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Institutional Effects on E-payment Entrepreneurship in a Developing Country: Enablers and Constraints

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The purpose of this study is to understand how regulative, normative and cognitive institutions affect e-payment entrepreneurship in developing countries. Lack of e-payment technologies has been identified as a key constraint to e-commerce adoption and diffusion in the developing world. The availability of e-payment technologies in the developed world provides opportunities for their transfer to and adaptation in the developing world. However, research on attempts by governments or e-business entrepreneurs to provide e-payment innovations in the developing world and possible institutional effects on such initiatives remain limited. Drawing on interpretive case study methodology and the new institutional theory as a lens, this study traces an e-payment entrepreneurship attempt in the developing-country context of Ghana. The findings show that some national and international institutions encouraged the initiative. However, unclear regulations and bureaucratic processes of the Central Bank as well as the entrepreneur’s own cognitive failure to consider contextual differences between the developed and the developing world constrained the initiative. The study advises developing-country e-business entrepreneurs to understand their local institutional environment and not assume that imported technologies will work the same way as in the developed world. It also calls on developing-country governments to promote clear regulations and streamline certification processes to encourage technological innovations such as e-payment.

Keywords: e-payment; e-business entrepreneurship; regulatory environment; institutional theory; developing country; Ghana

1. Introduction

The purpose of this study is to understand how regulative, normative and cognitive institutions shape e-payment entrepreneurship in developing countries. Institutions are established social structures such as laws, norms and cultural practices that shape social actions and interactions (Avgerou, 2000; Berger & Luckmann, 1967; Jepperson, 1991). E-entrepreneurship is the process of founding new internet-based businesses (Kollmann, 2006) such as an e-payment service provider. In an e-business context (Li, 2007), e-payment or online payment refers to the exchange of monetary value between payers and payees via the Internet (Ozkan, Bindusara, & Hackney, 2009; Travica, Kajan, Jošanov, Bubanja, & Vuksanović, 2007) or mobile networks (Choi, Crowgey, Price, & VanPelt, 2006). The success of e-commerce depends much on e-payment media such as credit card and e-cash (Baddeley, 2004; Sumanjeet, 2009; Travica et al., 2007).

In the developed world, e-payment has increasingly become the norm for settling e-commerce transactions (Mbarika, Okoli, Byrd, & Datta, 2005; Ngai & Wat, 2002; Sumanjeet, 2009). However, in most developing countries, access to e-payment systems remains limited; traditional payment methods such as physical cash, account deposits and bank transfers continue to dominate.

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payments for e-commerce transactions (Effah, 2012; Okoli, Mbarika, & McCoy, 2010). The availability of e-payment technologies in the developed world, therefore, offers opportunities for developing-country governments and e-business entrepreneurs to adapt them to fill the innovation gap. Within the developing-country e-business literature, lack of e-payment technology and the resultant problems for e-commerce adoption and diffusion have been well discussed (Adeyeye, 2008; Mbarika et al., 2005; Okoli & Mbarika, 2003; Okoli et al., 2010; Travica, 2002). However, not much is known from empirical research on initiatives by governments or e-business entrepreneurs to promote e-payment technologies locally and possible institutional effects.

In line with this knowledge gap, this research focuses on an e-payment entrepreneurship attempt in a developing country and the regulative, normative and cognitive institutional effects on the initiative and its outcome. The significance of the study stems from the opportunity to offer rich insight into possible institutional effects on e-payment initiatives in developing countries. The research question motivating the study, therefore, concerns how regulative, normative and cognitive institutions shape e-payment entrepreneurship in developing countries. To address the research question, the study follows interpretive case study (Klein & Myers, 1999; Walsham, 1995, 2006) as a methodology and the new institutional theory (DiMaggio & Powell, 1991; Jepperson, 1991; Scott, 2008) as a lens to trace an e-payment initiative in Ghana as a developing country. Interpretive case study was chosen to help provide rich insight into the research phenomenon in its real-life context (Walsham, 1993, 1995) while institutional lens was selected to help investigate the regulatory and socio-cultural environments and their effects (Avgerou, 2000, 2001; Baptista, 2009).

