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The Asian Difference in B2B E-Marketplace

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Abstract

This study contends that the low rate of e-marketplace acceptance by Asian firms cannot be fully understood without analyzing the context within which technology is exploited. Current IOS (Inter-Organizational Systems) studies emphasize the removal of barriers to e-marketplace acceptance in relation to technological, organizational, and inter-organizational factors. However, the contextual influences of IOS are largely ignored. We highlight three levels of contextual influences – structural, national/regional, and socio-cultural – that shape the adopters' expectation of e-marketplace applications in three Asian regions (India, Taiwan, and China). Our study formulates arguments that attempt to flesh out the constraint of context as one of the most significant, but often neglected, dimensions of e-marketplace acceptance.

1. Introduction

There has been a rising interest in using e-marketplaces (electronic marketplaces) to enable closer B2B (Business-to-Business) collaboration. Nonetheless, the widespread e-marketplaces have not been adopted readily into companies in Asia. The study is an initial attempt to explore the reasons for the non-acceptance of e-marketplace in inter-organizational contexts situated in a different cultural setting.

An e-marketplace can be defined as a platform that uses the Internet to enable buyers and sellers to conduct inter-firm trading [3]. There are three generic forms of e-marketplace [8]: (1) industry-based (i.e. vertical) or product-oriented (i.e. horizontal) e-marketplaces backed by founding members, (2) private e-marketplaces, usually formed by a single buyer or supplier, to link up their business partners, and (3) public e-marketplaces that are set up by neutral third party, known as "Net Market Makers", to facilitate business transactions for their participants, with their revenue coming from subscriptions and transaction-based fees.

Although e-marketplaces can reduce transaction costs, improve process efficiency, and enable virtual collaboration among partners, market analysts have reported that the majority of them have either closed down or are facing difficulties in attracting buyers and suppliers [21]. Recent reports, though somewhat limited, have shown that sole reliance on the application of the US business models in Asia is a recipe for failure [4][8][19][23].

The present study seeks to highlight the limitations of a technical-economic view of e-marketplace adoption [2][18]. It explains how contextual forces that have shaped Asian businesses play an important role in the adoption of e-marketplaces.

2. Barriers to the acceptance of e-Marketplaces

Three broad categories of adoption barriers have been identified in current literature: technological, organizational, and inter-organizational [11][16][25]. *Technological barriers* are concern with technological complexity. For example, the adoption of e-marketplaces requires effective the use of external network technologies. As security technology is still at an embryonic stage, transaction risks are endemic. Other major technological challenges include system integration, software migration, data conversion, and the compatibility of hardware and software between partners [19]. For most adopters of e-marketplace, the sheer complexity of technological problems can prevent them from accepting the new technology.

A common *intra-organizational* inhibitor is the lack of sufficient training and education in the technologies involved. Furthermore, the adoption of e-marketplaces often requires companies to redesign their internal business processes, if the technologies are to be used effectively [5][20]. But this is not easy, especially when operations are deeply bound by different technologies in different organizations. Lee and Clark [20], for example, explore two failed attempts to introduce electronic exchanges into the potted plants and fresh meat sectors. They explain that the ineffective integration of product and transaction flow, which caused inconsistent purchasing quality, was a major cause of such failure. Clark and Stoddard [5] also point out that a key adoption barrier is to exchange marketplace data among organizations in transaction and replenishment processes. They explain that new technologies break old routines and the keepers of the old routines often resist, usually because they have to master new socio-technical skills that are imperfectly realized and barely understood in relation to existing ways of doing things.

Inter-organizational barriers often arise from the factor of power and trust [1][11]. For example, in a case study of Ford Motors [27], the company was in a strong position to instigate the use of electronic procurement with its suppliers. However, its attempt to exercise coercive power over suppliers (e.g. through the transfer of

investment costs to them) resulted in adopters' resistance. Trust factor is another barrier. There are two aspects of trust: competence trust, which is concerned with a partner's ability to perform according to expectations, and intentional trust, which refers to a partner's intention not to defect from its collaborative party [24]. For instance, Hart and Saunders [11] analyze a retail company and show that asymmetry of product information-sharing among partners may lead to distrust of the market makers' competence, leading to adopters' abortion from the e-marketplace. Allen et al. [1] investigate an unproductive e-marketplace called TransLease (designed for automobile insurance) and explain how mutual distrust in intention arose among buyers (lease firms) and sellers (repair agents), stemming from both parties' conflicting goals. From a cognitive perspective, Barrett [4] explains why adopters (brokers and underwriters) feared the uncertainty and job security brought about by the London Insurance Market, where distrust emerged as a result of adopters' negative interpretations of the technology's intention.

