Exploring the Digital Divide:
Institutional Foundations for Electronic Commerce

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Abstract

Electronic commerce, by providing economic incentives for Internet use, could be a key to addressing the growing developed/developing country 'digital divide.' Developing countries' potential to reap the benefits of e-commerce will be partially determined by their institutional environment. Certainly, institutions that create barriers to traditional commerce will influence the potential of electronic commerce as well. Although expectations of these difficulties abound, little is known specifically about which institutions present the greatest problems and how they can be resolved. This research contributes to this knowledge through an exploration of the functioning of traditional commercial institutions in two cities: Dar es Salaam, Tanzania and San Diego, USA. By comparing a limited set of traditional commercial institutions relevant for business-to-business (B2B) e-commerce among small firms, institutions that pose the greatest problems can be identified. This results in a focused set of recommendations for policy makers concerned with facilitating e-commerce in Dar es Salaam and similar developing country environments. Furthermore, examining the differences in the potential for e-commerce between the two cities permits a realistic assessment of the potential for e-commerce to bridge the 'digital divide.'

1. Introduction

The last decade has witnessed a rapid expansion of the Internet, which serves as the base for the ongoing transformation to a global knowledge-based economy. As nations adjust to this new economic structure, awareness is rising of the challenges this transformation creates for developing countries, potentially increasing the already existing 'digital divide.' Electronic commerce, which provides an economic
incentive for automation and Internet use, could present an important bridge for this divide. There are, however, a number of factors that will influence the ability of e-commerce to serve as this bridge.

Given the well-known limitations of developing country telecommunications networks, business-to-business e-commerce is the most likely form to develop in these environments. This particular form of e-commerce is expected to be especially influenced by traditional commercial institutions. Thus, to appreciate what is required of e-commerce to serve as this bridge, a better understanding of the aspects of traditional commerce relevant for e-commerce is necessary.

1.1 Institutions, Economic Development and E-commerce

Institutions are a key component of the traditional commercial environment and are likely to have consequences for e-commerce as well. They are defined as the humanly derived constraints that shape human interaction [1]. They have also been compared to the rules of the game in sports, particularly in that there are written codes of conduct as well as unwritten norms for behavior. By making human interaction more stable and predictable, institutions reduce uncertainty.

In commercial exchange institutions create market conditions, such as the variety of products in the market, who may enter and exit, and how prices will be determined. These institutions are both formal and informal where formal institutions are typically codified and knowledge about informal institutions is culturally transmitted. Research has shown informal institutions often have the strongest impact [2, 3]. Institutions also exist at different levels, be it national, industry, or individual and the different levels and types (formal/informal) interact with one another. For example, national and industry-level regulations (institutions) may affect the terms of a bilateral contract, which is also an institution.

The meaning of the word 'institution' is obscured by common reference to organizations such as schools and hospitals as institutions. Here the two are differentiated, and organizations are defined as groups of individuals who share a common purpose. The output of organizations ranges from commodities (firms) and statutes (legislatures) to religious services (churches), and thus important distinctions can be made between the players and the rules (institutions) by which they play [4]. Organizations are formed as a function of the general institutional environment within society and then organizations can act to change the institutions [1]. Thus, the institutional environment will affect the types of economic organizations, both in traditional and electronic commerce, that can be formed.

Although the positive role of institutions is to reduce uncertainty and provide incentives for fair and efficient exchange, this is not always the result. Even in the most productive economies the incentives created by institutions can vary and one can find institutions rewarding productive economic activity as well as make-work and crime [1].
In the past decade greater attention has been paid to the role institutions play in the process of economic development. Programs that were once focused solely on macroeconomic restructuring now include reform of public institutions as one of their primary targets [5]. Institutions shape the incentives of public policy makers and when they are weak misguided resource allocation, excessive government intervention, weak regulation, arbitrariness, and corruption result. These results, in turn, deter private investment and slow growth and poverty reduction [6]. Improvements in the institutional environment, particularly in the areas of transparency, objectivity, predictability and legitimacy, are expected to lower transaction costs, increase contracting efficiencies and lengthen time horizons.

