

E-Readiness in Developing Countries
"A Descriptive Case Study on Banking Sector of Pakistan"

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Abstract
The study was contributed in understanding the E-Readiness in banking sector of Pakistan taking into consideration important aspects which would be helpful for the banks. It unfolds the factors to adopt the E-Commerce in Asian countries specially Pakistan. Major decision makers in the field of banking sector will be able to receive knowledge directly to make better market-related decisions. It will also help companies to develop market strategies in order to adapt to the phenomenon of E-Commerce. Defining how to measure the overall readiness in terms of technological resources to adapt to E-Commerce was a major challenge. That was overcome by identifying critical IT resources required to adapt to Ecommerce. The analysis by using different statistical techniques gave mixed results. The studies done for banks have been very focused only on three factors namely capacity, opportunity and access. These factors are a combination of internal and external environmental factors with a larger emphasis on external environmental factors of an organization, but do not focus much on the organization itself in-terms of E-Readiness. The sample was selected on the basis of quota sampling and the banks in each quota were selected randomly. A questionnaire was designed and self-administered to IT professionals working in the sample organizations. The questionnaire was based on the variables identified for probing. The result shows that 100% of the responding banks have a website as well as a CIS. By virtue of the research conducted it can be said that all what is needed then is to connect the CIS to the website to provide real-time online information which would be the platform to provide complete E-Commerce functionality. From this we can postulate that a firm having both the above mentioned capabilities is definitely at the highest stage of E-Readiness.
Keywords: Banking, E-Readiness, Pakistan, E-Commerce

Introduction
Pakistan is one of the leading developing countries. Due to this they are trying to adapt to new standards and technologies. E-Commerce is a growing area and most of the businesses due to their service orientation are more inclined to adapt to E-Commerce. As a result there is a constant effort being done by the service oriented organizations to implement E-Commerce. In this scenario it would be a good thing if we could know about the E-Readiness of our Banking Sector. There are some very big changes going on in the way the world does business. These changes are being driven by the availability of fast, powerful, and cheap computers, fast and cheap telecommunications, and the rise of global electronic networks, particularly the Internet. These technologies are driving the rapid growth of Electronic Commerce. In the next few years, E-Commerce will certainly impact in some way on your business, if it hasn't done so already.

E-Commerce brings with it many opportunities. It also poses some risks. Whole industries are being transformed beyond recognition. Some businesses will prosper, while others will perish. About the only thing that's certain is that you won't prosper by ignoring what's happening. The better you understand what is going on, the better you will be able to use it to benefit your business. E-Commerce is a growing area and most of the businesses due to their service orientation are more inclined to adapt to E-Commerce. As a result they will either pass on or demand that they should adapt E-Commerce in all business fields if they want to keep on getting business. In this scenario it would be a good thing if we could know about the E-Readiness of our Banking sector. Pakistan is one of the leading developing countries. Most of our banks are trying to adapt latest technology and standards of E-Commerce. Due to this Banks are more inclined to adapt E-Commerce.

1.2 Problem Statement
There have been different models developed to gauge the level of E-Readiness but most of the studies conducted have been focused on governments or at a national level as evident by the "E-readiness Rankings". ("E-Readiness", 2005)

A few studies have focused on developing perceptual frame works to gauge the level of E-Readiness in industries (Molla, 2004). A study based on the:

- Perceived Organizational E-Readiness factors (POER)
- Perceived External E-Readiness factors (PEER)

On the adoption of e-business among international trading firms in China has been conducted last year.
Out of all the service sectors, our banking sector is the leading and largest employer sector for Pakistan's economy. Most of the services are provided by the banks and they are in constant touch with international market to adapt the new technologies.

Now a day's competition is very strong between the banks. So banks are trying to provide more facilities for their customers or account holders to capture the market. In this scenario banks enhance their infrastructure, improve their product and are speedier in replying to inquiries. For this purpose the banks have to adapt to E-Commerce if they wants to survive and prosper in the competition and Information Era.

The researcher was interested in finding out the level of E-Readiness of the Banking Sector in Pakistan.

1.3 Research Question
RQ 1: What is the level of E-Readiness in banking sector of Pakistan?
RQ 2: Does the banking sector have enough technological resources to adopt E-Commerce.