One important matter overlooked in current investigations is the role of context, not only as a cause of inaction but also as a key factor involved in the production of barriers [2]. In this view, barriers to the adoption of e-marketplaces may derive from institutional contexts, including structural, national/regional, and socio-cultural aspects (categories which are not mutually exclusive).

Structural constraints are key adoption barriers in the adoption of e-marketplaces, especially in many developing countries in Asia. For example, the ineffective infrastructure in telecommunications, financial systems (e.g. electronic payment systems), legal and regulatory systems (e.g. taxation), and the logistics systems (e.g. transportation) will inhibit the adoption of e-marketplaces [21].

Barriers to e-marketplace applications cannot be fully appreciated without also understanding the challenges that stem from *national and regional contexts*. This point is underscored by a study that examines the adoption of e-marketplaces in Cyprus [2]. As the basis for a national agenda to transform small-sized enterprises into flexible, specialized organizations, the Cyprus government initiated a major industry restructuring. Avgerou [2] examined the introduction of three consortium-based e-marketplaces in the furniture industry. In spite of the existence of sufficient technological and financial supports, the furniture manufacturers aborted the use of these systems. As such, this failure should be seen in broader national and regional contexts.

Historically, Cypriot firms had moved from mass production to mass customization in order to pursue niche market, using the strategy of flexible specialization. However, the e-marketplace had been designed for volume transactions (mass production). Using it in the context of complex transactions (mass customization) was inconvenient. Moreover, the entrepreneurs were family owners, who understood their craft, suppliers and markets well, but were not at ease with e-marketplace. Hence, it was not possible for them to incorporate such systems in their existing operations. The owners neither had the skills to incorporate the system nor did they have the desire to make the changes. They would have had to reconfigure their customary business models and introduce professional managers into most of the family-owned businesses. This would mean asking entrepreneurs to relinquish power and undertake radical organizational transformation. These developments were all contrary to the entrepreneurs' expectations in adopting e-marketplaces, and the project ultimately failed.

The third impact of *socio-cultural constraints* on adoption failures may be illustrated in the case of the failure of SPRINTEL [18]. SPRINTEL was an e-marketplace designed for the textile trading community in Prato (near Florence, Italy). In spite of the provision of sound technical and economic solutions, Prato's traders did not accept the e-marketplace. In contrary, it developed distrust among traders. The distrust, which became the basis for resistance to the system, was not rooted in technical failures of the system but from Prato merchants' socio-cultural concerns.

Historically, Prato's traders had established an industry network formed by business communities that trusted each other. Their social relations were embedded within economic activities. Traders saw little value in having exchange systems that enabled faster and more reliable transactions. Prato's traders also preferred "high-context" communications (e.g. face-to-face encounters with rich body expression), and were worried that an e-marketplace might disable these preferred social interactions. Additionally, we need to appreciate that these Prato traders did not regard maximization of profit as the only purpose of business; rather, people participated in business as one important way of socialization. Moreover, these Prato traders were concerned that an e-marketplace might reveal the existence of redundant inventories, which, in their cultural context, would mean a public confession of business incompetence. Participation in a more transparent system would mean that not only other traders would know one's affairs; so would the tax authorities. The traders were worried about the impact of disclosing information about their *sommerso* (underground economy activities), such as tax evasion, in a cultural context where tax payment is seen as fair game.

While technology is typically thought of as a thing, as an entity, it is evident that for the traders of Prato it was a social relationship. The SPRINTEL study highlights the fact that technology acceptance is not based merely on technical excellence and economic gains. People do not communicate the meaning that they attribute to a technology individually, but collectively, in a common sense making. The SPRINTEL case clearly reveals that distrust resulted from the technology being interpreted negatively as a result of the socio-cultural context into which it was introduced.

