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Cloud Computing in the UAE Context: An institutional perspective

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Abstract
This proposal seeks to understand how the local industry perceives and practices cloud computing in the UAE (United Arab Emirates) context. Despite global interest of cloud computing, no empirical study has yet examined this growing phenomenon in the UAE. Drawing from an institutional perspective, the proposal argues that the emergence of cloud computing will create isomorphic pressures and eventually urge, if not force, the local industry to reshape its IT service model. A mixed research methodology is proposed to first gain an in-depth understanding of issues faced by local companies and next survey collective perception and practice of cloud computing in the UAE as a whole. Potential implications for practitioners and researchers are discussed.

Keywords
Cloud Computing, UAE, Institutional Theory, Case Study

1. Introduction
The emergent notion of cloud computing has seemingly excited the IT industry and research community (Kim 2009). Despite varied definitions (Hayes 2009), cloud computing has been increasingly foreseen as a major force in the IT world that CIOs and IT managers alike should be concerned about (Hoffman 2008). While Amazon.com, a pioneering company in cloud computing, has well established its status with AWS (Amazon Web Services), other major competitors such as Google, Microsoft, and even AT&T have also rapidly emerged to compete for this emerging market segment (Brodkin 2009). The applications of cloud computing has expanded from major corporations to SMEs (small and medium enterprise) (Creeger 2009) and even to individual users (Ambrose & Chiravuri 2010). Many industries such as healthcare and education have increasingly anticipated rapid development of cloud computing (Chatman 2010; Hall 2010). In the near future, cloud computing might even become the fifth utility (along with water, electricity, gas, and telephony) that will fundamentally change how the need of our everyday lives is met (Buyya et al. 2009).

Interestingly, from a computing paradigmatic perspective, some argues that cloud computing might not be a new practice or able to solve problems faced decades ago (Voas & Zhang 2009). The major difference from previous computing practices is merely in geography (Hayes 2009). Its rapid development in recent years might be due to, in addition to the driving effort of major players such as Amazon and Google, newly realized economics benefits that are facilitated by

the Web (Armbrust et al. 2010; Cusumano 2010). These newly realized benefits of cloud computing include cost efficiency, mobility, and scalability (Buttell 2010; Kim 2009). Its web based platform also allow users more service options such as SaaS (Software as a Service), PaaS (Platform as a Service), and IaaS (Infrastructure as a Service) (Armbrust et al. 2010). As these emerging options provide more sourcing alternatives for an organization's strategic IT management, CIOs and IT managers would need to consider how their existing IT practices fit into the emergence of cloud computing (Schultz 2009).

Attention also needs to be paid to a variety of issues and concerns that might hinder the development of cloud computing. Similar to many emerging technologies, data security and privacy are typical concerns for cloud computing (Antonopoulos 2008; Sarrel 2009). Due to its unknown location and computing environment, cloud computing creates greater challenge in data access, segregation, and recovery (Brodkin 2008). As such, trust becomes a particularly critical issue between cloud service providers and users (Urquhart 2009). Other major issues addressed by IT practitioners include business continuity, data lock-in, data transfer bottleneck, and providers' performance unpredictability (Armbrust et al. 2010). Inevitably, such complexity of cloud computing is foreseen to clash with the governance of SOA (Service Oriented Architecture) and increase uncertainty for business and IT management (Kobielus 2009).

In the context of UAE, the local industry appears to embrace the emergence of cloud computing well. It is estimated that in 2010 cloud computing services would generate a market value of $170.5 US dollars (Al Mashni 2009). Perhaps, this is largely driven by the optimistic forecast of global cloud computing revenue at $160 billion US dollars by 2011 (Al Mashni 2010). Local industry even suggests that cloud computing will fundamentally change the business model of IT services industry in the UAE (Anonymous 2010). News also reported in 2008 that the UAE was the only country in the Gulf region to venture into cloud computing (Cherrayil 2009). The UAE government has further intended to amend cyber law to accommodate the predicted growth of cloud computing in the country (Anonymous 2010). While these reports indicate that there is a growing interest of cloud computing in the country, no empirical research has yet investigated the emerging phenomenon of cloud computing in the UAE context.

