

Isomorphism and Mobile Commerce Strategy

Wenshin Chen

College of Business

Prairie View A&M University Prairie View, TX, USA

wechen@pvamu.edu

Abstract: Experts continuously predict that mobile technology would create new competitions in the business world and that all e-commerce would be on wireless devices in the near future. This technological trend indicates that M-commerce has been envisioned to be a major force of business competition. To any organizational member in an institutional field, a more comprehensive understanding of M-commerce strategy would thus become critical. Since conventional wisdom emphasizes economic aspects of technological strategy, a more comprehensive understanding of M-commerce would need to incorporate social/political aspects of strategic choice because such social/political backdrops in an institutional field often shape an organization's decision. Institutional theorists, for instance, argue that organization members' decisions are often driven by social/political pressures in an institutional field, particularly when the environment is surrounded by emerging technological issues. With its developing nature, M-commerce well fits into such an uncertain context. Institutional theory could thus help better understand how social/political forces in an institutional field influence an institutional member's decision. More specifically, this paper proposes that each of three isomorphic pressures, coercive, mimetic, and normative pressures, positively influences an organization's M-commerce strategy. These propositions encourage business and technology decision makers to consider social/political factors embedded in their institutional landscape and in turn better shape their organizations' M-commerce strategy.

Keywords: Mobile Commerce and Business, Isomorphism, Institutional Pressure

I. Introduction

As the Internet technology and the electronic market mature, emerging business competition beyond E-commerce has become increasingly significant in the business world [23]. Mobile commerce (M-commerce) has been predicted to become such a force to create new challenges and opportunities beyond the E-commerce market [13]. While the potentials of M-commerce have been extensively discussed by practitioners (e.g. [25] [46-47]), empirical studies that help understand and manage M-commerce strategy have not been parallel. The inadequate empirical studies of M-commerce might be due to the rapidly evolving

nature of mobile technology. However, as M-commerce creates a new competitive market and potentially transforms the manner in which business is conducted [12] [35], an insufficient understanding of such an emerging phenomenon might cause organizational inability to make an effective strategic choice. The purpose of this paper, thus, seeks to shorten the gap between practitioner's discussion and empirical research. It intends to examine an organization's strategic choice of M-commerce in an institutional field and in turn helps decision makers to better shape their M-commerce strategies.

Specific research questions of the study are mainly derived from the evolving nature and uncertainty of mobile technology. Research community has increasingly called for attention to issues and challenges of mobile technology [15] [19] [40] [44]. These technical challenges and standard issues of mobile technology prohibit an organization from fully envisioning the future of technological evolution. The rapid development of mobile technology could also exceed organizations' implementation capacity—before organizations fully comprehend the current technological capability, new devices or services might have appeared in the market. As such, high degree of technological uncertainty and complexity is involved in an organization's strategic choice of M-commerce, particularly in an institutional field where business competition is intense and social and political landscape is complicated. The paper thus asks: why does an organization adopt M-commerce strategy under such high uncertainty? What would an organization gain from the adoption of M-commerce strategy?

While conventional information technology (IT) strategy literature widely emphasizes economic aspect of strategic choice [26-27], the paper, in contrast, focuses on social and political aspects of strategic choice of IT in general and mobile commerce in particular. Derived from institutional theory, it specifically seeks to shed light on how isomorphic pressures influence an organization's adoption decision of M-commerce strategy. In the context of M-commerce, the discussion of isomorphic pressures could help better understand how an organization's decision making is driven by social and political landscape in an institutional field. The knowledge gained could thus encourage business and technology decision makers to consider not only economic but also social and political issues of M-commerce adoption and in turn better develop their M-commerce strategies.

I. 1 The Potential of M-commerce

This paper draws the definition of M-commerce from Tarasewich et al—"all activities related to a (potential)

commercial transaction conducted through communications networks that interface with wireless (or mobile) devices” [40, p. 42]. The reason of employing this definition is that it is one of better examples that specify the mechanism through which M-commerce is conducted. Such mechanisms—mobile devices—could include mobile phone, handheld computers, laptop computers, personal message pagers etc.

Practitioners have predicted that M-commerce could potentially turn a mobile phone into a retail outlet in a customer’s pocket [38] and change how firms sell and provide services for their customers [30]. It could also explosively influence particular industries such as financial services, travel, and retail businesses [35] and even more significantly, change firms’ business model [39] and IT strategy [31] [34]. Amazon.com founder Jeff Bezos even predicted that within ten years all e-commerce activities would be conducted through mobile devices [39]. In line with this view, Forrest Research reported that 90% of European companies intended to develop mobile Internet sites and 50% of them have already launched their development in the beginning of 2000s [8]. By the end of 2005, the US market will have more than 171.1 million mobile Internet users and 111 million consumers will access mobile Web on a monthly basis [12]. A survey in the US further indicated that mobile phones will become the second highest potential reach as an advertising medium only next to television [47]. The revenue that M-commerce will generate by the end of 2005 is predicted to be more than 100 billion worldwide [39].