The rest of the paper is structured as follows. Section 2 reviews the literature on e-payment systems in developing countries. Section 3 discusses the new institutional theory as the study’s analytical lens. Section 4 presents the methodology in terms of the research setting and the methods used for data gathering and analysis. Section 5 presents the findings of the case study. Section 6 focuses on the analysis and discussion of the findings. Finally, Section 7 concludes the paper by outlining the contribution, implications, limitations and recommendations for further research.

2. E-payment systems in developing countries

The growth of e-commerce in any economy depends much on e-payment systems (Baddeley, 2004). E-payment systems refer to online infrastructure and payment methods for exchanging monetary values via the Internet (Ozkan et al., 2009; Travica et al., 2007). Credit cards, e-cash and e-checks are common examples of e-payment methods (Baddeley, 2004; Lowry, Wells, Moody, Humpherys, & Kettles, 2006; Meng & Xiong, 2004). In the developed world, e-payment has become the norm for settling e-commerce transactions (Okoli & Mbarika, 2003; Turban et al., 2008). In the developing world, however, traditional cash remains the dominant method for settling online transactions (Adeyeye, 2008; Mbarika et al., 2005; Okoli et al., 2010). Nevertheless, for effective and efficient completion of the online transaction cycle, e-payment is more convenient than traditional cash in terms of timeliness and cost savings (Baddeley, 2004; Mbarika et al., 2005; Sumanjeet, 2009; Travica et al., 2007). However, lack of e-payment services has been identified as a key constraint to e-commerce innovation and diffusion in the developing world (Ferran & Salim, 2005). A number of reasons have been identified for this. Online fraud is one such reason (Adeyeye, 2008). For example, Adeyeye (2008) notes that globally two developing countries, Nigeria and Indonesia, rank first and second in e-payment fraud. As a result, people prefer traditional payment to online payment. Another reason is the dominant cash culture in most developing countries and the inertia to switch to
e-payment (Kshetri, 2007b). Moreover, promoting credit card culture for online payment in developing countries has been difficult due to low incomes (Okoli & Mbarika, 2003). Also, local financial institutions, including banks, are unwilling to promote or accept credit card services due to perceived high financial and technical risks (Ferran & Salim, 2005; Fraser & Wresch, 2005). Some authors (Jennex, Amoroso, & Adelakun, 2004; Okoli & Mbarika, 2003) also attribute the problem to anonymous nature of online payment – the payer and the payee are unknown to each other. As a result, most developing-country citizens are unwilling to entrust their personal details to websites managed by anonymous people.

Yet, e-payment systems’ availability and use remain one of the key requirements for getting e-commerce to work in the developing world (Ferran & Salim, 2005; Okoli et al., 2010). The dominant use of traditional payment methods delays the completion of the e-commerce transaction cycle, making it relatively more expensive (Mbarika et al., 2005). Conversely, using e-payment medium such as credit cards and e-cash can speed up the online transaction cycle (Okoli & Mbarika, 2003). As Yang and Ahmed (2009) point out, limited access to online payment options forces many customers in the developing world to drop out of e-commerce due to dissatisfaction and inconvenience. Also due to perceived high risk of fraud and low level of trust, many suppliers and customers prefer the traditional to e-payment methods (Adeyeye, 2008). In addition, most local banks are not e-ready to process online payment transactions (Kshetri, 2007b).

Providing appropriate e-payment systems, therefore, remains a key requisite for getting e-commerce to work in the developing world (Boateng, Molla, & Heeks, 2009). The availability of online payment systems in the developed world presents opportunities for their transfer to the developing world. However, the literature on technology transfer to developing countries (Avgerou, 2008; Bada, 2002; Heeks, 2002; Walsham & Sahay, 2006) emphasizes the need to consider institutional differences between the developed and the developing world. The current study, therefore, extends the academic discourse on e-payment in developing countries from the limited focus on adoption and diffusion to the entrepreneurship phase and institutional pressures.

