.

IT Platform-enabled Alignment

In general, alignment refers to coherence among all the patterns of activities in the business unit; they are working together toward the same goals (Gibson and Birkinshaw, 2004). Extending the definition, IT alignment refers to the degree to which the IT function supports the goals and priorities of an organization’s line functions (Chan and Reich, 2007; Tiwana and Konsynski, 2010). Research has often viewed IT alignment as a static end-state in which mature organizations are able to align organizational IT functionalities to support and coincide with organizational objectives. (Sabherwal and Chan, 2001)

Organizations looking to achieve alignment with partners can do so through IT system integration. IT system integration is defined as the ability of a firm to integrate data, communication technologies, and transaction and collaboration applications with its partners (Barua et al., 2004; Broadbent et al., 1999; Rai and Tang, 2010). This paper’s conceptualization of IT platform-enabled alignment encompasses and reconciles the IT alignment (thematic) conceptualization with the IT system integration (functional) conceptualization. Formally stated, IT platform-enabled alignment refers to the degree to which an IT platform supports the goals, objectives and activities of a business unit through the inter and intra-organizational IT platform capability to integrate data, communication technologies, and transaction and collaboration applications. In defining the IT platform-enabled alignment conceptualization in this way, this research strives to reconcile the overlapping similarities in the IT alignment literature stream and the IT systems integration literature stream. It does so by extending the alignment concept (i.e., the behavioral capacity of employees) to include the more functional integration components resulting into a technology centered, IT platform-enabled alignment concept (i.e., the functionality and capacity of technology).

IT Platform-enabled Adaptability

In general, adaptability refers to the capacity to reconfigure activities in the business unit quickly to meet changing demands in the task environment (Gibson and Birkinshaw, 2004). This conceptualization overlaps with the concept of agility. Agility refers to the ability to detect opportunities for innovation and seize those competitive market opportunities by assembling requisite assets, knowledge, and relationships with speed and surprise (Goldman et al., 1995). This overlap is especially apparent when taken specifically in a technology context, as IT agility is defined as the capacity of the IT function to rapidly adapt to changing line function demands (Tiwana and Konsynski, 2010). This research strives to reconcile these overlapping literature streams to inform the definition of IT platform-enabled adaptability. From these overlapping literatures, the definitive thematic elements for the platform-enabled adaptability conceptualization are drawn.

For the more functional and technological components of our conceptualization of IT platform-enabled adaptability, this paper focuses on Tiwana and Konsynski’s (2010) assessment of IT architecture modularity. IT architecture modularity is defined as the degree of decomposition of an organization’s IT portfolio into loosely coupled subsystems that communicate through standardized interfaces. Standard interfaces or standardization refers to the degree to which organization wide standards and policies pre-specify how applications in an organization’s IT portfolio connect and interoperate with each other (Weill and Ross, 2005, Tiwana and Konsynski, 2010). Loose coupling refers to the extent to which an organization’s IT architecture applications are designed such that internal changes in one application do not affect the behavior of others (Fowler, 2001; Nambisan, 2002, Tiwana and Konsynski, 2010). Loosely coupled organizational forms allow organizational

components to be flexibly recombined into a variety of configurations (Hoetker, 2006), and thus provides greater adaptability.

IT platform-enabled adaptability encompasses the elements of IT agility and IT architecture modularity to extend Gibson and Birkinshaw's (2004) conceptualization of adaptability. It moves beyond the behavioral capacity of employees to bring focus on the functionality and capacity of the IT platform. Formally stated, IT platform-enabled adaptability refers to the degree to which an IT platform uses loose coupling and standard interfaces to support, extend, adapt, recombine, and reconfigure organizational activities, functionalities, and resources.

Thus follows this research's conceptualization of IT platform-enabled ambidexterity. **IT platform-enabled ambidexterity** is defined as the extent to which an organization's IT platform has the capacity to simultaneously support **IT platform-enabled alignment** (i.e., the degree to which an IT platform supports the goals, objectives and activities of a business unit through the inter and intra-organizational platform capability to integrate data, communication technologies, and transaction and collaboration applications) and **IT platform-enabled adaptability** (i.e., the degree to which an IT platform uses loose coupling and standard interfaces to support, extend, adapt, recombine, and reconfigure organizational activities, functionalities, and resources).