However, all these predictions are mainly drawn from economic perspectives. If an organization’s decision making were simply based on such perspectives, the organization would then fail to understand social and political factors that play a significant role in influencing the success of technological adoption [1] [22]. With respect to an organization’s decision making, economic perspectives are derived from organizational voluntarism, which assumes that an organization’s strategic choice is simply a voluntary action so that it could be decided via an organization’s internal need assessment. Such a perspective neglects external factors such as environmental competition or institutional pressures. Zmud’s [48] push-pull model suggests that factors leading to an innovative action could be mainly categorized into push and pull forces. Pull forces stem from an organization’s internal evaluation of performance gaps or operations needs [7]. Push forces, on the other hand, result from a variety of external factors such as a promising technology, norms of the social systems [32], competitive pressures [21] or institutional influences [1]. In other words, an organization’s initiation of an innovation often results from both internal and external forces.

Institutional theorists further illustrate that one of external forces—institutional pressure—often leads to an organization’s isomorphic changes in a collective field. The organization tends to act in a similar fashion because of isomorphic pressures they face instead of their need to

obtain efficiency [9]. Such an institutional perspective provides social and political explanation of an organization’s behavior, extends traditional economic perspective, and in turn helps gain a more comprehensive understanding of strategic choice of M-commerce.

II. Institutional Theory

Institutional theorists argue that organizations act, not to increase cost efficiency, but to gain legitimacy [5] [18] [37]. Much of the ideas, values, and beliefs that an organization acts upon are influenced by institutional members instead of the organization’s needs of economic efficiency [28]. To survive, organizations have to first obtain institutional recognition; acting to accommodate institutional expectations, regardless of efficiency or cost benefits, would help to gain institutional recognition and in turn enhance survival opportunity [9].

Traditional wisdom of organizational voluntarism assumes that organizations make decisions based on their rational calculation of performance needs. In reality, however, institutional members would often follow the trend of institutional fashion and act collectively with other institutional members. An organization’s action in this pattern does not necessarily gain profit or efficiency. Instead, the result often lies in social recognition or political support [20]. Hiring a Nobel Prize winner, for example, would not be financially justified for a university; it could nonetheless attract better students or research opportunities and in turn gain better recognition for the university [9]. Such institutional actions have become common practice in the academia so that any university would highly sanction the legitimacy of actions. As a university acts toward the direction that is highly sanctioned, other universities would feel the urge or pressure to act in a similar fashion to gain institutional recognition. A university’s action thus does not necessarily result from internal, rational calculation of performance needs. Rather, it is highly influenced by institutional pressures resulting from common practice or collective action in the field. Such institutional pressures emerge to be powerful forces that cause institutional members act in an isomorphic pattern as illustrated by DiMaggio and Powell:

Once disparate organizations in the same line of business are structured into an actual field (as we shall argue, by competition, the state, or the professions), powerful forces emerge that lead them to become more similar to one another [9, p. 148].

These powerful institutional pressures could be due to institutional members’ dominant movement or governmental regulations. In relation to technological investments, an organization does not necessarily rationally evaluate its return of investment for the innovation. Instead, the motive for an organization to adopt an innovation often stems from standardized practices in the field [24] seeking for normative recognition [45], as illustrated by DiMaggio and Powell:

As an innovation spreads, a threshold is reached beyond which adoption provides legitimacy rather than improves performance... Strategies that are rationale for individual organizations may not be rational if adopted by larger numbers. Yet the very fact that they are normatively sanctioned increases the likelihood of their adoption [9, p.148].

In other words, an organization's technological adoption is often a function of institutional pressures—the fear of being different from other institutional members [2]. So long as an organization resides and competes in the field, it could not escape from these pressures. An organization's action, therefore, is often undertaken for considering other institutional members' action and result in a collective, isomorphic pattern [9], which seeks for social and political recognition and sequentially survival chances [28].

II. 1 Isomorphic Pressures

According to DiMaggio and Powell, the organization's collective action is mostly driven by isomorphism embedded in an institutional field. They specify isomorphism as “a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions” [9, p.149]. These institutional theorists further contend that three sources that lead to isomorphism are coercive, mimetic, and normative pressures.

II. 2 Coercive Pressures

Coercive pressure is generally caused by governments or other powerful organizations in the same field. When governmental agencies enact industrial rules [22] or when powerful industrial leaders impose standardized practices [14], other organizations in the field would perceive an urgent pressure. This type of pressure rises from facing ‘must-have’ institutionalized rules or practices. Failing to cope with this type of institutionalized rules or practices could result in fatal failure. Adopting a new pollution control or prevention technology in certain fields where environmental issues are sensitive is one example that organizations respond to such coercive pressure [e.g., 36].