Research into contextual influences offers a useful lens when examining technology adoption that involves cross-cultural transfer. Adopters' social expectations of

technology use are shaped by the context within which they normally operate. When researchers investigate the adoption of e-marketplaces in differing social, cultural, and geographical contexts, the conception of technology as a variable whose inherent capabilities premise its adoption becomes quite limited. The constraining role of context is significant in understanding the origins of resistance to technology adoption within organizations.

3. Research Methods

Our research took place in Commerce One (one of the leading vendors of e-marketplaces). The company had realized that their Asia headquarters were facing a major adoption challenge that had not been foreseen in terms of the marketing strategy adopted from the US headquarters. The US strategy promoted the benefit of cost reduction and process efficiency, but it did not seem to work in Asia. In spite of the company's marketing efforts, the level of acceptance remained low. With the help of the company, our pilot study involved three of their country portals (disguised name) – IndiaMarket (in India), TaiwanMarket (in Taiwan), and ChinaMarket (in China). The first author interviewed more than 50 key participants over a 16-month period (from January 2001 to April 2002). The data were mainly based on personal interviews with technology providers and adopters. Extensive field notes were taken during and immediately after these interviews. In this paper we report our preliminary findings concerning the contextual constraints that persist in e-marketplace adoption in Asia.

The approach to data analysis that we adopted is one that relies upon the contextualist perspectives [2] and cross-cultural transfer of technology [18]. An important analytical aim is to examine how the different contexts of solution providers and potential adoptee influence the adopter's expectation of e-marketplace use.

Three theoretical angles were used to guide our field interviews and investigate the non-acceptance reasons in each site. In IndiaMarket, we examined the structural context and highlighted the impact of India's complex taxation systems on e-marketplace adoption. In TaiwanMarket, we turned to the conditions shaped by the national and regional contexts. We explored how industry migration in Taiwan had gradually shifted Taiwanese adopters' expectations of e-marketplaces. In ChinaMarket, we explored the extent to which the theory of Chinese Relationalism informed a different cultural pattern of business practice, in contrast to Western (Anglo-American) models of commerce. Understanding the extent to which such a pattern constitutes a different frame offers valuable explanation of the underlying resistance to e-marketplace systems in the Chinese trading community.

The three stakeholders in the e-marketplace studied consisted of buyers, sellers, and NMMs (Net Market Makers, see Figure 1), the latter as information intermediary. NMMs provide two important services to participating members. First, they offer a technological platform for both buyers and sellers to conduct product search, procurement, auction and transaction. Secondly, NMMs offer physical value-added services to fulfill business transactions, including product content management, business intelligence, financial payment, logistics, and shipping inspection. To sustain revenue, NMMs normally charge buyers and sellers a subscription or transaction fee for their services. Alternatively, other NMMs assist adopters in installing their own proprietary e-marketplace systems by charging consulting and software licensing fees. The common goal of NMMs is to achieve a critical mass of adopters so that they can collect enough subscription fees to sustain their services. To achieve this, a common adoption strategy is to recruit large buyers and attract the associated sellers. The value proposition for buyers, offered by these three NMMs, is to access more sellers (suppliers), gain best price advantage and streamline supply chain processes.