1.4 Limitation
There are three primary limitations of this study.
1. Due to paucity of time and resources, research was conducted for only Pakistani Banks.
2. Data was collected from selected locally own banks and foreign own banks situated in Karachi only.

1.5 Scope of the Study
This study was contributed in understanding the E-Readiness of banking sector of Pakistan. It takes into consideration the following aspects which would be helpful for all banks. It unfolds the factors to adopt the E-Commerce in Pakistan. Major decision makers in the filed of banking sector will be able to receive knowledge directly to make better market-related decisions. It will also help companies to develop market strategies in order to adapt to the phenomenon of E-Commerce.

2.1 Review of Existing Literature
At the beginning of the 1990s, no one had heard of the Internet, apart from a few researchers and academics. Just ten years later, some 360 million people around the world have Internet access, and the number of Internet users continues to grow rapidly.

Five years ago, few people were thinking about electronic commerce, other than large companies that could afford to buy expensive proprietary systems. Electronic market places are being set up in a variety of industries. Lignus.co.nz ("E-Commerce:" 2000), for instance, is an Internet-based marketplace for trading timber and wood-based products. Job search sites like monster.co.nz ("A Guide for", 2000) are changing the face of recruitment.

The message is simple. E-commerce is big, it's global, it's growing rapidly, and it's here to stay.

2.2 E-Commerce
E-commerce means on-line trading, that is, buying and selling goods and services over electronic networks. Although e-commerce refers to all electronic transactions over any electronic network, today we tend to think of it as transactions carried out using the Internet.

Like the Internet, electronic commerce has in fact been around for a long time. Large corporations have been conducting electronic transactions via Electronic Data Interchange (or EDI) for years. The problem is that EDI is run on proprietary networks, and uses proprietary software. It is too expensive to be used by smaller businesses.

The Internet, on the other hand, is an open network. The software that makes the Internet work is in the public domain. Anyone can install it for free. The Internet Service Providers (ISPs) who sell you Internet access are often owned by large companies, which also own the telecommunications networks over which the Internet runs, but they don't own the Internet itself. No one does.

2.3 E-Business - Connecting the Inside with the Outside
As well as e-commerce, the experts also talk about e-business. The distinction between the two can be slippery. Using this distinction, "e-commerce" is about financial transactions, while "e-business" is about all business processes, from marketing and sales to information management and human resources.

Most businesses already use information technology (computers) to a greater or lesser degree in the management of their internal processes. Many businesses are now connecting to the Internet, and using Internet technologies to communicate and transact with external customers and suppliers, and to market their products on the Web. So there are internal systems, and an external network. Connect the internal systems to the external system, creating one integrated system, and you have e-business.

If you want a more technical definition: E-business merges the standards, simplicity, low cost, and connectivity of Internet technologies with traditional information technology and business processes to create new business value, enable new relationships, and build trust for an enterprise, its customers and its industry.That all sounds a bit abstract, so here are a few concrete examples of things a company thinking "e-business" might do: Use e-mail to place orders with suppliers or receive orders from business customers. Give customers access to order and invoice information electronically via a Web site. Replace paper-based systems (internal and external, e. g. purchase orders and invoices) with electronic documents. Share access to documents or other information on an internal network within the business (so that sales staff can get access to sales figures while they're on the road, using their lap-top computers, for instance). Enable the customer's computer system to "talk" directly (i.e. electronically) to the company's computer system obtain customs clearance electronically for incoming shipments of goods, and track courier consignments electronically (this can be done by the courier company itself or by its customers). As you can see, and as the case studies in this guide will demonstrate, outside of the textbooks e-commerce and e-business come in many shades. There are many levels of uptake, from the simple use of e-mail, to a fully e – commerce enabled web site that is completely integrated into your internal business systems, as well as those of your key customers and suppliers. The bottom line is that all organizations, not just large corporate, now have an opportunity to take advantage of world-wide networks.

2.4 The Value of E-Commerce for Business

Electronic commerce is about moving physical business processes to the electronic environment of the Internet. Instead of sending a fax or a letter, you send an e-mail, or access a Web site. By using electronic instead of physical means, these processes are faster and less susceptible to human error, reducing the cost of transactions and contributing significantly to business efficiency.