Since M-commerce has been predicted to be one of the most influential emerging technologies in changing a firm's competitive strategy [13] [31], a firm situated in a competitive institutional field will inevitably face strategic choices of M-commerce. Nowadays, a firm cannot compete against others if it does not well develop an E-commerce strategy. With increasing influences predicted by practitioners, M-commerce, similar to E-commerce, would soon become a “must-have” IT strategy; a firm without M-commerce strategy would then face difficulty in the competitive market in the near future. Failing to employ a clear M-commerce strategy, a firm could be excluded in the competitive market. In other words, a firm without M-commerce strategy would perceive high degree of coercive pressure. Such pressure would urge it to rapidly make strategic choice of M-commerce to compete at the same

level as other firms in the industry. As such,

P1: the greater the coercive pressures, the more likely a firm will adopt M-commerce strategy.

Two specific sources of coercive pressures could influence a firm's adoption of M-commerce strategy. First, the standard of mobile technology has not been well reconciled, especially in the US market [10] [34] [46]. This situation would encourage technologically leading firms quickly step in and standardize the practices for M-commerce. The more such leading firms are perceived as powerful and influential in the industry, the more likely other firms would be subjected to emerging mobile technological standard and subsequent coercive pressures. As such,

P1a: the greater power and influence of leading competitors, the more likely a firm will adopt M-commerce strategy.

Second, governmental agencies could also involve in the standardization of mobile technology. They could create a universal standard of mobile technology for the nation so that the technological compatibility across various vendors and devices could be achieved. Governmental intervention usually imposes coercive pressure directly on a firm so that certain standardized rules and practice have to be complied [22] [24]. With respect to mobile technology, such governmental intervention would also enable the compatibility of various standards. As such, it would, on the one hand, create coercive pressures on technologically leading firms and demand their compliance on the technological standards and, on the other hand, achieve higher technological compatibility, which would in turn ease the implementation and facilitate the adoption of M-commerce for other firms. Both situations would lead to more prevailing acceptance of M-commerce in the field. As such,

P1b: the greater the involvement of governmental agencies in the standardization of mobile technology, the more likely a firm will adopt M-commerce strategy.

II. 3 Mimetic Pressures

Mimetic pressure, in contrast, is primarily related to the uncertainty of environment and technology and the ambiguity of an organization's strategy. When the environment or technology is uncertain and an organization's strategy is ambiguous, an easier way for an organization to establish itself is to model after those who have been widely recognized in the industry [9] [24]. Following others' footsteps could minimize the risk due to high degree of environmental uncertainty or high cost of technological investment. For firms that are not widely sanctioned, the imitation of legitimate competitors becomes a voluntary but critical behavior to respond to the fear of being different [1] and help establish a firm's legitimacy [45]. Evidences have shown that in the context of EDI (electronic

data interchange) mimetic pressures perceived by an organization positively influence its adoption of the EDI systems [41]. In the context of M-commerce, issues involved in technological standard and infrastructure create both environmental and technological uncertainty [19] [40]. On the one hand, M-commerce is perceived as a significant strategic factor [34] so organizations inevitably perceive institutional pressures to adopt it. On the other hand, consumers remain unwilling to embrace M-commerce activities [25] because of the still uncertain stage of the technological development [34], the complicated mobile payment structure, and slowly developing wireless-telecommunication industry [46]. An organization might thus perceive that the investment could be costly and benefits might not be rewarding [25] [46]. Such context would then create mimetic pressures that encourage a firm to benchmark legitimate competitors and consequently adopt M-commerce strategy.

P2: the greater the mimetic pressures, the more likely a firm will adopt M-commerce strategy.

According to DiMaggio and Powell [9], mimetic pressures are mainly derived from two factors—external and internal factors. Externally, the significance of institutional practices and high uncertainty of the environment or technology constitute two major factors of mimetic pressures. More specifically, the significance of institutional practices stem from the prevailing usage of technologies and the perceived success of adopting firms [41]. In other words, an organization's decision to adopt emerging technologies is driven by the extent to which the technology is used in the field and the perceived success of firms that have adopted it. Enabled by mobile and relevant technologies, M-commerce thus cannot possibly escape from these effects in the institutional field; neither could it avoid environmental and technological uncertainty accompanied by emerging mobile technologies due to their developing and uncertain technological standard and infrastructure. Such uncertainty and the significance of institutional practices would unsurprisingly encourage an organization to model itself after other firms that have been successfully implemented M-commerce strategy.

P2a: the greater the uncertainty of mobile technology, the more likely a firm will adopt M-commerce strategy through imitating successful firms.

Internally, an organization's perception of mimetic pressures would be strengthened when it lacks of a clear strategy. The pioneers or early adopters of emerging innovations in the industry usually have a clearer vision with respect to adopting certain institutional practices or technologies to meet their organizational needs [41]. Other firms without a clear strategy, in contrast, would fear to be behind or to be different [1]. Such fear would encourage them to follow common and successful practices in the field so that the risk of technological implementation could be reduced [9]. In the context of M-commerce, technological

uncertainty would further push those who do not have clear business or IT strategy to model after firms that have successfully implemented M-commerce strategy.

P2b: the greater the ambiguity of a firm's strategy, the more likely a firm will adopt M-commerce strategy through imitating successful firms.