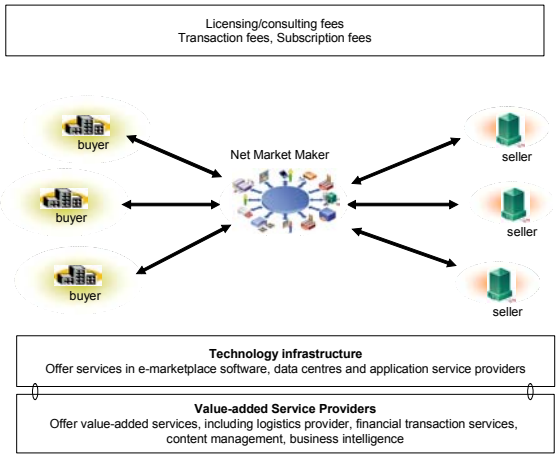

Figure 1. The Function of a Net Market Maker

NMMs had a crucial role to play as brokers, in whose interests the spread of adoption would be hastened. Yet, upon the completion of our fieldwork, most adopters had not fully adopted e-marketplace solutions, despite the actions of both Commerce One and the NMMs as providers of solutions that involved the adoption of the e-spaces on sale. The potential adopters were less concerned with technological problems, process integration, and inter-organizational trust, as emphasized in the IOS literature. Although adopters reported common constraints imposed by the public infrastructure (such as poor telecommunications and electricity provision), they seemed to worry more about the crises arising from their local contexts. We came to recognize the importance of seeing these adopters' resistance to e-marketplaces as something that required careful consideration of the influence of contextual conditions. A summary of the three cases is shown in Table 1.

Table 1. Description of Cases

	IndiaMarket	TaiwanMarket	ChinaMarket
Background	A project seeking to business opportunities in light of Indian government's IT Bill.	A quasi-government project helping Taiwanese manufacturers to integrate supply chains with MNC.	A government initiative to prepare for WTO entry.
Time of launch	May 2001	March 2001	May 2000
Technological Platform	Commerce One's e-marketplace systems: e-procurement, e-auction, and order management.		
Value added services	Change management, telecom infrastructure, logistics, Credit-rating information services, business surveillance, pre-shipment inspections, and financial payment.	Data center, hosting services, technology integration, financial transactions, business intelligence, product catalogue management.	Financial transactions, technological infrastructure, logistics, and Digital certification.
Adoption strategy	Buyer-led adoption: targeted at 50 major buyers in India.	Buyer-led adoption: leverage on a government initiated project for computer industry; aiming to recruit key buyers as shareholders.	Buyer-led adoption, government initiated: focus on state-owned exporting companies in ten key industries.
Focus of analysis: contextual constraints	Structural constraints (especially taxation issue).	National/ regional contexts (Industry migration).	Socio-cultural context (*Guanxi* networks).

4. Findings: Unearth the Contextual Influences

4.1 IndiaMarket case: Taxation Dynamics

Not until the late 1980s, when the government realized the futility of shutting India off from the rest of the world and started to liberalize the economy, by opening up the Indian business community to international competition. Faced with this challenge, Indian businesses began to adopt international trade practices. The federal government also introduced an Information Technology Bill in June 2000 with the aim of integrating the fragmented markets that existed among the 30 states comprising the federation, in order to attract foreign direct investment.

By late 2000, Indian's e-commerce appeared to be promising. Large enterprises, such as TELCO, one of the flagship TATA companies, began to sell scrap machinery and manufacturing surplus to partners through e-marketplaces. Increasingly, MICO (a BOSCH subsidiary) also sold fuel injection pump inventory to its partners over the Internet. Nonetheless, most enterprises still could not afford the cost of either setting up e-marketplaces.

In May 2001 IndiaMarket was incorporated to provide intermediary information services to Indian business communities. It commenced with an early success in the form of the introduction of an e-procurement solution for DCM Shriram Consolidated Ltd., an e-auction for Hindalco (India's largest aluminum producer), and an e-marketplace for Tata International. IndiaMarket's strategic vision was to help Indian enterprises shift their trading relationships to e-marketplaces.

In terms of structural constraints, the lack of sound infrastructure was still the primary barrier to the adoption of IndiaMarket. These explicit constraints included poor infrastructure in financial, logistic, legal and other services in India. In terms of financial infrastructure, Indian adopters reported that most areas still had no efficient inter-bank transaction systems. Issuing a letter of credit could involve as many as seven banks and government agencies. There were also no monitoring systems to evaluate suppliers' credit risks. In terms of logistics infrastructure, there were still few established third party logistics providers. It was difficult to keep track of consignments as well as to maintain reasonable control of traffic in cities. In terms of legal infrastructure, the overburdened legal system presented numerous difficulties when a legal sanction was needed against defaulting debtors. The lengthy legal processes alerted buyers to the problems of transacting with suppliers lacking credentials. Finally, because of poor telecommunications infrastructure, constant power breakdowns were a part of life. The demand for electricity outstripped supply in many industrial cities such as New Delhi and Bangalore.