### 3. Theoretical foundation: new institutional theory

This interpretive case study draws on the new institutional theory (DiMaggio & Powell, 1991; Jepperson, 1991; Scott 2008) as analytical lens to understand regulative, normative and cognitive institutional effects on e-payment initiatives in a developing country. The new institutional theory is considered useful for explaining how established social structures including regulations, norms and cognitive processes shape social actions and interactions (Scott, 2008). Institutions are, therefore, established legal and socio-cultural practices that shape individual and organizational behavior in a given social environment (Avgerou, 2000; Berger & Luckmann, 1967; Jepperson, 1991). The old institutional theory viewed social behavior as subject to technical and economic rationality (Avgerou, 2001; Greenwood, Oliver, Sahlin, & Suddaby 2008; Orlikowski & Barley, 2001). It portrays technical and economic rationality as the driving force behind decision-making in organizations (Barley & Tolbert, 1997). On the contrary, the new institutional theory discounts rationality and posits that social behavior is rather regulated by institutionalized legal and socio-cultural practices (DiMaggio & Powell, 1991; Meyer & Rowan 1997; Oliver, 1991; Scott, 2008).

Scott (2001, 2008, 1995) presents three pillars of institutional theory: regulative, normative and cognitive with their elements as shown in Table 1.

First, regulative institutions refer to government regulations and industry standards that organizations are forced to comply with; failure to comply would attract sanctions (Kshetri, 2007a).
Regulative institutions, therefore, determine legal or illegal actions in a given social context. As this study concerns the financial sector, regulative institutions refer to relevant Central Bank regulations on e-payment systems. Second, normative institutions are norms and values that determine legitimate and illegitimate actions in a particular social context. They include social and professional norms that define what is or is not acceptable in line with established traditions, practices and values. Normative institutions offer guidelines for organizations to determine legitimate actions. In this study, normative institutions refer to established norms, traditions and practices in the socio-technical and economic environment of the e-payment start-up firm.

Finally, cognitive institutions are taken-for-granted customs and traditions that control the sense-making and decision-making processes of social actors. Cognitive institutions, therefore, refer to mental maps of individual or group decision-makers (Huff, 1990). Such institutions are strongly associated with culture, habits and thinking patterns of actors (Grewal & Dharwadkar, 2002; Jepperson, 1991). Cognitive institutions demonstrate the (un)awareness and (mis)understanding levels of the decision actor. In this study, cognitive institutions refer to the thinking and decision-making patterns of the e-payment entrepreneur. According to Scott, the distinction between the three pillars as regulative, normative and cognitive institutions are for analytical purposes only. In practice, they can overlap.

In relation with different uses of theory in information systems research as source of hypothesis, guidance, lens or scaffolding (Sarker, Xiao, & Beaulieu, 2012), this study employs the new institutional theory as analytical lens. The rationale for choosing the new institutional theory is based on the useful concepts it offers to help understand the regulative and socio-cognitive forces that enabled or constrained the e-payment entrepreneurship initiative in the developing-country context of Ghana. This is in line with the position of other authors (Avgerou, 2000, 2001; Kshetri, 2007a; Orlikowski & Barley, 2001) that institutional theory is useful for investigating the relationship between information system innovations and their organizational and broader societal environments. Briggs and Brooks (2011) also consider institutional theory as useful for studying institutional arrangements in e-payment environments. However, their study did not cover e-payment entrepreneurship which forms the focus of this study.

### 4. Research setting and methodology

This study forms part of a larger research project into e-business entrepreneurship in developing countries. The current study focuses on an e-payment initiative in Ghana and the regulative, normative and cognitive institutional effects on the process and the outcome.
4.1 Research setting

The setting for the research is the developing-country context of Ghana. The case study was based on ePayGhana (pseudonym), a small start-up firm that attempted to introduce online payment innovation in Ghana. The researcher gained access to the case organization through an initial personal contact with the entrepreneur in 2008 during an ICT trade fair in Ghana. The initial contact was followed by e-mail and telephone conversations out of which the entrepreneur agreed to grant access. As in most developing countries, online payment services in Ghana remain underdeveloped. Since 2005 international providers such as VISA, MasterCard and PayPal have withdrawn their online payment services for customers in Ghana due to perceived high cyber fraud (Ghana News Agency, 2009; Guermazi & Satola, 2005). In recent times, few banks have begun to provide VISA and MasterCard online payment services for foreign transactions at a very limited scale and often under special arrangements. This study is, therefore, considered interesting to provide rich insight into an e-payment initiative and institutional effects in a developing-country context.

4.2 Methodology

The methodology for this study is based on qualitative, interpretive case study (Klein & Myers, 1999; Walsham, 1995, 2006). In information systems research, interpretive case study seeks to understand interactions between information systems phenomena and their real-life contexts (Walsham, 1993). The ontological and epistemological perspective of interpretive research is that reality and knowledge are subjective because they are both socially constructed between researchers and their participants (Myers, 2009; Orlikowski & Baroudi, 1991). Interpretive research does not, therefore, claim objectivity but pursues subjectivity in research phenomenon, process and output (Klein & Myers, 1999).