The trend toward focusing greater attention on institutions in economic development has occurred simultaneously with the increasing economic importance of e-commerce. The proposed benefits of the Internet and e-commerce vary widely. Possible reductions in transaction costs are expected to stimulate competition, both domestically and internationally, resulting in greater diversity, better quality, and lower prices [7]. For developing country firms faced with comparatively high costs for communication and travel these benefits could be substantial. Electronic commerce is also helping create new economic sectors [8], which can be of vital importance to emerging economies that are in the process of shifting their economic development priorities from the agricultural to the services sector [9]. Furthermore, the Internet also offers opportunities for market expansion and developing country firms may increase access to clients across the globe [10].

To reap these economic benefits of e-commerce a variety of challenges must be met. Naturally, poor telecommunications and transport infrastructure are the primary hurdles to e-commerce, however beyond that a myriad of challenges exist. For example, the lack of electronic payment systems and the inability to use credit cards for transactions involving foreign currency are two ways banking systems can inhibit e-commerce growth [9]. Furthermore, lack of experience, particularly with corporate data networks, and the need for skilled employees could hinder the ability of developing country firms to take advantage of e-commerce [11, 12]. Economy-wide factors such as tight regulation, rigid labor and product markets and inefficient capital markets, may limit the benefits of e-commerce [13].

This discussion demonstrates both the wide ranging potential benefits of e-commerce as well as the significant number of potential barriers to achieving them. It is difficult to assess the attainable benefits without a more clear understanding of which problems pose the most significant challenge. Given the significance of institutions in traditional commerce, it is likely they will play a similar role in e-commerce.

Thus, this research seeks to clarify the following question: How do institutions shape the potential for electronic commerce in developing countries? To explore the nature of the influence of institutions a comparative approach is employed. Evidence gathered from case studies in the U.S. and Tanzania is used to examine
the relationship between institutions and e-commerce. These two cities represent very different institutional environments as well as some of the most and least promising environments for e-commerce. The investigation focuses on institutions that are significant in the commercial environment for business-to-business transactions in small-to-medium sized enterprises (SMEs). SMEs are especially affected by the institutions as they lack the power to shape the commercial environment to suit their needs.

In the following sections institutions of first Dar es Salaam and then San Diego are discussed. Subsequently, the institutional environments are compared with the implications for e-commerce presented. Finally, conclusions are drawn about the role of institutions in shaping the potential for e-commerce.

Electronic Commerce and the Institutional Environment

To explore the role of institutions in shaping the potential for e-commerce in developing countries, a limited set of institutions are examined. Given the role of institutions in traditional economic development, the focus here is limited to those institutions that are fundamental for both traditional and electronic commerce. The institutions examined here include the courts, payment systems, credit, taxation, and general business organizations.

2.1 Dar es Salaam

Dar es Salaam is a bustling East African city that serves as the capital of Tanzania. Since the mid 1980's the country has been engaged with economic restructuring from a socialist toward a more open, market-oriented economy. In recent years this transformation has brought about the privatization of large parastatals and a greater reliance on small new entrepreneurial firms. This change in the structure of the economy has required changes in a number of institutions.

One of the most fundamental elements of any commercial institutional environment is the legal system. Theoretically, the uncertainties of commerce in a market economy are partially reduced by verbal and written contracts, enforced through the courts. In Dar es Salaam courts are hampered by understaffing and corruption. The lack of staff creates delays, while corruption adds to court expenses. To

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1 Evidence was gathered from in-depth interviews and secondary sources. In Tanzania a total of 25 interviews were conducted, 12 with government officials, banks, telecom operators and ISPs, and 13 with small firms. In San Diego a total of 22 interviews were held, 3 with business leaders, and 19 with small firms.

address these problems a special commercial court was established in 1999, with higher salaries and dedicated staff. Further reforms include the establishment of alternative dispute resolution mechanisms. Despite these attempts to streamline the legal process, small firms generally continue to regard court as a waste of time and money, particularly if the issue is related to payment.

The commercial institutional environment can also be described by the systems for payments and banking. Receiving payment is a widespread problem in Dar es Salaam, and Tanzania in general, and hence, a well-accepted culture of prepayment has evolved. Services such as electricity, mobile telephones, and even Internet access are all offered on a pre-paid basis. In inter-firm commerce when payment issues arise firms are loath to resolve disputes in court due to the difficulty in eventually receiving payment as well as cultural norms opposed to such efforts. Generally firms are willing to be patient in receiving payment and many stated that ‘at the end of the day they will pay.’