II. 4 Normative Pressures

Normative pressure, finally, is derived from the professionalization, the process through which the information is exchanged informally among professionals or formally through professional networks and associations [24]. Organizations in a collective field that consists of considerable amount of professional workforce will struggle to maintain prestige and resources, which are two major elements to attract professionals [9]. The professionalization process will encourage isomorphic behavior among organizations because organizations are inevitably inclined to demonstrate their capability to provide at least the same, if not better, benefits and services as their competitors do. Highly professionalized organizations (e.g., those who provide better benefits and services to their employees) will be recognized as more competitive and prestigious [24]. They will be more capable of not just retaining their employees but also attracting better workforce from the market. Their competitors, therefore, will face the pressures to model the benefits and service provided by these leading professionalized firms. In so doing, they could illustrate the willingness to maintain their employees and the desire to be recognized in the field [16].

Computer industry, where IT professionals generally share information rapidly and tend to identify themselves with their professions (e.g., programmers, system analysts) instead of with the company they currently work for, is one typical context in which normative pressures would emerge. Such normative pressures are positively related to an organization's adoption of an EDI system because the information of such systems is highly shared among professionals [41]. Predictably, in the context of M-commerce—a popular subject matter commonly shared by IT professionals, an organization member's decision making process of M-commerce strategy would be frequently discussed among IT professionals; their discussion would result in professionalization as aforementioned and in turn create significant normative pressures to any organizational members in the field. Consequently, the higher the normative pressure perceived by an organization, the more likely it will adopt M-commerce strategy.

P3: the greater the normative pressures, the more likely a firm will adopt M-commerce strategy.

While normative pressures generally stem from the professionalization [9], they specifically manifest themselves in two patterns: informal information exchange and formal professional networks and associations. Informally, IT professionals are likely to cross the boundary

of organizations and exchange professional information in various social settings. Such boundary-spanning individuals often bring in new ideas and help initiate an innovation in the organization [42]. As these boundary-spanning individuals exchange information frequently, they would be highly aware of any emerging technology newly developed and adopted in other organizations in the industry [42]. Such awareness would be increasingly prevailing within the organization. The management would thus inevitably sense the obligation to upgrade the professional practice and services to better retain its IT professionals. In the context of information technology, better professional practice and services often denote better technologies implemented. The state-of-the-art technologies used in the organization indicate certain challenges to IT professionals and the organization's willingness to compete with other organizations at the same level. As such, the degree to which boundary-spanning individuals informally exchange information among one another will create normative pressures for the organization and eventually influence its adoption decision of M-commerce strategy.

P3a: the more the informal boundary-spanning activities, the more likely a firm will adopt M-commerce strategy.

Formally, boundary-spanning activities could evolve through professional networks and associations. Such formal professional networks and associations often organize seminars or training sessions to help diffuse newly developed ideas or technological innovations. Professionals who frequently attend such activities would obtain knowledge and/or skills of concurrent practice or technologies in the industry. The managers involved in such professional affiliations would also eventually "view problems in a similar fashion, see the same policies, procedures and structures as normatively sanctioned and legitimated, and approach decisions in much the same way" [9, p. 153]. These boundary-spanning individuals would eventually become change agents or IT champions in the organization [32] to advocate the innovation in a similar fashion that other boundary-spanning professionals would do in their organizations. In the context of EDI, the extent of participation in professional associations denotes certain normative pressures, which in turn influences the intention of EDI adoption [41]. In the context of M-commerce, such formal participation of boundary-spanning activities would also help IT professionals and managers to realize the state-of-the-art mobile technology. Their realization would inevitably create certain degree of normative pressures that eventually urge an organization to adopt M-commerce so that the competitiveness could be ensured.

P3b: the greater the participation of professional network/associations among its professionals, the more likely a firm will adopt M-commerce strategy.

II. 5 The Effects of M-Commerce Strategy

Institutional theorists argue that an organization makes

isomorphic changes to pursue for social fitness [9], cultural support [20], or ultimately institutional legitimacy [24]. Such pursuit of legitimacy will reflect on organizations' external reputation. For example, as a firm makes isomorphic changes toward a popular management technique such as total quality management (TQM), it might symbolically create an innovative vision for the stakeholders. This innovative vision might be due to any form of isomorphic pressures. Once it is created, however, the organization has declared to its stakeholders that it intends to compete at the same level as other organizations do. The stakeholders would then better recognize the organization as a legitimate competitor in the industry. An organization's image and reputation would then be enhanced regardless of the actual performance [37].

Considering the tremendous potentials of M-commerce [31] [34], an organization's strategic choice of M-commerce would then demonstrate its willingness to create new competing opportunities and its desire to compete with other organizations in the field. Such demonstration could then help enhance an organization's innovative image and competing legitimacy—in another word, its external reputation.

P4: the adoption of M-commerce will be positively associated with an organization's reputation.