Following the interpretive paradigm, this study seeks to understand the interaction between the e-payment initiative and its institutional environment. The rationale for choosing the qualitative, interpretive case study approach was based on the understanding that it can help generate in-depth understanding from the research phenomenon and its institutional environment. This rationale is based on the understanding that interpretive case study helps to investigate social interactions between information systems phenomena and their real-life contexts (Klein & Myers, 1999; Walsham, 1993).

4.3 Data gathering

Data gathering for the study occurred between 2008 and 2010. As interpretive research depends on data from multiple sources (Walsham, 1995, 2006), the researcher gathered data from formal and informal interviews, observations, project and corporate documents, relevant central bank (Bank of Ghana) regulations, artifact analyses and focus group discussions. Additional data came from newspapers and Internet searches. The researcher conducted formal, semi-structured interviews with 20 participants, including the entrepreneur (1), employees of ePayGhana (5), software/web developers (8) and officials of partnering commercial banks (6). Interview questions focused on the participants’ roles in the e-payment entrepreneurship process and which institutional pressures and how they shaped the initiative and its outcome. Each interview lasted between 1 and 2 hours, was tape-recorded after gaining participants’ consent and subsequently transcribed.

Additional data came from informal discussions with some of the participants. The researcher also gathered by observing the e-payment application modules through demonstrations and walkthroughs organized by ePayGhana staff. He also participated in and captured
data from 12 project meetings that discussed systems development and implementation issues, ongoing negotiations with potential partnering banks (commercial banks) and discussions with the Central Bank (Bank of Ghana). After the fieldwork, the researcher presented initial findings to the participants in a workshop at the firm’s premises. The workshop offered a forum for feedback and verification of emerging findings. Follow-up interactions, however, continued via e-mail and telephone conversations.

4.4 Data analysis

The data analysis aimed to identify themes relevant to significant phases of the entrepreneurial process, role of the entrepreneur and other stakeholders as well as institutional effects on significant activities. Based on the interpretive tradition, analysis occurred both during and after data collection (Myers, 2009; Myers & Avison, 2002; Walsham, 1995, 2006). The researcher accumulated the data gathered from the various sources and followed a qualitative, thematic analysis (Miles & Huberman, 1994; Ryan & Bernard, 2003). The technique involved carefully reading, summarizing, reflecting and categorizing the data into emerging thematic segments (Miles & Huberman, 1994; Walsham, 2006) to induce themes on significant events and process of the e-payment initiative and institutional pressures.

Using concepts from the new institutional theory, the researcher identified themes related to regulative, normative and cognitive institutions and how they enabled or constrained the e-payment initiative. To ensure authenticity, plausibility and criticality of the analysis and sense-making (Walsham, 2006), the researcher obtained feedback on interim findings from colleagues and other researchers. Principles of the interpretive case study proposed by Klein and Myers (1999) and Walsham (1995, 2006) including the need to pay attention to context and social construction of the research phenomenon and emerging knowledge were used to evaluate the findings of the study as reported below.

5. The case of ePayGhana

ePayGhana (pseudonym) was founded in 2005 to provide online payment services in Ghana. Among the key factors that motivated the entrepreneur were perceived benefits of online payment technology in the developed world and lack of its use in Ghana. As in many developing countries, availability of online payment systems to support e-commerce in Ghana remains limited. Moreover, due to high perceived cyber fraud, issued bank cards are limited to offline use on ATMs and point of sale (POS) terminals. The Ghana Interbank Payments and Settlements Systems Limited (GHIPSS), an agency of the Central Bank of Ghana, has also introduced a biometric smart-card called E-Zwich, which is also limited to use on ATMs and POS terminals. Online payment for e-commerce via the Internet, therefore, remains limited. The entrepreneur, therefore, viewed the situation as an opportunity to introduce online payment services in the country. The following sections present the e-payment entrepreneurship process and how it was shaped by the institutional environment.