Other benefits of the electronic environment include:

- Potential for much greater collaboration and customization in design
- Lower inventory costs
- Faster production
- Lower supply costs.

Besides the simple reduction in costs through increased efficiency, other benefits are: The reach of the organization is increased, enabling it to interact with new and different ("non-traditional") suppliers or customers. Business relationships can change by connecting businesses that were not directly connected on the pre-internet supply chain. Businesses are better able to reach or combine markets across borders, making national borders less of a barrier.

It is easier to enter new export markets, making activities possible that cannot be supported by the local or national market (particularly beneficial for those SMEs located in low population areas and operating in niche markets). Time-zone differences can become an advantage and Managers can get a much better understanding of the real value drivers in the business.

2.5 The Internet

The Internet, on the other hand, is specifically designed to be multi-purpose. It is a platform over which you can run any application you want. Hence it can be used to send and receive photographs, spreadsheets, documentation, software, audio and video, reports, invoices, and orders. Indeed, if something can be turned into digital ones and zeros, the Internet can deliver it.

The big difference with Internet-based e-commerce is its flexibility and the potential to apply it to the whole business, not just the movement of money. This can have profound implications for how the business is run, and indeed can change the nature of the business itself.

2.6 The Power of Networks

To understand the power of the Internet it is necessary to understand the power of networks. Back in the days when the telephone had just been invented, telephones weren't very useful, because there weren't very many

people you could ring up. Now that almost every household has at least one phone, and many people also have a phone in their pocket, they are so useful that most of us regard them as essential. Telephones are a perfect illustration of Metcalfe's Law: the value of being connected to a network grows exponentially as the network grows, while the cost per user stays the same.

The power of the Internet comes from its size. A connection to the Internet in the year 2000 with 360 million users and access to 2 billion Web pages is much more valuable to the user, yet is much less expensive, than a connection to the Internet was in 1990 with less than a million users and no Web pages at all. The result is that the bigger the Internet grows, the more important it becomes. Already, having an e-mail address is as important as having a fax machine. Soon it will be just like having a telephone.

2.7 Types of E-Commerce

Increasingly, e-commerce is described in terms of relationships and processes. We have already noted the need for experts to differentiate between e-commerce and e-business. Other kinds of relationships need further definitions. Electronic buying and selling can be done between businesses (this is known as B2B for short) or between businesses and consumers (commonly called B2C or e-tailing). Governments and businesses also inter-relate a lot, and this is known as G2B (or B2G). And indeed consumers are transacting directly with other consumers, which is of course C2C.

Buying CDs from Amazon.com ("A Guide for", 2000) is known as dooBdoo (actually, we made that bit up). But seriously, buying books or CDs from Amazon.com is for lots of people the most familiar example of e-commerce of the B2C kind. Bio lab sells laboratory and scientific supplies to the Australasian market. They have implemented an electronic commerce system that enables customers to browse their database for product specifications, availability, and price.

Customers can create orders and send them via the internet. Bio lab can integrate the Bio lab direct system with customers' own purchasing systems. An example of B2G in New Zealand is registering a company on-line at the Companies Office Web site (www.companies.govt.nz)(“A Guide for", 2000). This facility has made the process much faster and greatly reduced the cost. C2C is an Internet-generated phenomenon.

Auction Web sites like the massive ebay.com in the United States and in New Zealand (www.trademe.co.nz) ("A Guide for", 2000) are enabling millions of individuals to sell goods and services to each other. Indeed in the United States some businesses are bypassing Web sites altogether and selling directly through EBay.

2.8 Timing and Scale

As with all business decisions, there will be an optimum time for your business to get into e-commerce based on an analysis of the costs involved and the benefits. Considerations of scale are crucial as well. The specific use you make of the Internet in your business will depend on the kind of business you have and what you want to achieve. Implementing a sophisticated integrated system may suit your business, but smart use of the Internet as a research, direct marketing, and communications tool can be very effective as well.

2.9 Levels of E-Commerce Implementation

2.9.1 Level 1: Using E-Mail

At much less than a cent per message, e-mail is quicker and far cheaper than using a fax machine (or post or courier services), and much more flexible. It gives you the facility to communicate and exchange material with suppliers, customers, partners, and colleagues. You can attach text or spreadsheet files such as orders, product specifications, quotes, costing, or promotional information. You can also attach photographs and even short sound and video clips.