The payment problem at times extends beyond the country’s borders and can be out of the control of individual firms. Previously, in response to a foreign exchange crisis the Central Bank intervened in the operation of local banks and took control of all remittances of foreign exchange. As a result Tanzanian banks were unable to honor their letters of credit, with the blame for non-payment eventually falling on Tanzanian firms. This has resulted in stronger pressure for Tanzanian importers to prepay in full, which puts them at a competitive disadvantage as firms in other circumstances may be offered the goods with partial payment or on credit. The risks faced by Tanzanian firms are also increased as prepaid goods may not be received.

The payment situation is exacerbated by (or perhaps the cause of) a severe lack of credit. Limited availability of credit is endemic in developing countries, however in Tanzania it seems to be present at an even higher level\(^3\). For a variety of reasons, ranging from the inability of banks to cooperate, the lack of verifiable credit information, or simply distrust of their clients\(^4\), Tanzanian banks do not offer credit cards. It should be noted, however, that the development of the banking sector has been plagued by bank failures since the market was liberalized in 1992.\(^5\)

\(^3\) A lack of access to credit is not just a problem for SMEs. In Tanzania and Zambia, where a six month loan is considered long term, even large firms find the terms undesirable [15].

\(^4\) This is not only the perception of the banks. In his speech introducing the government’s budget to the National Assembly, the Finance Minister stated “There is a serious problem of many borrowers not being creditworthy as they do not repay loans at the appropriate time. I request the Honourable Members of Parliament to assist in the task of educating the public on the importance of repaying loans.” (Hon. Daniel N. Yona (MP), (1999) Tanzania Budget Speech 1999/2000, given by Finance Minister, Hon. Daniel N. Yona (MP), to the National Assembly of Tanzania, June 10th, 1999, p. 7)

\(^5\) For example, in September 1998 the Bank of Tanzania was forced to take over the Trust Bank subsidiary after 200 depositors in panic besieged the bank. See [16, 17]
Payment can also be characterized by the variety of instruments used to complete the task. For payment, Tanzanians often choose to use cash over checks or bank transfers. Banks are slow to clear checks, which can take between 3 and 28 days. Furthermore, checks and (for the few with) credits cards are not widely accepted, thus people have not developed the habit of using them. Although banks do have policies to discourage check bouncing, businesses feel they incur all the risk of accepting checks. Although not frequently used, firms also continue to use barter, which has worked its way into e-commerce. Several of the ISPs have agreed to post advertisements on their Web sites in exchange for free services from clients. Thus, barter provides a means for cash-poor companies to enter e-commerce.

Taxation in Tanzania is the responsibility of the newly formed Tanzanian Revenue Authority (TRA). For many of the firms interviewed compliance with tax rules is a constant source of frustration. Firms complain less about tax rates than about the number of different taxes they must pay. Furthermore, they complain the tax code is applied inconsistently, with fines being applied for non-payment of taxes not previously collected.

Customs is a second form of taxation and the customs authority in Tanzania is part of the TRA. Recent reform of customs duties has resulted in a simplified five-tier structure with a simple average of applied import duties of 16.2%. The WTO also notes that the Government of Tanzania relies heavily on revenues from tariffs and valued-added tax (VAT) and that consequently there is pressure to maintain revenues through high tariff levels. Despite this pressure the duty on computers was recently drastically reduced to help bring more computers into the economy at lower prices.

In addition to the legal structure, banking and payments and taxes, the commercial institutional environment consists of commercial and industry organizations.

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6 The Bank of Tanzania estimates that only 40% of business transactions are handled through the banking system.

7 This is a complaint in many African nations. As Rauth (1997) reports “Although taxes have been simplified and lowered, they remain numerous, ambiguous and complex. In business Tanzania, officials at one prominent organisation estimate that 80% of all businesses must cheat to survive - and tax liabilities can represent as much as 60% of gross revenue.”