5.1 Opportunity identification and initial development

According to the entrepreneur, the opportunity to found ePayGhana emerged in 2005 through his engagement with the then newly established Ghana’s National Health Insurance Scheme (NHIS) as one of its consultants. He had been contracted to help establish regional and district offices for the NHIS. While on this duty, he observed several anomalies in the manual accounting in use for processing premiums. The scheme had engaged agents to register and collect premiums from
members. On a number of occasions, some of the agents failed to properly account for the amount they had collected. Meanwhile, the manual record keeping could not properly track such financial malfeasance. Although this problem was outside the entrepreneur’s scope of work, he saw it as an opportunity to set up an IT firm to develop and provide insurance-payment-processing software for the health-insurance sector.

The entrepreneur engaged a team of programmers who developed the initial payment software for the PC and LAN platform. After testing it at selected district offices of the NHIS, the team expanded the functionality to include hospital-claims management. On completion, the modules for the software included member registration, premium processing and claims management. However, a series of demonstrations to some NHIS managers and private health-insurance firms revealed that potential clients would rather prefer Internet-based software with capability to integrate distributed branches. This revelation triggered the need to migrate the payment software from the earlier PC and LAN platform to the Internet.

5.2 Online payment system development

Following the Internet idea, the entrepreneur hired a team of developers to migrate the software to the Internet platform. However, after conducting Internet searches on potential e-payment business models and further brainstorming with friends, colleagues and some IT experts, the entrepreneur saw the opportunity to model his e-payment system after PayPal so that customers can have online accounts to transfer funds into or from. He believed that doing so would produce a system that could process insurance premiums and claims and also serve the payment needs of suppliers and customers in other sectors such as utility, education and retail. He also considered the e-payment system as an opportunity to eliminate collection agents from the insurance-premium-payment process since insured members would directly pay online. The entrepreneur described the opportunity as follows: “If members can register and pay online, then the agents are not needed.”

In the absence of credit card technology to support the e-payment innovation, the entrepreneur finally settled on pre-paid scratch card as the payment medium, similar to what mobile telecommunication companies sell to their customers to pay for airtime. The intention was that users would buy scratch cards from distributors and use the codes on the card to pay via the ePayGhana Website. In line with this, the development team designed scratch cards in various denominations of the local currency. The marketing manager described the expected functionality of the e-payment system as follows:

Users can buy scratch cards in various denominations and go to the website where they can select merchants, services/products and enter their PINs. The website will validate the PINs and ask the user to enter the amount on the cards.

After the system development, it became difficult to get a local firm to host the website with the related back-end applications. Following a series of Internet searches, the entrepreneur contracted a US-based firm to host the website from there.

5.3 Connecting to e-banking

After further brainstorming with colleagues and some IT experts in addition to online searching on e-payment models in the developed world, ePayGhana recognized the need to link its e-payment system to the local e-banking systems. Such a connection was expected to provide an alternative to the scratch-card-payment medium by enabling users to transfer funds from their bank accounts to their e-payment accounts to settle online transactions via the ePayGhana Website. It was also expected to link suppliers’ bank accounts to their online accounts, enabling
them to receive payments from customers and electronically transfer funds between the two accounts. The entrepreneur also wanted the partnering banks to provide automatic reconciliation services between ePayGhana and its users.

The firm approached a number of banks to sell the idea but most were not yet Web-enabled. Some were also not interested because they considered the proposed idea as a potential risk for cyber fraud. Nevertheless, a few of the newly established banks agreed to partner with ePayGhana. The firm organized a series of demonstrations for the interested banks. Through the demonstrations, some of the bank managers pointed out lack of mobile interface as a key limitation of the e-payment system and called for it to be included.

Because of the wide diffusion of mobile technology in Ghana, the banks expected ePayGhana to add a mobile interface to the e-payment system. Their argument was that mobile phone access exceeds Internet access. Meanwhile, the new banks have been communicating with their customers through mobile telephone and short message service. ePayGhana agreed and added the mobile payment interface to the e-payment system. After the in-house testing of the e-payment application, the entrepreneur expressed his joy as follows: “now users can pay through the Internet or through their mobile phones.”