Already over 60 per cent of small firms and 80 per cent of medium-sized firms are using e-mail, not to mention over a million individual New Zealanders, so even if you don't want to communicate with others via e-mail, they want to communicate with you.

It is surprising how many people forget to include alternative contact information in their e-mails. Always include a postal address, telephone numbers, and your Web site address (if you have one) so recipients can contact you by other means.

With e-mail you need to protect against viruses. You can't ignore the problem. A straight e-mail message is simply text, and cannot contain a virus. But attachments to e-mails *can* contain viruses. In particular, if you

receive an executable programmed as an attachment (a file ending in .exe) don't open it! Talk to your computer advisors about what to watch out for. They will also suggest anti-virus software and protocols to use. As a rule, you should always virus-check attachments to e-mails before opening them. You should always create a daily back-up copy of crucial business data, just in case.

2.9.2 Level 2: Using the Internet to Research Information

More than half of New Zealand's small and medium-sized businesses already use the Internet for research and information gathering. This might be for market intelligence (checking out what their competitors are doing), keeping up with industry news, doing some background research for a project, sourcing products and services, financial information, or identifying potential customers.

Although there is a huge amount of information on the Internet, don't be fooled into thinking everything is on-line. Most authoritative information is still in paper form, so don't forget about your local library. But you are most likely to find relevant information on-line if it is of recent origin.

As an example of how Internet research can work, a small surveying company wanted to find out about non-destructive testing techniques. A search of the Te Puna Web Directory for "non destructive testing" turned up the New Zealand Non Destructive Testing Association Web page (www.winzurf.co.nz/ndta/index.htm) ("A Guide for", 2000). It turned out that the person who ran the association and the surveying firms were situated less than 30-minutes drive from each other.

Web drive (www.webdrive.co.nz) is an innovative Web hosting company started by two guys in their early twenties. When asked who they had consulted to find out about their tax obligations, they answered, "Nobody. We just looked up the IRD Web site. (High praise indeed for www.ird.govt.nz) ("A Guide for", 2000)

2.9.3 Level 3: Ordering On-Line and Using On-Line Services

You may not have your own Web site, but you can still be an active user of e-commerce. Over 30 per cent of small and medium-sized businesses are ordering goods and services on-line, and a similar proportion use Internet banking services.

The range of goods and services that can be bought on-line is increasing daily. A good place to start might be ordering office supplies. Check whether your suppliers have e-commerce enabled Web sites, as it may be possible to start dealing with them electronically.

There is a growing range of other on-line services. Investors can benefit from share market information, news, and discussion on www.sharechat.co.nz ("A Guide for", 2000) or www.stockwatch.co.nz ("A Guide for", 2000). A number of share brokers also offer on-line share trading - great for doing those day trades during office hours. Try an on-line recruitment agency such as www.monster.co.nz ("E-Commerce:" 2000) or www.nzjobs.co.nz ("E-Commerce:" 2000) to find new staff.

2.9.4.1 Level 4.1: A "Brochure Ware" Web Site

Many people now expect companies to have one. They want to be able to check out your business and the products and services you offer from their office or home. More than half of small and medium-sized businesses and around 80 per cent of large business uses the Internet for information gathering. If you are not on-line, they won't find you. A business Web site that just contains information is typically called "brochure ware".

At its simplest it may only be three or four pages containing a company profile, some information about products and services, and contact information, including physical and postal addresses, telephone and fax numbers, and an e-mail address.

Make the contact information easy to find, preferably on the opening page. Many people now look up Web sites to find phone numbers, and it is surprising how many Web sites hide such information away or forget to include it at all. A brochure ware site such as this can be put up at minimal cost, and is low maintenance. But don't forget to update the site if any of the information changes. The makers of Zoodoo compost have a great brochure ware site at www.zoodoo.co.nz ("E-Commerce:" 2000) - simple, but effective.

2.9.4.2 Level 4.2: Web Site with On-Line Catalogue

You can upgrade your brochure ware site by adding an on-line catalogue, as Servo tech has done (www.servotech.co.nz) ("E-Commerce:" 2000). This is simply an on-line version of a paper-based catalogue.