While the adoption decision of M-commerce would affect an organization's competing legitimacy through the heightened external reputation, it would also improve employees' recognition of the firms simultaneously. Empirical studies have shown that as an organization makes an innovative decision such as implementing a popular management technique—TQM, the organization gains not just the stakeholders' but also the employees' recognition [37]. Particularly, if such a decision stems from the strategic responses to normative pressures, it would denote an organization's enthusiasm to fully equip the employees with superior technology and the state-of-the-art practices. As the professionals exchange information about the current practice of the firms, the employees whose firms have adopted M-commerce would then feel more confident and comfortable to diffuse such information. Other professionals whose firms have not yet adopted M-commerce would then better recognize and appreciate the practice of the adopting firms. Such recognition and appreciation would reflect on the adopting employee's attitude toward their adopting firms. As such, the employees whose organizations have adopted M-commerce would tend to better recognize their firms.

P5: the firm's adoption decision of M-commerce will be positively associated with its employees' recognition of the firm.

These propositions and relationships among constructs are illustrated in Figure 1 below.

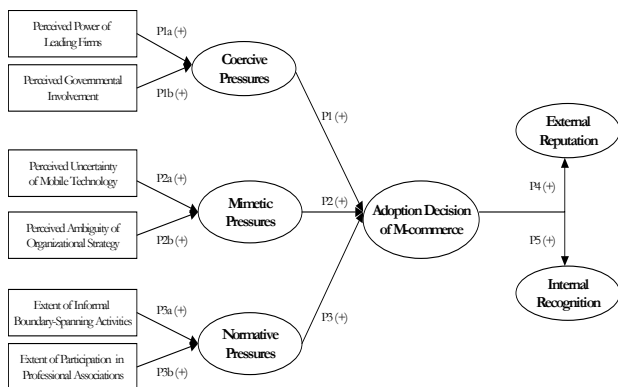


Figure 1. The Proposed Research Model

III. Methodology

The paper builds upon a theory testing approach. The purpose of such an approach is to obtain reliable statistical power and in turn generalize the results and allow replicability. To achieve these objectives, the survey method will be used to collect data because of the need of a large sample size across geographically distributed areas. In addition, structural equation modeling (SEM) techniques will be used to analyze data and test the proposed research model. SEM is best known for dealing with a theory-driven, confirmatory analysis of complex, multiple layers of relationships among underlying constructs [17], which suits the research model (Figure 1) that is strongly rooted in institutional theory.

The 1000 largest companies in the metropolitan area will be contacted as the potential participants. A solicitation letter will be first distributed to each of these companies' CIO or IT manager. An indication will be made in the letter to guide them fill out the survey online. Online survey allows autonomous and anonymous participation in a convenient fashion. It should better encourage the participation and facilitate the data collection process.

The Measures

Most items used on the survey are developed from conceptual definition because no existing instrument is specific enough to serve the purpose of the study.

Coercive pressures are measured by two sub-constructs: perceived power of leading firms (PPLF) and perceived governmental involvement (PGI). The former indicates the extent to which the leading firms impose coercive pressures on others. Such coercive pressures would particularly manifest themselves if an organization perceives that the leading firm possesses necessary technological and other resources to establish the standard or to well connect to governmental agencies and in turn lobby necessary changes in favor of them. As such, three seven-point scales will be

employed to assess a leading firm's technological, financial, and political resources (Appendix). Perceived governmental involvement, on the other hand, denotes the degree to which governmental agencies engage in the standardization of mobile technology, which is one of the main sources of coercive pressures. When a governmental agency regularly participates in industrial activities and/or promotes certain industrial or technological standards, coercive pressures would become more apparent. As such, two seven-point scales will be used to assess the degree of governmental agencies' participation in each of activities above (Appendix).

Mimetic pressures are measured by two sub-constructs: perceived uncertainty of mobile technology (PUMT) and perceived ambiguity of organizational strategy (PAOS). Perceived uncertainty of mobile technology mainly stems from technological standard and infrastructure issues [19]. Because many issues of technology and infrastructure development remain unsolved in the industry, an organization inevitably experiences difficulty to adopt M-commerce and tends to imitate other organizations. Perceived uncertainty of mobile technology, thus, would be measured by two seven-point scales assessing the degree to which the technology standard and infrastructure is perceived to continue to change in the near future (Appendix).

Perceived ambiguity of organizational strategy, in contrast, concerns an organization's business and IT strategy. While common business strategies are categorized as defenders, analyzers, prospectors, and reactors [29], IT strategy could be articulated by low cost and differentiation/innovation [33]. However, the concern of perceived ambiguity of organizational strategy does not involve the types of strategy but the degree to which the strategy is clearly illustrated in the organization. As such, the study would simply employ two seven-point scales; each of which assesses the degree of clarity of business and IT strategy, respectively (Appendix).