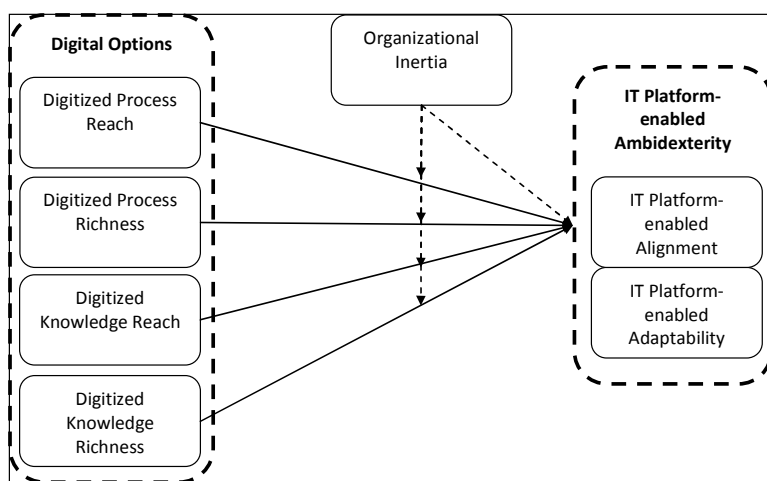


Figure 1 Research Model

ORGANIZATIONAL INERTIA

Research has suggested that ambidexterity is a desirable capability that organizations can develop (Gibson and Birkinshaw, 2004; Im and Rai, 2008; Tiwana, 2010). Likewise this research suggests the same for IT platform-enabled ambidexterity. However the extent to which any particular firm—using any particular IT platform—can achieve and benefit from IT platform-enabled ambidexterity will differ. This is especially important for the change resistant firm experiencing high levels of organizational inertia. The existence of inertia within an organization—a concept that has remained largely undeveloped and untested—creates an environment of inflexibility in which the firm is unable to adapt and change in an efficient manner. Conceptually, firms experiencing inertia should exhibit high levels of alignment but low levels of adaptability. Because of this, they should face difficulty when trying to achieve the more generalized state of ambidexterity as it is conceptualized as being comprised of the nonsubstitutable combination of alignment and adaptability. Regrettably for firms entrenched with organizational inertia, the actual realization of this advantage will require a lengthy and protracted investment as inertial tendencies dramatically, albeit negatively, impact the rate of change of various dimensions of functionality (Nickerson and Zenger, 2002).

Organizational Inertia is defined as the gradual manner with which the informal organization responds to changes in formal structure (Nickerson and Zenger, 2002). Research on organizational design has viewed organizational inertia as an explanation for why firms either delay or completely fail to respond to changes in competitive pressure. It is seen as a primary antecedent of numerous negative consequences such as impaired performance and organizational mortality (Gresov, Haveman and Oliva, 1993). Common usage of the term inertia refers to the tendency of an object to not move or act—a property by which an object or system will remain at rest (if resting) or continue movement (if moving) without deviance from its current trajectory. In order to change its projected path, tremendous external forces must be enacted upon an object with high levels of inertia. Thus, inert bodies—or in this case organizations—are change resistant.

Figure 1 is the proposed research model for IT platform-enabled ambidexterity. The model proposes that the digitized knowledge and process capital (measured in reach and richness) embedded within an organization's digital options are positively associated with IT platform-enabled ambidexterity. Additionally it is proposed that organizational inertia—hypothesized to negatively associate with IT platform-enabled ambidexterity—moderates the relationship between an organization's digital options and IT platform-enabled ambidexterity such that as the strength of organizational inertia increases (or decreases) the positive relationship between each type of digital option and IT Platform-enabled ambidexterity becomes weaker (or stronger).

As organizations grow or age, they become more rigid and change resistant, as complex interdependent relationships are forged between and within numerous organizational activity systems. As inertia increases, the organizations cohesion and ability to attain its goals in stable environments also increases. An organization demonstrating high levels of inertia should possess the necessary components to achieve IT platform enabled-alignment, but lack the components to achieve IT platform-enabled adaptability. Since IT platform-enabled ambidexterity is viewed as the combination of IT platform-enabled alignment and IT platform-enabled adaptability, highly inert organizations will be hard pressed to possess this dual ability.