### 5.4 Halted by a Central Bank directive

In 2009, ePayGhana was just ready to launch the e-payment service to the public and to commence business. However, some officials of the collaborating banks drew the entrepreneur’s attention to a Central Bank’s (Bank of Ghana, 2008) directive that requires operators of branchless banking (e-banking) to obtain prior approval and license before deploying any technology:

Prior approval must be obtained from the Bank of Ghana for the deployment of new switches, ATMs, Points of Sale (POS), card or mobile phone payment products. (Bank of Ghana, 2008, p. 3)

The document specifically named banks and savings and loans companies as the target group. Initially, the entrepreneur argued that the directive did not affect ePayGhana since it was neither a bank nor a savings and loans company. He argued that his firm was just an e-payment intermediary. However, officials of the banks advised him to seek clarification from the Central Bank. Upon further enquiry from the Central Bank, the entrepreneur was told that his firm needed to comply with the directive since its services concerned payments.

The entrepreneur decided to comply. As part of the process, ePayGhana needed to submit a signed contract with at least three commercial banks that had agreed to be its partners. It also needed the services of a solicitor to help design the agreement between ePayGhana and the three commercial banks. The entrepreneur described the challenges he encountered in identifying a solicitor with the requisite knowledge:

To get a lawyer who understands payments was a hell. So I could not find one and I just stopped and took a criminal lawyer as my legal advisor. But you know that is not the best. You need to take a legal person who has an insight into these things – financial systems. So it means that all the legal agreements we drafted he has no input.

Another difficulty ePayGhana encountered was getting an acceptable contract with the banks. The entrepreneur explained the frustrations as follows:

When we submit it [the draft contract] to the solicitors of the banks they look at it and they will just be correcting, change the h, you remove c. I think the final one that we have is a bit better because he [the lawyer] was willing to participate. So even though he is not in the area he went the extra mile to gather information.

After getting the contracts with the three banks ready, ePayGhana faced the greatest challenge of getting the Central Bank to issue the operating license. The process was inundated with lack of
clarity and undue bureaucratic delays. After over three years of back and forth with the Central Bank without success, the entrepreneur did not foresee any progress. In 2012, despite all the investments put into the project thus far, the entrepreneur decided to give up due to lack of clarity in the regulation and the undue bureaucratic nature of the licensing process.

6. Analysis and discussion

The purpose of this study has been to understand an e-payment entrepreneurship attempt in a developing-country context and how institutional factors enabled or constrained the process and its outcome. The case study findings raise a number of interesting issues for analysis and discussion; however, based on the research questions and the new institutional theory as a lens, this section discusses the regulative, normative and cognitive institutional enablers and constraints and how to promote e-payment innovation in developing countries.

6.1 Enabling institutional factors

The findings show that the initial objective of the entrepreneur was to provide software to address receipts and payments problems, first for the national health-insurance scheme and later for the whole health-insurance sector. However, the objective was later changed to providing online payment services for e-commerce. Some local and international normative institutions encouraged the online payment initiative. First, the normative cash culture in the country supported the need for an e-payment system that could facilitate settlement for e-commerce transactions. As noted in the literature, despite the growing access to the Internet and e-commerce infrastructure in the developing world, conventional cash remains the dominant payment method for e-commerce transactions (Ferran & Salim, 2005; Okoli et al., 2010). Yet online payment systems offer relative advantages for suppliers and customers in terms of convenience and faster completion of the e-transaction cycle (Okoli & Mbarika, 2003).

Another normative institution that encouraged the initiative was the growing local use of the Internet and mobile technology. Several organizations had gained Internet access. In addition, a number of people, especially among the educated and the youth in the urban areas, have increasingly become regular Internet users in the office, cafes and homes and through mobile devices. These normative factors encouraged the firm to switch from the initial receipts and payments software to online payment services. Normative use of scratch card as medium for selling and paying for airtime in the local mobile telecommunication industry also contributed to the initiative. In the absence of credit card, ePayGhana mimicked and modeled its payment medium alongside the scratch card for topping up units for mobile phones. Furthermore, giving the growing normative use of mobile phone as a medium of interaction between banks and their customers, managers of the partnering banks succeeded in getting the firm to include the mobile interface.