Normative pressures are measured by two sub-constructs: extent of participation in informal boundary-spanning activities (EPBS) and in formal professional associations (EPPA). Boundary-spanning activities could denote the contact through interpersonal relationships or with mass media [6]. The paper thus employs two seven-point scales to assess the degree of participation in each category of boundary-spanning activities (Appendix). In addition, the participation in formal professional associations indicates how much the professionals have been exposed to IT related professional activities. This notion resembles the construct of external participation in Brancheau and Wetherbe [6]. While these authors measure the number of networks and associations to which the professionals belong, this paper argues that a scale assessing the degree to which the professionals involved in professionals associations would be more appropriate because obtaining a membership is one thing, actively

involving in professional activities is another. The study thus employs one seven-point scale to assess the degree to which the professionals actively involve in professional activities (Appendix).

Adoption decision of M-commerce strategy is measured by the time of decision made (TDM) [6]. While some studies measure the adoption by intention (e.g., [41]), such measure is appropriate only when the action of adoption has not yet been undertaken. In the context of M-commerce, many large corporations might have implemented the technology and relevant competitive strategy [8]. As such, two seven-point scales that measure the past and the future decisions would better incorporate the decisions that have made and the intention to adopt (Appendix).

External reputation is measured by a firm's actual performance. The actual performance assesses a firm's changes in revenues. An increase of revenues indicates that the stakeholders have higher confidences on the firm so that the investment on the firm or the transactions with the firm increase. Such measure has also been used to signal a firm's reputation in the industry [37]. Rather than measured by the survey, the data would then be collected through public records such as the firm's quarterly or annual reports and/or financial performance in the stock market.

Internal recognition is measured by the turnover rate of employees. When the employees perceive that their firm could not provide equivalent practices or services as other firms do, they would be likely to leave for better opportunities. On the other hand, as they better recognize and appreciate the firm, they would tend to retain. The record of turnover rate would then be appropriate for the research context.

IV. Discussion

IT research has extensively applied economic-based theories such as transaction cost economics and resource-based view to explain the rationale of IT adoption (e.g., [3] [4] [11]). The former perceives IT as a tool to reduce cost while the latter views it as a valuable resource to provide competitive advantages. These theoretical perspectives stem from rational choice theorizing foundation in which an organization is assumed to be a rational actor who would act on rationally calculated purpose. Rational choice perspective, however, has been widely challenged because it fails to explain social and political factors emerging from the environment [18] [24] [37]. Social and political factors are important with respect to the technological adoption because they better explain environmental forces that lead to an organization's adoption decision [20] [22]. More specifically, this paper argues that isomorphic pressures help clarify an organization's action in adopting collective organizational practices in general [9] [28] and comparable technologies in particular [1] [41]. The findings of the study, thus, could

contribute to the organizational practice in the following ways.

First, since a regulated technological standard could create coercive pressures that force other firms to follow, developing and establishing a standard for mobile technology would become one of the most powerful weapons to help a firm compete in the emerging market. Organizations, thus, could seek strategic alliances or political cooperation to persuade governmental agencies to establish the standard of mobile technology. This could help dictate the institutional trend so that other firms have no option but comply with such standard. Second, the adoption of M-commerce needs to fit into an organization's strategy. Without a clear strategy, an organization would inevitably face mimetic pressures to imitate other firms' practices, particularly with many uncertain technological issues surrounding M-commerce. As such, to better compete in the emerging market and ensure survival chance, an organization needs to first develop a clear vision with respect to business and technological investments.

Third, an organization needs to renovate pressures into resources. Isomorphic pressures mostly result from institutional members in the field. If an organization could establish technological collaboration with these members or competitors, the competition resulting from isomorphic pressures could then be reduced. Such collaboration does not necessarily denote formal strategic alliance. Instead, it could imply an institutional network through which members exchange information and share experiences with respect to technological adoption. Finally, an organization might need to encourage its professionals and managers to actively participate in boundary-spanning activities. These boundary-spanning individuals could bring in new ideas and concurrent information of the field. Their informal interaction with other professionals in the field and formal involvement in professional associations could be developed into common practice in the firm. In the short term, such common practice could help an organization learn better approach of implementing M-commerce strategy; in the long term, it could further establish an innovative culture in the firm so that the organization would continuously improve its technological practice and establish an innovative legitimacy. Such legitimacy could, on the one hand, enhance an organization's survival chance and, on the other hand, help an organization to impose isomorphic pressures on other institutional members.

V. Concluding Remarks

While economic based theories such as transaction cost economics and resource-based view have been extensively applied, institutional theory offers a new dimension to examine IT phenomenon. Drawing from such a new dimension, the study seeks to examine an organization's adoption strategy of M-commerce in relation to isomorphism. Specifically, the paper proposes that each of isomorphic pressures would influence an organization's

adoption decision of M-commerce. Coercive pressures result from powerful organizations and governmental agencies' intervention in the standardization of mobile technology. Mimetic pressures are derived from the technological uncertainty and the ambiguity of organizational strategy while normative pressures rise from the professionalization through which boundary-spanning individuals involve in informal information exchange and formal experience sharing and training. These isomorphic pressures could motivate an organization to adopt M-commerce in a similar fashion as that of other institutional members.