Hypothesis 1: Organizational inertia will be negatively associated with IT platform-enabled ambidexterity.

Digital Options

Real options theory suggests that holding an option refers to holding a claim to a future benefit. The longer the claim is held and the higher the degree of uncertainty, the more valuable it becomes to exercise the option. Different forms of options which can equate to greater agility and flexibility can be embedded in an IT platform and can be exercised at an opportune time to realize potential value (Tiwana et al., 2010). Digital options as described by Sambamurthy, Bharadwaj and Grover (2003), are a “set of IT platform-enabled capabilities in the form of digitized process capital and digitized knowledge capital. Digitized process capital refers to the IT Platform-enabled inter-and intra-organizational work processes for automating, informing and integrating organizational activities. Digitized knowledge capital is the IT Platform-enabled repository of knowledge and the systems of interaction among organizational members to generate knowledge sharing of expertise and perspectives.” Theoretically, digital options are associated with agility, and represent a valuable asset for organizations wanting to leverage unique process and knowledge capabilities. These IT platform-enabled capabilities are measured in terms of reach (with aspects seemingly tapping into alignment) and richness (with aspects seemingly tapping into adaptability and agility).

As organizations mature and age or adopt new IT platforms, they begin to accumulate both digitized process capital and digitized knowledge capital. This digitized capital represents a valuable option embedded within the organization’s IT platform. However, knowing when to suavely exercise these options will be affected by an organization’s sensitivity to inertial forces. While there may be numerous social forces contributing to inertia—which hinder the leveraging of digitized process and knowledge capital—firms experiencing organizational inertia may already have (whether they are aware of it or not) the necessary IT platform components to support and embed digitized process and knowledge capital. Thus, it is hypothesized that organizational inertia interacts with the accumulation of digital options and moderates the positive association between digital options and IT platform-enabled ambidexterity. Formally stated,

Hypothesis 2: Organizational inertia will have an interactive association with digital options such that variation in individual levels of organizational inertia will be associated with variation in the strength of the relationship between digital options and IT platform-enabled ambidexterity.

Digitized Process Reach

Following Sambamurthy et al.’s (2003) descriptions, *digitized process reach* refers to the extent to which a firm deploys common, integrated and connected IT platform-enabled processes. If an organization’s digitized process structure is able to tie both their activity and information flows across the entire organizational network structure—including that of its partners—the organization will be associated with high levels of digitized process reach. This example of high reach demonstrates that a chosen IT platform can enable these integrated processes and the firm should thereby benefit from greater alignment from this integration. If an IT platform is able to support high reach, the organization can further benefit from its ability to automate highly accessible and modular processes. Though high process reach may be more closely associated with IT platform-enabled alignment, it is hypothesized to generally contribute to IT platform-enabled ambidexterity. Formally stated,

Hypothesis 3: Digitized process reach will be positively related to IT platform-enabled ambidexterity.

Digitized Process Richness

Digitized process richness refers to the overall quality of organization’s process related information embedded on an IT platform. It includes the richness of the information, the transparency of that information in relation to other valuable and linked processes and systems that access the information. It also refers to the ability to utilize the information for adaptation or reengineering processes (Sambamurthy et al., 2003). As organizations age and mature, or as they acquire new IT platforms which support greater richness, their process related information richness should increase. Additionally, modular expansion on an organization’s legacy platform should improve the access and visibility of the information. If an IT platform is able to support high levels of digitized process richness, the organization can benefit from the embedded interactivity and

adaptability. Though it is possibly more closely linked to the IT platform-enabled adaptability aspect, it is posited that digitized process reach will be associated with IT platform-enabled ambidexterity. Formally stated,

Hypothesis 4: Digitized process richness will be positively related to platform-enabled ambidexterity.