These were the explicit structural constraints. However, there was one implicit structural constrain that was, perhaps the most serious threat to e-marketplace adoption: India's taxation systems. Adopters doubt whether an e-marketplace can be localized easily to accommodate the complexity of governmental taxation variation. One example of this variation is in the way in which the central and state governments levy taxes. The federal government is empowered to levy central taxes, which includes sales, custom and service taxes. The states levy sales taxes and excise duty based on the value of commodities. Another impediment is the "octroi", a tax on the entry of goods into a local area for consumption, use or sale. The federal government also allows the states to levy taxes on inter-state sales. The effect is the creation, within each state, of a tariff zone where taxes are levied on exports to other states. Even with the ceiling on the inter-state sales tax, the cascading nature of the tax system produces a situation where effective tax rates are uncertain, as tax costs vary with the process of the goods sold.

Consider the following example of an automobile parts manufacturer in New Delhi. Based in state A, when a sales forecast plan was proposed, the company had to pay pre-sales taxes to the government of state A. The company

also had to pay turnover taxes on a fiscal year basis. If the company transported products to state B, it had to pay excise taxes to the government of that state. Any components sold there would also be subjected by the local government of state B to local sales taxes, service taxes, and turnover taxes. The complexity was compounded by the constant variation of the tax structure, in terms of both the rate of tax and the range of taxable items. With components consisting of several hundred parts, putting the mathematics of taxation into a computer program would itself be a very difficult task. Moreover, one should also appreciate that Indian businessmen are always worried about exposure of their various tax-avoidance tactics (this is similar to Prato's case).

The use of e-marketplaces runs against India traders' social expectation in response to the business conventions shaped by those structural conditions. The reasons for non-acceptance of the technology can thus be understood.

4.2 TaiwanMarket: Industry Migration

Before 1998, a hostile political relationship had severely handicapped formal business collaboration. The softening of those relationships encouraged Taiwanese enterprises to extend their manufacturing bases to the major cities in China. Adding to this industry migration was the strategic transfer by multi-national corporations (MNCs) of their regional headquarters to China. For most Taiwanese firms, this could involve the migration of their whole supply chain to China. In the computer industry, for example, Compaq alone procured about US$85 billions in Taiwan in 2000. If Taiwanese firms did not move with their key buyers, they would soon put their long-established business relationship into jeopardy.

In March 2001, a Taiwanese quasi-government agent, Institute for Information Industry (III) decided to help the computer industry build an e-marketplace to link up buyers (Compaq was the first test site) and suppliers (Taiwanese firms). The purpose was to maintain close collaboration with these key buyers while assisting Taiwanese suppliers to streamline their supply chain operations.

The transformation from domestic to regional operation presented a great challenge to Taiwanese firms. The migration involved not only moving factories and people to China but also managing product designs, strategic sourcing, and supply chain activities across the different regions of China. For example, the relocation of a computer notebook manufacturer required product design engineers in Taiwan to work collaboratively with manufacturing sites in Shanghai and Xiamen. The company often had to hold co-location meetings in order to make sure that products were designed to comply with specification and manufacturability requirements. Face-to-face discussions and conference calls were perceived as trustworthy methods of communication. Moreover, the company had to extend its supplier bases to China, which meant that it had to replace some of its Taiwanese tier three suppliers and to source local suppliers in China for reasons of cost advantage.

The context of industry migration helps us to understand why these Taiwanese firms were not interested in e-marketplaces (presented in the US model) that mainly offered the functions of product search, electronic procurement, and auction. In the context of industry migration, Taiwanese firms' managerial attention was more concerned with collaborative design, strategic sourcing, supply chain management, customer retention, and regional operation. The e-marketplace did not match this expectation and was considered to be of little use.