The advantage is that you can keep the on-line catalogue up to date without having the expense of reprinting the whole thing. If the majority of your customers are businesses that purchase on credit using a purchase order number, then an on-line catalogue may be as much as you need.

2.9.4.3 Level 4.3: A Web Site with On-Line Ordering

You may decide that you want to add a "shopping cart" function to your site. Shopping Cart software allows your customers to compile and submit an order on-line. Products are selected and "placed" in a graphic of a shopping cart. When complete, the whole order is submitted, together with payment details, typically a credit card number. You can confirm that the order has been received via e-mail, while the order itself - along with payment - is fulfilled through established off-line procedures.

There is a range of shopping cart software available; including some excellent shareware programmers, so shopping cart functionality can be added without spending a fortune. There are Web design companies that can deliver sites for $2000 all up, with small catalogues and on-line ordering facilities which enable credit card details to be taken. However, a large site with high security will of course cost substantially more. Some of the larger Internet Service Providers like Xtra and Clear Net offer turnkey Web sites with this kind of functionality.

2.9.4.4 Level 4.4: A Transactional Web Site

A transactional Web site covers the whole process, from product or service selection, through ordering and confirmation of delivery arrangements, to real-time on-line credit card payment.

"Real-time credit card payments" mean that when the customer submits their credit card details, the transaction is passed through to the bank and authorized (or declined) immediately, just like an EFTPOS transaction. In effect you are integrating your Web site into the banking system. BNZ's Buyline (bnz.co.nz ("E-Commerce:" 2000) - look for the e-commerce link), and ASB Bank's Access On-line (www.asb.co.nz ("E-Commerce:" 2000).

These products can be bought directly, or may be available through your Internet Service Provider. They are relatively expensive solutions, though, and you will have to decide whether the orders you expect justify the cost. Mp3.net.nz ("E-Commerce:" 2000) is an example of a site with on-line real-time credit card payments. Mp3.net.nz sells New Zealand music in MP3 format, which can be downloaded and played on your computer or on an MP3 player. With this kind of digital product that is both bought and delivered via the Internet, real-time credit card payment is essential, because the customer expects to be able to download the goods immediately on submitting the order.

2.9.5 Level 5: The Fully Integrated E-Commerce Solution

Ultimately, IT can be integrated into all your business activities. This will have a significant impact on the efficiency of your business and its ability to compete. The following is a description of what an integrated e-commerce solution might mean. The internet is a communication tool that enables you to get your products to a wider range of customers, even globally. To make trading over the Internet and linking into the world of e-commerce easier you need to have a good core business system.

An ordering process is essential for B2B trading. This assumes that you have a product file with an up to date inventory on product that is available. Trading partners will want to be able to go to your product file to make enquiries (not unlike telephone banking, but using the Internet). You need to be able to generate an invoice and collect payment electronically. Purchasers of physical products will also want to know about shipping times. The order is often considered to be the heart of a business. Company activities that support the ordering process should be linked or integrated. Back-end processes need to be integrated with the front processes and then to the accounting systems. In an e-tailing situation, if the sales order system is linked to the inventory control system, an automated ordering system can be used to order new supplies - that is, when you run low on something, a new order is generated and dispatched automatically. The inventory control needs to be integrated to the product file. When these systems are in place the next move is to integrate the payment and the shipping information.

2.10 Readiness of E-Commerce

In simple terms E-Readiness is defined as the readiness of any organization, industry or economy of a country to adopt EC (Molla, 2004).