Another institution that encouraged the initiative was the normative use of e-payments for e-commerce in the developed world. Okoli and Mbarika (2003) note that e-payment has become an institutionalized method for settling e-commerce transactions in the developed world. From the findings, the ePayGhana development team mimicked the e-business model of successful online payment services providers like PayPal in the developed world. Moreover, awareness of the entrepreneur’s colleagues, potential users and the partnering banks of the benefits of e-payment use in the developed world also encouraged the innovation. The entrepreneur’s own cognitive awareness of e-payment systems and benefits in the developed world also encouraged the initiative. However, as noted below, his cognitive failure to acknowledge institutional differences between the developed world and the local environment constrained the initiative.
6.2 Constraining institutional factors

The experience of ePayGhana presents unclear regulatory framework and developing-country public-sector bureaucracy as two key normative institutions that constrained the e-payment initiative. According to the entrepreneur, lack of clearly defined regulatory framework specifically for e-payment services frustrated the entrepreneurial process. The framework used by the Central Bank to regulate the e-payment start-up was originally meant for banks and savings and loans companies that wanted to undertake branchless banking and their agents as noted in the legal document as follows:

The primary audience of these guidelines is deposit taking financial institutions (bank and non-bank) desirous to undertake branchless banking. (Bank of Ghana, 2008)

Concerning the agents, the document states as follows:

... as financial institutions cannot take on BB [branchless banking] without the help of other market players like telecom companies, technology service providers, agents etc., these guidelines are also helpful for other parties to understand their roles and responsibilities.

A fundamental issue that arises is whether ePayGhana’s business model falls within branchless banking. The regulatory framework refers to branchless banking as taking deposits and offering banking services outside physical branches. This suggests that branchless banking involves using the Internet or mobile telecommunication to offer banking services outside a physical branch. However, given that the business model of ePayGhana was just to provide online payment services, categorizing it as a branchless bank and regulating it as such seems inappropriate. According to the entrepreneur, he did not intend to take deposits or provide banking services. His firm only intended to partner with banks so that customers’ and suppliers’ bank accounts could be linked to their online payment accounts. Yet the Central Bank classified it as a branchless bank and decided to use the same law to regulate it as such. Given the lack of trust in e-payment innovation in developing countries (Jennex et al., 2004; Okoli & Mbarika, 2003) and the high incidence of cyber fraud (Adeyeye, 2008), it is important that Central Bank regulate e-payment services. However, the experience of ePayGhana suggests the need to distinguish e-payment services from branchless banking and provide separate regulations for each.

A related constraint to the entrepreneurial process was the normative bureaucracy in the public sector. Although the entrepreneur considered the branchless banking regulation as inappropriate for e-payment services, he was prepared to get ePayGhana to comply in order to commence business as scheduled. However, the licensing process was so bureaucratic that the entrepreneur became frustrated. The process involved continuous submission of documents and changes in requirements. After three years of frustration without progress in getting the operating license from the Central Bank, the entrepreneur decided to give up the e-payment initiative.

It is also important to note that the entrepreneur’s own cognitive institution that patterned his thinking on innovation transfer from the developed world also constrained the e-payment innovation. Given the success of e-payment models in the developed world, the entrepreneur thought that he could directly transfer the innovation locally and get it to work in the same way as in the developed world. As a result, he failed to consider possible regulatory and bureaucratic constraints in the local context. Although successful e-business models in the developed world present opportunities for their transfer to the developing world, several researchers (Averou, 2008; Bada, 2002; Heeks, 2002; Walsham & Sahay, 2006) have advised innovators to consider the contextual differences between the two environments.
6.3 Promoting e-payment systems in developing countries

The growth and success of e-commerce depend much on the availability of e-payment systems (Baddeley, 2004). Thus far, academic discourse on e-payment in developing countries has focused more on adoption and diffusion challenges (Mbarika et al., 2005; Okoli et al., 2010). In this discourse, dominant cash culture has been cited as one of the reasons for the low adoption (Ferran & Salim, 2005). Lack of trust in using or accepting online payment has also been cited as another reason (Okoli & Mbarika, 2003). Other identified factors include limited availability of e-payment instruments such as credit cards and digital cash (Foster, Goodman, Osiakwan, & Bernstein, 2004; Mbarika et al., 2005; Sohail & Shanmugham, 2003).

This study extends the discourse on e-payment in developing countries from adoption and diffusion challenges to initiatives for their introduction or transfers from the developed world and possible institutional effects. The findings suggest that normative use of e-payment for e-commerce in the developed world, normative use of traditional cash for e-commerce in the developing world and the growing normative use of Internet and mobile technology in the developing world are some of the key institutional enablers. The findings also reveal developing-country entrepreneurs’ cognitive awareness of e-payment success in the developed world and the opportunity for their transfer as institutional enablers.