4.3 ChinaMarket: Chinese Relationalism

In 2000, China faced the challenge of entering the WTO (World Trade Organization). The government sought to transform key national enterprises (such as steel industry) in order to prepare them for the transition from the traditional planned economy to a market economy. To achieve this end, the government agent (The Development Research Center of The State Council) initially planned to construct an unprecedented industrial park, big enough to accommodate ten key business sectors. International traders could visit this industrial park, search products, identify potential business partners, and achieve one-stop shopping.

The establishment of such an industrial park required enormous investments, in terms of money, land, and other resources. Additionally, state planners envisaged that upon completion such an industrial park could result in major traffic problems, the possibility of an increase in criminality through concentrating major commerce, as well as an increased demand for enhanced public services. Thus, from the state perspective, the risks associated with such a project were high. Building a vast incubator on such a scale would also have major socio-spatial implications for the host region.

Eventually, the planners conceived the concept of a virtual business park, incorporated as ChinaMarket.com in March 2000, with the aim of enabling the idea of an e-WTO response (i.e. using electronic means to respond to the WTO challenge). An American model of commerce guided its design.

The launch was not entirely successful. Although ChinaMarket consultants emphasized the benefits of cost reduction, process efficiency, and business opportunities (especially access to more international buyers), adopters still expressed difficulties in relating the systems to their existing business practices. To appreciate this dilemma, we need to understand the socio-cultural context in which the Chinese conduct their business activity. This involves *Guanxi* (relationship) networks, high-context communication, and in-group favoritism [13][22][15].

In the American model of commerce [18], the purpose of business emphasizes optimal economic gains achievable under a model of rational assumptions (this generalization is only for illustration; in fact, American businessmen also emphasize relationship-based trade, see [9]). Cost and efficiency are two important criteria of this model. For example, buyers are conceived as agents wishing to invest in technology in order to reduce search

costs (by identifying suppliers more quickly), transaction costs (by increasing process efficiency), and labor costs. Buyers will readily replace suppliers should they find preferable substitutes that can offer better product quality at a lower price. If there are non-repudiation issues, buyers and suppliers can settle their disputes through legal assistance.

Chinese traders operate with a different approach to business, using a different frame of assumptions (note: again, the generalization is for explanatory purpose; it will be problematic when different regions of Chinese traders are considered). Because contemporary China has not yet established a sound market and legal infrastructure, entrepreneurship often follows a culturally conventional approach of building business from family-based networks. In this context, since most non-repudiation issues and other trade disputes cannot be settled easily within the Chinese legal framework, the selection of business partners involves high risks, especially where non-family members are involved. Thus, the tendency is to keep business, as much as possible, within the family or close kin relations. Reducing business risks becomes a prime objective of the formation of any business partnership. To evaluate the trustworthiness of their trading partners, the Chinese often employ a set of implicit, but specific, strategies.

First, *Guanxi* networks are used widely to extend personal (family-based) relationships to business relationships. Chinese businessmen generally consider three types of network: family, friends and strangers[7] [15]. These three types of network represent how well a person can trust their business partners. For example, Chinese traders often trace the genealogy of their potential partners to see if there is any family linkage. This does not mean that they will necessarily trust their partners as long as a kinship link is found. The purpose will be to use family relatedness as a way of tracing the partners' background, in order to learn about their credit, past record of business practice, and personal integrity. Forming business partnerships, for most Chinese traders, is like establishing life-long friendships. For Chinese traders, *Guanxi* is not just about forming business relationships but also about forming personal friendships, with the purpose of reducing business risks.

Second, having these networks as a method of checking personal credentials is not enough. Chinese traders also develop an implicit method for evaluating personal integrity, reducible to one ultimate question: how can I trust this person with my business? Chinese traders employ tacit communication protocols, known as high-context communication: messages are comparatively terse in words, but rich in meaning [22].

For Chinese traders, metaphors are frequently used as a means for high-context communication. This has at least three purposes: to avoid direct conflicts, to test personal integrity and intelligence, and to communicate meaning with maximum ambiguity (so no one has to promise anything and rush into partnerships). Additionally, in order to assess trustworthiness it is more important to observe the other person's social behavior than to consider what the person says rhetorically.