8 The Tanzanian government had extremely restrictive policies toward the import of computers from 1974 through 1993. When the ban was lifted in June 1993, it was soon followed by an increase in the duty and sales tax on computers from 50% to 56%. By 1995 the duty had been reduced to 20% for computer hardware, a typical rate for East Africa, but not compared with duties of 4% in the EU, and mostly between 5-10% in Latin America. And finally, in the 1999/2000 it was proposed that duty on computers be reduced from 20% to 5%. See in order Shila, Howard “Case Study: Effectiveness of Informatics Policy Instruments in Tanzania” at http://www.bellanet.org/partners/aisi/policy/infopol/tanzania.htm#6.2; U.S. Dept. of Commerce, 1995, “Tariffs and Other Taxes on Computer Hardware and Software Worldwide” at http://www.tradeport.org/ts/ntdb/exprest/tartax.html; and Hon. Daniel N. Yona (MP), (1999) Tanzania Budget Speech 1999/2000, given by Finance Minister, Hon. Daniel N. Yona (MP), to the National Assembly of Tanzania, June 10th, 1999.
Common to almost all economies, commercial organizations include Chambers of Commerce, Rotary Club, and the World Trade Center, for example. In Dar es Salaam these general business organizations are weak.

The weakness of these organizations is partially due to Tanzania's socialist past in which previously active industry organizations all but disappeared [19]. It is also partially due to historical animosities between Asians and indigenous Tanzanians in the commercial sector. Although these animosities have subsided in recent years [20], in the early 90's it led to a split in the business community, which in turn segmented the voice of commerce into two groups, one for larger manufacturers and another for smaller organizations\(^9\).

As a representative for smaller firms, TCCIA is relatively young, formed in 1988, and is seeking to establish value for their membership. The need to establish this value is indicated by the significant difference in the number of members and the number of members who actually pay their dues\(^10\). Other international organizations such as the Rotary Club, which have a strong presence in other East African countries, are less significant in Tanzania\(^11\).

In this section the general commercial institutional environment of Dar es Salaam has been presented. Positive developments include the restructuring of the court system while remaining problems include the overall court system, availability of credit, diversity of payment instruments, and taxation. These developments will have implications for the potential of e-commerce. In the next section the institutional environment of San Diego is examined, and is followed by a comparison of the two institutional environments.

### 2.2 San Diego

The economy of San Diego has traditionally been tied to its large military bases, however during the past decade the city was forced to restructure. In the early 1990's the city experienced a recession, which reached its bottom in 1993. Since then the city has used its highly trained workforce to create a high-tech economy focusing on telecommunications, electronics, computers, software and biotechnology. The economy also benefited from the North American Free Trade Agreement (NAFTA) which brought a more than 6% increase in the value of exports compared with the overall economy. The economy was also able to grow due to its high concentration of small businesses which accounted for roughly half of job growth between 1991 and 2000.

\(^9\) This also results in different agendas when dealing with the government. The TCI, as an industrial representative, is more active in lobbying the government for protectionist policies [19].

\(^10\) One explanation for the low level of dues payment is the involvement of donors in the operations of TCCIA. See [20], p.388.

Firms in San Diego have a variety of court mechanisms available for resolving disputes. The choice of courts for filing claims is determined by the amount of money involved and whether or not attorneys are present. Examining only the initial entry costs, the differences between these forums can be seen in Table 2.2.1.\textsuperscript{12} In addition to these court options mediation is also available. It has been speculated that small firms are less enthusiastic about mediation, and one reason may be they confuse it with arbitration.\textsuperscript{13} Beyond speculation, however, San Diegan mediators have been unable to explain why large firms have adopted mediation more enthusiastically than small firms have. Despite the low cost and range of court services small firms report that court is still not a viable means for resolving payment disputes.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
Type of Court & Court Fee for Initial Filing \\
\hline
Small Claims & $20 \\
Limited Civil (< $10,000) & $89 \\
Limited Civil (> $10,000) & $96 \\
General Civil & $191 \\
\hline
\end{tabular}
\caption{Court Filing Fees in San Diego}
\end{table}

The commercial environment in San Diego can also be characterized by its banking sector and frequently used payment mechanisms. The U.S. banking system is rare in that its regulation occurs simultaneously at both the state and federal levels. Examples of entities overseeing banking activities include the Federal Reserve, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation (FDIC). The FDIC was formed in the 1930s to re-establish the confidence in the banking system that was destroyed during the Depression. Although banks can be chartered at either the state or federal level, all banks must carry FDIC coverage, which typically covers deposits up to $100,000 [22].