This research proposal thus seeks to provide empirical understanding of how the UAE industry perceives cloud computing and how cloud computing shapes or reshapes its strategic IT management. More specifically, the proposal argues that despite a variety of issues and obstacles foreseen in many countries (Armbrust et al. 2010; Brodkin 2008), cloud computing will inevitably integrate into the local industry's IT practices, not just because economics benefits suggested by practitioners (Buttell 2010; Kim 2009), but mostly because social trend and institutional forces that have increasingly shaped a global IT environment that forcefully urges the local community to follow. The theoretical foundation that justifies my arguments is briefly reviewed in the section that follows.

2. Theoretical Foundation

Institutional theorists have long argued that organizations often act collectively in their respective institutional context because of isomorphic pressures that they commonly faced (DiMaggio & Powell 1983). These pressures could be categorized as coercive, mimetic and normative forces that often reshape an organization's business or IT practices (Lawrence 1999; Oliver 1991). Coercive pressure is considered as a forceful factor that demands organizations'

compliance or severe consequence or penalty might be faced (Chen 2005). It is often created by governmental regulatory agencies or industrial associations. For instance, any company that intends to trade with EU (European Union) will need to comply with the strict regulation on chemical substance called REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) or severe penalty will be given.

Mimetic pressure often emerges when an organization perceives great environmental or technological uncertainty in its marketplace (Slack & Hinings 1994). When uncertainty is prevalent, organizations often seek to avoid risks by modelling after other organizations that have successfully adopted those business or IT practices (Chen & Sutanto 2007). For example, the Green Grid, a major global IT consortium associated with the notion of green computing, has increasingly created an international standard for green practice. Major founding members include some of most influential IT companies in the world such as Dell, HP, IBM, Intel, and Microsoft. Organizations that seek to develop green initiatives will inevitably benchmark the Green Grid's standard and practice.

Normative pressure is mainly driven by social norms (Dacin 1997) and caused by the information exchanged among boundary spanning professionals (DiMaggio & Powell 1983). Such information exchange inevitably compares different organizations and their business and IT practices and in turn creates collective social or professional norm that any legitimate competitor in the field will need to follow (Greenwood et al. 2002; Lounsbury 2002). For instance, many healthcare organizations in the US have moved toward EMR (Electronic Medical Records). Normative pressure will be faced by any healthcare organization that intends to compete at the same level but not yet implemented EMR.

In the domain of cloud computing, the IT industry in the UAE will also face these pressures similar to examples aforementioned. As the UAE government seeks to amend cyber law to accommodate cloud computing, the indication is clear that the government encourages such IT practice. Considering the unique social and political environment of UAE where many industries are centralized, if not owned or controlled, by the government, the industry is very likely to face coercive pressure to follow the government's planning. As some leading IT companies in the country have forecasted optimistic growth and benefits of cloud computing, it might be easier for other IT companies to model after the trend. Lastly, as more competitors move toward cloud computing platforms, the remaining companies that have not yet implemented it will inevitably face normative pressures and eventually follow the industry's collective action.

3. Proposed Research Methodology

A mixed methodology is proposed for the investigation. At the first phase, I seek to gain deeper insights of how individual companies perceive cloud computing and how their practice might take place. A case study is most suitable to understand those issues in depth. The insights gained will then be analyzed via theoretical lens proposed. At the second phase, the purpose is to understand the collective perception and practice of the local industry as a whole. It will be more feasible to conduct a survey method via online questionnaires resulted from the case analysis at the first phase. The proposed timeline for each phase is spring and summer 2011, respectively.

4. Potential Implications

For practitioners, the rapid growth of the UAE economy in general and its IT services in particular provides great business interests to global investors. As cloud computing is widely anticipated to substantially influence the local industry, the empirical understanding gained from the proposed study will potentially provide practical lessons and a valuable framework for future IT management in general and cloud computing practice particularly. For researchers, the unique social, political, and cultural environment of UAE significantly shapes the local IT practice and business directions. Empirical insights gained from such a unique context should provide interesting theoretical comparison with cases investigated in the global context.

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