However, the findings also reveal a lack of clear regulatory frameworks and undue bureaucratic delays in licensing processes in public-sector institutions as key regulatory and normative institutional constraints that may hamper e-payment innovations in the developing world. Regulatory frameworks for e-payment are necessary in every economy (Baddeley, 2004; Briggs & Brooks, 2011; Greenspan, 1996) in order to check fraud and increase public trust (Baddeley, 2004). Also, the developing world’s association with high risk of cyber fraud and distrust (Adelaye, 2008) calls for e-payment regulations (Baddeley, 2004). However, in doing so, it is important that governments provide clear regulations and streamline licensing processes so that legal frameworks enable rather than constrain e-commerce innovations (Ferran & Salim, 2005). Moreover, given the importance of e-payment systems for e-commerce and their limited availability in the developing world (Okoli et al., 2010), clear regulations and processes are needed to promote the innovation locally. Developing-country governments are, therefore, advised to tailor regulations and licensing processes to promote an e-cash society (Baddeley, 2004).

The findings of this study also suggest the need for developing-country e-business entrepreneurs to move beyond their cognitive assumptions that innovations can be easily transferred from the developed world without the need for adaptation. As the experiences of ePayGhana show, the entrepreneur’s cognitive failure to appreciate regulatory and normative institutional differences between the two worlds equally constrained the e-payment initiative. Therefore, developing-country e-business entrepreneurs need to understand and account for the local institutional environment when transferring innovations from the developed world (Avgerou, 2008; Bada, 2002; Heeks, 2002; Walsham & Sahay, 2006).

In sum, this study suggests the need for developing-country researchers, governments and service providers to move beyond e-payment challenges at the adoption and diffusion phase to tackle issues with initiatives to deploy e-payment models locally or adapt successful ones from the developing world to fit the local institutional context. Such moves may ensure the availability of e-payment systems to support e-commerce and e-business in the developing world.

7. Conclusion

This study investigated e-payment entrepreneurship and institutional effects in the developing-country context of Ghana. The study identified e-payment use in the developed world, traditional
cash culture and growing Internet and mobile technology culture in the developing country as normative institutional enablers. The entrepreneur’s awareness of these factors emerged as a cognitive institutional enabler. However, unclear regulatory framework and bureaucratic licensing processes of the Central Bank were identified as regulative and normative institutional constraints while the entrepreneur’s unawareness of and failure to consider contextual differences between the developed and the developing world became a cognitive institutional constraint.

The originality of the study stems from it being the first attempt to investigate e-payment entrepreneurship and institutional effects in a developing-country context. This paper makes contributions to both research and practice. For practice, it provides rich insight into institutional effects on e-payment technology transfers which are relevant to other developing countries. Entrepreneurs can draw on the knowledge to transfer e-payment innovations from the developed world. From a theoretical perspective, the paper demonstrates the applicability of the new institutional theory to study developing-country environmental effects on e-business innovation transfers. It argues that developing-country e-business researchers can draw on the new institutional theory to explain contextual effects on technology transfers as well as contribute to relevant policies.

The study offers implications for research, practice and policy. For research, the study suggests that to understand environmental impacts on innovation transfer, e-business research in developing countries needs to move beyond adoption and diffusion studies and embrace multi-level social theories such as institutionalism to highlight contextual impacts on local innovation initiatives. For practice, the findings suggest that entrepreneurs aiming to transfer innovations from the developed world, especially for regulated services such as e-payment, e-banking, e-health and e-education, may need to move beyond the technology to consider local institutional factors and their potential impacts. For policy, the study calls on developing-country governments to promote clear regulatory frameworks and streamline licensing process to encourage e-payment innovations.

The limitation of the study stems from its focus on a single case study in one developing country. Moreover, the author’s choice of the new institutional theory as a lens forced the study to focus on regulative, normative and cognitive factors to the neglect of other factors in the findings that could provide interesting discussions. Nonetheless, the findings offer insight into e-payment entrepreneurship initiatives in a developing country and institutional impact on the process and the outcome. Future research can benefit from exploring institutional impacts on innovative attempts in other regulated services such as e-banking, e-education and e-health and developing relevant theories, models and frameworks.

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