The FDIC is just one element of the banking system designed to foster confidence. Other factors identified as fostering confidence include 1) ready access to cash and other funds, typically secured by the Federal Reserve Bank, 2) secure bank records, 3) competent government supervision of the sector and 4) deposit insurance that is in place and inviolate[23]. These mechanisms appear to be working, as confidence in the banking sector, despite its turbulence, remains high.

\textsuperscript{12} http://www.sandiego.courts.ca.gov/superior/online/feesched.html (viewed July 7, 2000)

\textsuperscript{13}Arbitration involves a third party where the third party makes the decision. In binding arbitration the third party's solution is final. In mediation the third party's participation is limited to helping the two parties reach a settlement themselves. If no settlement can be reached the parties are free to go to court. See [21].
The turbulence over the last two decades has been quite remarkable. In the U.S. during the 1980’s, more than a thousand commercial banks, almost a thousand thrifts, and at least one thousand credit unions failed\(^\text{14}\). Although the number of failures in the late 90’s declined significantly, there were a few failures that combined cost the FDIC over a billion dollars. California did not escape this trend and as figure 2.2.1 demonstrates, California bank failures increased in the mid 80s and reached their highest level in 1995. Although San Diego was not immune to these failures, it was not alone among large California cities experiencing failures. But along with the upturn in the economy the majority of San Diego banks have recovered and even the weakest among them appear to be doing well in the late 90s.

\[\text{Figure 1: California and San Diego Bank Failures}\]

As with most American cities, the city of San Diego tries to attract businesses by making financing available. To address the financial needs of local businesses the city issues industrial development bonds and makes loans. Through a private non-profit organization partially supported with city funds, direct loans from $300 to $25,000 are made available for micro and small enterprises. The city also acts as a coordinator to address access to capital gaps impeding economic development. They also work with banks to provide expanded credit and banking services access for low-income communities and small and minority owned businesses\(^\text{15}\).


\(^{15}\text{http://www.sannet.gov/economic-development/business-assistance/finance/}\)
San Diego firms and consumers have access to a wide variety of payment mechanisms, although cash is still the most favored payment mechanism of American consumers. Table 2.2.2 shows this preference for cash, although the value of cash payments accounts for less than 20% of the value of total consumer transactions on a monthly basis. The use of credit cards by Americans is well known, with 66.5% of American households having a credit card by 1995[24]. Despite their love of the credit card, Americans still make a relatively large percentage of payments with checks. To change this habit the federal government has initiated the ‘Electronic Commerce for Buyers and Sellers’ program. Through this initiative the government plans to use e-commerce payment techniques, including bank transfers, with people who interact with the government16. It has long been recognized that such a high-level well-coordinated program would be necessary to break the habit of check-use.

<table>
<thead>
<tr>
<th>Preferred Forms of Payment by Consumers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash</td>
</tr>
<tr>
<td>3rd Party Credit Cards (i.e., VISA)</td>
</tr>
<tr>
<td>Check</td>
</tr>
<tr>
<td>Store Credit Cards</td>
</tr>
<tr>
<td>Debit Cards</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

*Percentages do not add up due to the format of the questions.

**Table 2: Consumer Payment Mechanisms**

The commercial environment in San Diego can also be characterized by its taxation processes. Regarding taxation the California State government asserts: “California is very conscious of the need to maintain a stable, predictable tax structure, one that enhances the competitiveness of our state's major industries.” 17 Businesses in San Diego pay their business tax in the form of the licensing fee which is priced based on the number of employees and takes about two weeks to process. If a business is incorporated it is also subject to the state corporation income tax, which is 8.84%. San Diego businesses may also be subject to property taxes as well.

A second form of tax that affects San Diego firms is customs duties. The U.S. generally favors free trade with most imports entering the country duty free or subject to very low tariffs. Zero tariffs apply to nearly one third of national tariff lines and the simple average tariff rate for Most Favored Nations (MFN) declined

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17 http://commerce.ca.gov/business/investgd/investgd10.html
from 6.4% in 1996 to 5.7% in 1999. Tariffs have also been reduced due to NAFTA and the General System of Preferences available to most developing country imports\(^\text{18}\).