Once the adoption decision of M-commerce is made, it denotes that the organization would join the competitive market much in the same way as other organizations do. The organization would then be better recognized by stakeholders as a legitimate player and by its employees as a better place for which they work. The heightened external reputation and internal recognition could consequently help enhance an organization's actual performance and retain its valuable professionals. To better compete and survive in the emerging competitive market, an organization would then need to pay strong attention to social and political landscapes of an institutional field so that a better strategic choice of M-commerce could be developed.

APPENDIX: The Survey Scales of Key Constructs

For all items: 7—strongly agree; 1—strongly disagree.

Perceived Power of Leading Firms (PPLF)

The leading firms possess powerful technological resources.
The leading firms possess powerful financial resources.
The leading firms possess powerful political resources.

Perceived Governmental Involvement (PGI)

The governmental agencies actively participate in the industrial activities.
The governmental agencies actively advocate certain standards for mobile technology.

Perceived Uncertainty of Mobile Technology (PUMT)

The standard of mobile technology will continue to change.
The infrastructure for connecting mobile technology will continue to evolve.

Perceived Ambiguity of Organizational Strategy (PAOS)

Our organization has a clear business strategy.
Our organization has a clear IT strategy.

Extent of Participation in Informal Boundary-Spanning Activities (EPBS)

I frequently contact other professionals in the industry for technological information.

I am actively exposed to mass media related to the technology.

Extent of Participation in Professional Associations (EPPA)

I actively participate in IT professional associations.

Time of Decision Made (TDM)

Our organization has adopted M-commerce for a long time.
Our organization intends to upgrade M-commerce soon.

References

- Abrahamson, E. "Managerial Fads and Fashions: The Diffusion and Rejection of Innovation," *Academy of Management Review*, 1991, 16(3), 586-612.
- Abrahamson, E., & Rosenkopf, L. "Institutional and Competitive Bandwagons: Using Mathematical Modeling as a Tool to Explore Innovation Diffusion," *Academy of Management Review*, 1993, 18(3), 487-517.
- Ang, S., & Straub, D. W. "Production and Transaction Economies and IS Outsourcing: A Study of the U.S. Banking Industry," *MIS Quarterly*, 1998, 535-552.
- Aubert, B. A., Rivard, S., & Patry, M. "A Transaction Cost Approach to Outsourcing Behavior: Some Empirical Evidence," *Information & Management*, 1996, 30, 51-64.
- Barringer, B. R., & Harrison, J. S. "Walking a Tightrope: Creating Value through Interorganizational Relationships," *Journal of Management*, 2000, 26(3), 367-403.
- Brancheau, J. C., & Wetherbe, J. C. "The Adoption of Spreadsheet Software: Testing Innovation Diffusion Theory in the context of End-User Computing," *Information Systems Research*, 1990, 1(2), 115-143.
- Daft, R. L., & Becker, S. W. *The Innovative Organization*. New York, NY: Elsevier, 1978.
- Darling, A. "Waiting for the M-Commerce Explosion," *Telecommunications*, 2001, 35, 34-38.
- DiMaggio, P. J., & Powell, W. W. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields," *American Sociological Review*, 1983, 48, 147-163.
- Donegan, M. "The M-commerce Challenge," *Telecommunications*, 2000, 34, 58.
- Duncan, N. B. "Beyond Opportunism: A Resource-based View of Outsourcing Risk," *the Proceeding of 31st Annual Hawaii International Conference on System Sciences*, Hawaii, 1998.
- Fargo, J. "Cards and M-Commerce," *Credit Card Management*, 2000, 13, 50-54.
- Gantz, J. "Mobile Commerce: A Mirage? Or a Megatrend?" *Computerworld*, 2000, 34, 33.
- Garud, R., Jain, S., & Kumaraswamy, A. "Institutional Entrepreneurship in the Sponsorship of Common Technological Standards: The Case of Sun Microsystems and Java," *Academy of Management Journal*, 2002, 45, 196-214.
- Ghosh, A. K., & Swaminatha, T. M. "Software security and privacy risks in mobile e-commerce," *Communications of the ACM*, 2001, 44(2), 51-57.
- Greenwood, R., Suddaby, R., & Hinings, C. R. "Theorizing Change: The Role of Professional Associations in the Transformation of Institutionalized Fields," *Academy of Management Journal*, 2002, 15, 58-80.
- Hair, J., J.F., Anderson, R. E., Tatham, R. L., & Black, W. C. *Multivariate Data Analysis*. Upper Saddle River, NJ: Prentice Hall, 1998.
- Human, S. E., & Provan, K. G. "Legitimacy Building in the Evolution of Small-Firm Multilateral Networks: A Comparative Study of Success and Demise," *Administrative Science Quarterly*, 2000, 45, 327-365.
- Imielinski, T., & Badrinath, B. R. "Mobile Wireless Computing: Challenges in Data Management," *Communications of the ACM*, 1994, 37(10), 18-28.
- Jarvenpaa, S. L., & Leidner, D. E. "An Information Company in Mexico: Extending the Resource-Based View of the Firm to a Developing Country Context," *Information Systems Research*, 1998, 9(4), 342-360.
- Kimberly, J. R., & Evanisko, M. J. "Organizational Innovation: The Influence of Individual, Organizational, and Contextual Factors on