Third, building business partnerships in this *Guanxi*-based context breeds favoritism. However, one must not be tempted to attribute negative meanings (such as bribery) to favoritism; otherwise, one may only see favoritism in terms of its face value. Favoritism is considered as an appropriate way to maintain existing *Guanxi* networks in Chinese business communities [14].

Understanding the socio-cultural context in Chinese business communities helps one appreciate its influence on the rate of acceptance of e-marketplaces. The introduction of e-marketplaces will inevitably threaten Chinese traders' existing ways of building and maintaining *Guanxi* networks. Identifying suppliers through a computer interface presumes that buyers can reasonably trust suppliers, but this assumption conflicts with the traditional Chinese *Guanxi* approach to assessing potential partners. Although Chinese traders could identify more promising suppliers by using an e-marketplace, they would also be hesitant to replace existing suppliers for fear of jeopardizing long-standing *Guanxi* networks.

Chinese adopters thus perceive the e-marketplace as an unsophisticated way to minimize business risks, especially without the fluid assistance gained by mobilizing their *Guanxi* networks. Additionally, for Chinese traders used to conducting businesses through human interactions, i.e. through the social processes normally used to make friends and gain recognition in business communities, the depersonalized system features were perceived as obstacles to a properly social business relation. For the Chinese, good business practice should involve assessing trusted persons through existing *Guanxi* networks, building business partnerships through personal relationships, and maintaining *Guanxi* through in-group favoritism and reciprocity. According to these assumptions, the e-marketplace based on technical-economic assumption seems to add little value, and is insensitive, to these Chinese adopters' social expectation of technology use.

5. Implications: The Significant Role of Context

A frequent comment suggested by adopters of these three e-marketplaces is that e-marketplaces seem to be an American management practice that does not fit easily with Asian contexts. But, why do they make such comments? Our study offers a contextualist explanation.

This research highlights three kinds of contextual influence on e-marketplace acceptance: the structural contexts, national/regional, and socio-cultural. First, the study of IndiaMarket supports Markus and Soh's [21] observations concerning the effect of structural conditions. Structural constraints, such as the lack of logistic, financial, educational, and legal infrastructures, can significantly influence the decision to accept technology. Particularly, such structural influences are often difficult to resolve within a short period of time, as they are deeply

embedded in political and economic systems within a country.

Second, our findings in the TaiwanMarket case resemble those in Avgerou's [2] study of the unsuccessful adoption of e-marketplace in Cyprus. The changing national/regional context redefines the role of information systems in business operations. Non-acceptance occurs because adopters cannot see the relevance of technology use in response to the challenge imposed by their specific national or regional context. For many such local contexts the customary business practice are of more salience than the efficient markets assumed elsewhere.

Third, ChinaMarket's case echoes SPRINTEL's failure in Italy [18]. Similar propositions are also supported by other research: for example, Martinsons and Westwood's [22] study of MIS adoption in Chinese enterprises, and Walsham and Sahay's [26] investigation of Geographical Information Systems in India.

Generally, Asian-based studies, such as Kendall et al.'s [17] survey of e-commerce adoption in Singapore, and Hempel and Kwong's [12] investigation of B2B e-commerce in China, overlook such contextual influences. Our aim in this study is to urge practitioners and researchers not to limit their evaluation to the technical-economic dimension of adoption problems, thereby failing to appreciate the more subtle aspect of contextual influence.

6. Conclusion

The three case studies offer an initial explanation of the adoption challenge of e-marketplace in three geographical regions in Asia. The analysis focuses on the embedded context for business activity rather than the technological features and organizational processes. We conclude that the resistance to e-marketplace was not limited to technological, organizational and inter-organizational impediments. In the three cases it is more important to understand the role of context in shaping adopters' expectation of technology use [10], which in turn led to non-acceptance. In this situation, adopters were unclear how an e-marketplace would add value to their businesses. Hence, if e-marketplace use is perceived as irrelevant to the expectation of the adopters – expectations shaped by contexts – the entire adoption effort may wither before technology has a chance to take root. Hence, effective adoption of technology depends on a consideration of how people's expectation of technology use is met in a given context. The lens of context adds a fruitful, alternative perspective in explaining and anticipating technology outcomes.

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