Digitized Knowledge Reach

Staying true to Sambamurthy et al.'s (2003) descriptions, *digitized knowledge reach* refers to the comprehensiveness and accessibility of codified knowledge in an IT platform's knowledge base. It includes and encompasses the interconnected networks and systems for enhancing interactions among individuals for knowledge transfer and sharing. If an IT platform's digitized knowledge structure is able to collect and further integrate customer knowledge, partner knowledge, employee knowledge and other relevant knowledge, then the organization will be associated with high levels of digitized knowledge reach. If a platform is able to support high reach, the organization can benefit from the expanded accessibility and sharing of knowledge. This is also reflected in Birkinshaw, Noble, and Ridderstrale's (2002) conceptualization of knowledge in terms of observability and system embeddedness. Their research showed that high performers in terms of knowledge transfer, where those units with high level of integration (i.e., *alignment*) with other units *coupled* with a low level of system-embedded knowledge (i.e., *adaptability*). Though it is possibly more closely linked to the IT platform-enabled alignment aspect of IT platform-enabled ambidexterity, this paper posits a more general association. Formally stated,

Hypothesis 5: Digitized knowledge reach will be positively associated with platform-enabled ambidexterity.

Digitized Knowledge Richness

Digitized knowledge richness refers to the IT platform-based systems of interactions among organizational members to support sense-making, perspective sharing and development of tacit knowledge. (Sambamurthy et al., 2003) As firms mature and age, the richness of their knowledge increases, thus the firm experiencing organizational inertia may have high levels of knowledge richness. If an organization's technology platform is able to support these rich interactions—using tools such as videoconferencing for knowledge collaboration and interactive knowledge sharing—the organization can benefit from its increased ability to detect opportunities to adapt and to innovate. Again, though it may likely be more closely associated with IT platform-enabled adaptability aspect of the current conceptualization of IT platform-enabled ambidexterity, this paper posits a more general association. Thus,

Hypothesis 6: Digitized knowledge richness will be positively associated with platform-enabled ambidexterity.

METHODOLOGY: ANTICIPATED MEASURES, METHODS AND ANALYSIS

It is anticipated that the proposed research models will be suitable for survey data collection using a cross-sectional research design. As the boundary condition and constraint of the research model is on firms experiencing, to some extent, organizational inertia, the target population would need to include such businesses. The target sample for this research could consist of a wide range of businesses that are more established, mature and aging in their respected markets, as well as businesses that are young and newly founded. Especially if those markets in which they compete are becoming more dynamic markets. This sample would ensure sufficient amounts of variability in the levels of organizational inertia amongst the businesses.

To test the hypotheses, measures must be created, compiled and operationalized. Measure development will include assessing the face, content and construct validity in addition to reliability estimates if possible. Though existing measures are available for organizational ambidexterity, this paper has introduced a different conceptualization of platform-enabled ambidexterity. As such, existing the measures for organizational ambidexterity, agility, IT agility, and IT alignment, IT system integration and IT modularity will be a starting point for the development of measures reflecting the newly conceptualized constructs "IT platform-enabled alignment", and "IT platform-enabled adaptability". Scales will be compiled into a survey instrument which includes other relevant control measures. The final instrument will then be used for data collection in the aforementioned target sample population. After data collection it is anticipated the hypotheses will be tested using structural equation modeling

CONCLUSION: ANTICIPATED CONTRIBUTIONS

Problems related to inertial tendencies or failing to account for inertia itself have been identified as possible causes for why things go wrong in our theories and research (Hoetker, 2006;). It is anticipated that this paper will strengthen the theory of organizational inertia by identifying the effects of inertia on firms striving for IT platform-enabled ambidexterity. This paper also contributes to research on IT capabilities by focusing on the role IT plays as a digital options generator. This paper also extends the organizational ambidexterity concept (with focus on the behavioral capacity of employees) into an IT platform-enabled ambidexterity concept (with focus on functionality and capacity of an IT platform). In doing so, adaptability and

alignment can now be viewed outside the context of a collective trait possessed by a firm's employees and can be viewed in terms of how IT platforms can enable firm adaptability and alignment.

In conclusion, this paper explored the understudied and often misunderstood concept organizational inertia and introduced the concept of IT platform-enabled ambidexterity. In doing so the paper explored the expanded role of the IT platform in terms of it being a digital options generator. It also proposed that firms experiencing organizational inertia can achieve IT platform-enabled ambidexterity by leveraging the valuable digital options embedded within an IT platform. For future research, it is anticipated that the concept of IT platform-enabled ambidexterity can provide a useful conceptualization for researching a number of agility, adaptability, and alignment related phenomena.

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