As a relatively large American city, San Diego is home to a wide variety of business organizations. The city hosts a regional Chamber of Commerce, founded in the late 1800's, as well as smaller local chambers. There is also a World Trade Center, with roughly 1,000 members, that works in cooperation with the Chamber. Other more general business organizations such as the Rotary Club and the Lion’s Club, founded in 1911 and 1921 respectively, are also present\(^\text{19}\). With nearly 100 years of history in all of these organizations, they have been able to make significant contributions to the business community and the community as a whole.

In this section the general commercial institutional environment of San Diego has been presented. San Diego’s commercial environment is robust with courts, financing, and government assistance readily available. Taxation is comparable to other U.S. cities and the reductions in duties due to NAFTA have increased trade across the border. The rich history of business organizations helps to create a climate where firms are actively involved with the community.

2.3 Institutional Differences and Electronic Commerce Potential

Institutions are important for electronic commerce because they create an environment conducive to commerce in general. Through consistent enforcement they reduce uncertainty. Furthermore, institutions facilitate the conditions required for e-commerce, only one of which is access to capital. In the following paragraphs the commercial institutions presented above are compared and the implications for e-commerce identified. The focus of the discussion is to identify the crucial institutions for fostering the use of e-commerce in developing countries, particularly business-to-business electronic commerce for small firms.

In the literature it has been suggested that for e-commerce to grow in developing countries legal reforms to ensure contract enforcement are necessary. Both Dar es Salaam and San Diego are in the process of transforming their court systems toward greater reliance on alternative dispute resolution processes. However, despite these attempts to improve the functioning of the courts, and what are in San Diego very low court fees, small firms continue to see court use as too costly. This may be due to the fact that in both places a favorable judgement still does not guarantee

\(^{18}\) It should be noted that the lower tariffs on developing country imports are biased against processed goods as opposed to unprocessed commodities. Agricultural and food products as well as textiles, clothing and footwear face tariffs that are sometimes as much as three times the overall MFN average tariff. (WTO, 1999).

\(^{19}\) http://www.oldmissionrotary.org/ (approx. 75 members) Rotary district 5340 represents the San Diego area and includes over 50 clubs. http://lions.inreach.com/sandiego-host/ http://lions.inreach.com/4L6/ San Diego is in Lion’s district 4L6 and consists of 56 clubs.
payment. Instead, small firms typically rely on informal enforcement mechanisms for contract enforcement. In Dar es Salaam the simple requirement of pre-payment is one way the payment issue has been resolved.

Thus, although legal structures that ensure contract enforcement are important for electronic commerce in general, it is likely that for business-to-business transactions between small firms, who appear to be less inclined to use courts in general, e-commerce can occur without such a system. Small firms will simply continue to rely on informal mechanisms, one of which is likely to be prepayment. However, in pre-payment the risk is shifted and hence firms may need to develop different risk assessment skills.

The potential for electronic commerce will also be affected by a country's payment mechanisms. The evidence presented above clearly demonstrates that comparatively the Tanzanian payment system is weak compared to that of the U.S. Not being able to obtain a credit card, the main payment mechanism for e-commerce, and the need to use bank checks create disincentives for the use of e-commerce in small firms in Tanzania.

Not only do forms of payment differ, but so do the terms of payment. These differences reflect the contrast in commercial cultures in the two cities. The timeliness of payment in and of itself may have few implications for e-commerce. Though, many of the recommendations for e-commerce in developing countries are geared toward increasing exports, in which case cultural differences over the timing of payment may be a problem. For local e-commerce, however, issues such as the timeliness of payments, which are accepted in the local context, present few, if any, problems. The difficulties that Tanzanian firms have with payment may actually serve them well in e-commerce. When trading beyond their inter-organizational networks firms seem perfectly comfortable and willing to demand pre-payment as this is their normal mode of business.

This leads us to consider the differences in the role of banks and the availability of credit. In both cities the banking sector has faced turbulence in the past decade. However, in San Diego from the clients’ perspective these fluctuations have been barely noticeable. The difference is due to the extensive institutional safety net that exists in the U.S. Having had quite a number of years to develop, banking regulations operate smoothly and avoid problems such as a ‘run on the bank’ when banks fail. No direct evidence is available that shows that bank failures in Tanzania are responsible for the lack of credit cards, however the effort that must be expended by regulators resolving issues when banks fail could possibly be better used in other ways.