- Hospital Adoption of Technological and Administrative Innovations," *Academy of Management Journal*, 1981, 24(4), 689-713.
- [22]. King, J. L., Gurbaxani, V., Kraemer, K. L., McFarlan, F. W., Raman, K. S., & Yap, C. S. "Institutional Factors in Information Technology Innovation," *Information Systems Research*, 1994, 5 (2), 139-169.
- [23]. Kutler, J. "Mobile Commerce without the Hype," *Institutional Investor*, 2000, 34, 20-22.
- [24]. Lawrence, T. B. "Institutional Strategy," *Journal of Management*, 1999, 25(2), 161-188.
- [25]. Lindsay, G. "An Answer in Search of a Question: Who Wants M-Commerce?" *Fortune*, 2000, 142, 398-400.
- [26]. Mata, F. J., Fuerst, W. L., & Barney, J. B. "Information Technology and Sustained Competitive Advantage: A Resource-Based Analysis," *MIS Quarterly*, 1995, 19(4), 487-505.
- [27]. McFarlan, F. W. "Information Technology Changes the Way You Compete," *Harvard Business Review*, 1984, 62(3), 98-103.
- [28]. Meyer, J. W., & Rowan, B. "Institutionalized Organizations: Formal Structure as Myth and Ceremony," *American Journal of Sociology*, 1977, 83(2), 340-363.
- [29]. Miles, R. E., Snow, C. C., Meyer, A. D., & Coleman, J., H.J. "Organizational Strategy, Structure, and Process," *Academy of Management Review*, 1978, 546-562.
- [30]. Morgan, M. "M-commerce Up Front," *Telecommunications*, 2001, 35, 74 & 80.
- [31]. Rockhold, J. "M-Commerce in a Box," *Wireless Review*, 2000, 2.
- [32]. Rogers, E. M. *Diffusion of Innovation*, New York, NY: The Free Press, 1995.
- [33]. Sabherwal, R., Hirschheim, R., & Goles, T. "The Dynamics of Alignment: Insights from a Punctuated Equilibrium Model," *Organization Science*, 2001, 12(2), 179-197.
- [34]. Schultz, B. "The M-Commerce Fallacy," *Network World*, 2001, 18, 77-82.
- [35]. Schwartz, E. "Mobile Commerce Takes Off," *InfoWorld*, 2000, 22, 1 & 32.
- [36]. Shanley, A. "Environmental Pressures Drive Metal Processing Technology," *Chemical Engineering*, 1998, 69-72.
- [37]. Staw, B. M., & Epstein, L. D. "What Bandwagons, Bring: Effects of Popular Management Techniques on Corporate Performance, Reputation, and CEO Pay," *Administrative Science Quarterly*, 2000, 45, 523-556.
- [38]. Stripe, A. "Mobile Commerce Receives a Boost," *Computer Reseller News*, 2000, 85-86.
- [39]. Swartz, N. "M-Commerce Cometh," *Wireless Review*, 2000, 17, 74-76.
- [40]. Tarasewich, P., Nickerson, R. C., & Warkentin, M. "Issues in Mobile E-Commerce," *Communications of the Association for Information Systems*, 2002, 8, 41-64.
- [41]. Teo, H. H., Wei, K. K., & Benbasat, I. "Predicting Intention to Adopt Interorganizational Linkages: An Institutional Perspective," *MIS Quarterly*, 2003, 27(1), 19-49.
- [42]. Tushman, M. L. "Communicating Across Organizational Boundaries: Special Boundary Roles in the Innovative Process," *Administrative Science Quarterly*, 1977, 22, 581-606.
- [43]. Tushman, M. L., & Scanlan, T. J. "Boundary Spanning Individuals: Their Role in Information Transfer and Their Antecedents," *Academy of Management Journal*, 1981, 24(2), 289-305.
- [44]. Urbaczewski, A., Valacich, J. S., & Jessup, L. M. "Mobile commerce opportunities and challenges," *Communications of the ACM*, 2003, 46(12), 31-32.
- [45]. Westphal, J. D., Gulati, R., & Shortell, S. M. "Customization or Conformity? An Institutional and Network Perspective on the Content and Consequences of TQM Adoption," *Administrative Science Quarterly*, 1997, 42, 366-394.
- [46]. Wickham, R. L. "M-Commerce? Maybe," *Wireless Review*, 2000, 17, 9.
- [47]. Zabala, H. "M-Commerce, the Next Big Thing?" *Asian Business*, 2000, 36, 34-35.
- [48]. Zmud, R. W. "An Examination of "Push-Pull" Theory Applied to Process Innovation in Knowledge Work," *Management Science*, 1984, 30(6), 727-738.