One such way is acting as a coordinator. In San Diego the city government worked closely with the banks to monitor the availability of credit for small firms. Although it is unlikely the local government in Dar es Salaam would be able to issue bonds to make loans available to small firms, the role adopted by the San Diego city government in the banking sector is a model. This interaction between the government sector and the banking sector is necessary. As the electronic
payment program instituted by the U.S. federal government demonstrates, sometimes the coordinating role of the government is necessary. Perhaps a more proactive role as coordinator by the Tanzanian government would help the banking sector make loans and credit cards available. Although these issues are certainly not limited to e-commerce, they will help make the funds necessary for e-commerce investments available.

Institutions are meant to create expectations and hence certainty, which is greatly facilitated by consistent enforcement. One of the areas with the greatest difference in consistency of enforcement between San Diego and Dar es Salaam is in tax collection. Part of the problem is precisely the TRA's attempt to create consistent enforcement. However, whenever institutional change occurs the uncertainty increases. This is a necessary but unfortunate side effect of institutional change. A second aspect of taxation with implications for e-commerce is the duty on computers. The history of computer imports in Tanzania, starting with outright restrictions, changing to high duties, and finally to lower duties, is just one indicator of the immense differences that exist between the environment for e-commerce in San Diego and Dar es Salaam. It is difficult to assess what implications this will have for e-commerce in the long run and if this time delay in having access to computers is something that can be overcome.

The last element of the institutional environment covered here is the state of local business organizations. These organizations can act as a mechanism for educating firms about e-commerce as well as lobbying government for reforms that create an environment more conducive to e-commerce. In San Diego the general business organizations hold seminars about e-commerce and are implementing e-commerce in providing services to their clients. In Dar es Salaam these groups are just beginning to plan for such services. The history of the organizations in the two places demonstrates how the political climate affects their development. In Tanzania political changes disrupted their development, while in the U.S. political continuity helped establish these organizations as a central presence in the commercial environment. Naturally, political change is sometimes necessary however it does have its implications for institutional development.

3. Conclusions

Figure 2: Institutions as the Foundation
This investigation seeks to support the concept that institutions serve as the foundation for electronic commerce, as shown by the dashed line in Figure 3.1. As the focus of development programs has shifted to include institution building as a key component to economic development, and the potential role of e-commerce in economic development has been raised, further exploration of the role of institutions for electronic commerce is needed.

Comparing a limited segment of the institutional environment of Dar es Salaam with that of San Diego, this research seeks to identify which aspects have the greatest implications for e-commerce, particularly from the perspective of the small firm. Institutions considered here include legal enforcement of contracts, payment systems and norms, availability of credit, taxation, and general business organizations. The research found that although important for e-commerce in general, legal contract protections are of only limited significance to the use of e-commerce in small firms in Dar es Salaam. Of greater importance are payment systems, credit and taxation. Furthermore, the restricted history of general business organizations limits their role as educators and lobbyists for e-commerce.

This research has shed light on the limitations for e-commerce in developing countries, particularly the participation of small firms in business-to-business electronic commerce. Most important to small firms are access to credit cards and financing, as well as consistent enforcement in the area of taxation. Naturally, developments in these sectors will help firms in both traditional and electronic commerce. If electronic commerce is to succeed, however, these are the sectors that require greater attention.

Comparing the institutional environment in San Diego and Dar es Salaam, the participation of the government as a coordinator of private sector activities, particularly in banking and payments, is clearly a necessary element. Recent liberalization should not dissuade governments from acting as a coordinator in a competitive market. Acting as coordinator is also a more feasible goal for poor governments. Unlike overhauling the legal system, coordinating private sector efforts is less expansive but also less expensive.

In addition to highlighting this role for governments, this research has exposed the importance of time in institutional development. Clearly the long history of banking regulation and business organization growth in San Diego has contributed to creating a stable commercial environment that is conducive to electronic commerce. Political changes greatly affected the development of market institutions in Dar es Salaam. And still as the strength of these institutions grows, it will take time for the uncertainty-reducing benefits to develop.

This last point has significance for our consideration of the digital divide. If institutional development is the key to greater economic growth and is a key factor in creating an environment conducive to electronic commerce, but it takes time, then bridging the digital divide will be a difficult task. Further research is clearly needed on ways to speed institutional development and the uncertainty reducing
mechanisms it creates. Certainly enhanced information flows created using the Internet could be one way to stimulate this process.

References