Table 1: Definition of Research Variables

	Variables	*Description*
Organizational E-Readiness	Commitment	Reflects enough energy and support for e-commerce from all corners of an organization and especially from the strategic apex. It refers to having a clear-cut e-commerce vision and strategy championed by top management, e-commerce leadership, and organization-wide support of e-commerce ideas and projects.
	Human Resources	Refers to the availability (accessibility) of employees with adequate experience and exposure to information and communications technology (ICT) and other skills (such as marketing, business strategy) that are needed to adequately staff e-commerce initiatives and projects.
	Technological Resources	Refers to the ICT base of an organization and assesses the extent of computerization, the flexibility of existing systems, and experience with network-based applications.
	Business Resources	This covers a wide range of capabilities and most of the intangible assets of an organization. It includes the openness of organizational communication, risk-taking behavior, existing business relationships, and funding to finance e-commerce projects.
	Governance	The strategic, tactical and operational model organizations in developing countries put in place to govern their business activities and e-commerce initiatives.
External E-Readiness	Government E-Readiness	Organizations' assessment of the preparation of the nation state in terms of government commitment and the legal infrastructure to promote, support, facilitate and regulate e-commerce and its various requirements.
	Market Forces E-Readiness	The assessment that an organization's business partners such as customers and suppliers allow electronic conduct of business.
	Supporting Industries E-Readiness	Refers to the assessment of the presence, development, service level and cost structure of support-giving institutions such as telecommunications, financial, trust enablers, and the IT industry, whose activities might affect the e-commerce initiatives of businesses in developing countries.
E-Commerce Success	Success of Development	This is an assessment of whether or not E-Commerce projects have been completed within budget and time.
	Cost Saving	Cost reduction in terms of operation and marketing costs including personnel, rent, order, payment processing, interactions and managing customer information and bypassing intermediaries.
	Communications Improvement	Improved internal communication and inter-organizational communication.
	Marketplace Performance	Extending firms reach, product/service differentiation, increased customer loyalty and improved customer relationship.
	Overall Satisfaction	Overall satisfaction with e-commerce applications.

There have been another frameworks as well that have been used to assess the E-Readiness of countries. There have been many different reports that have been developed from these frameworks. Listed below is a table that shows the major reports, their dates of publications, authors, a brief description of the report and its contents as well as the number of tools that have been used for assessment. ("Group of Globalization", 2003)

The POER model is highly applicable for organizational studies but there has been very little work done on its application on specific industries or sectors. This can be a very important piece of information for foreign or local investors who would like to invest in banking sector and give them good insight into the adaptability of a business to Ecommerce. The wide application of the organizational e-Readiness study can become a basis for classifying industries.

Electronic commerce enables business development for marketing channel intermediaries and strengthens their existing operations and strategic management. This research shows that electronic commerce provides stepwise business development refinement and repositioning in the form of process change and increased customer service. (Aldin, Brehmer, & Johansson, 2004)

2.12 Implementing Electronic Commerce

The most frequent changes witnessed so far in the firms that were studied were on activity changes where telephone and fax orders are replaced with digital orders directly into ERP and business systems. These changes require wholly new internal resources and re-allocation of old resources.

For example, call centre personnel can put more emphasis on "quality time" and focus on handling the more complicated questions. This development makes it possible to create hybrid systems (human and electronic interfaces) like the Bilia call centre for receiving service bookings. Another example is Bergman & Beving Tools' business unit Luna and their first Internet solution that focuses primarily on replacing old terminals in the relationships with dealers.

This phase is characterized mainly by changes in internal refinement activities (e.g. decrease in order handling costs due to simpler administration, digital publication of catalogues). The initiatives were managed within e-commerce projects. The changes were on business unit levels (e.g. Luna within Bergman & Beving Tools, the Swedish part of VWR International) and fairly simple solutions that focused on specific and target activities were implemented. Success in such a focused-activity-level approach appears to be a prerequisite for continued business development with e-commerce.

This first step where electronic commerce is added to the current business and enhancements are performed on an activity level mainly for the purposes of refinement. This first phase signaled a commitment to e-commerce development in terms of customers, competitors and suppliers.

In three to six months several changes had been implemented, but contrary to expectations, expenses had increased and few "pure profitable gains" were realized. The "business cases" for these early e-commerce implementations were presented in other terms, like the company must participate in the learning, experimentation and development of e-commerce to ensure not losing their market positions to competitors. The time had arrived to take stock of what had been accomplished thus far and rethink the use of e-commerce. The next phase was to rethink and take departure from different priorities and the companies' strategic marketing objectives.

2.13 Rethinking the use of electronic commerce

In this second phase, activities and processes in the companies and their channels have changed. Secondary effects emerge, e.g. the flow of goods across business units. In this phase too, a wider perspective outside of the activities is taken, where whole processes and service outputs from the processes are considered. In the ordering process the new electronic commerce flow added a parallel customer communication process to existing ones over telephones, fax, mail and personal selling. This enabled cost efficiency and better availability. In the Bergman & Beving Tools case this has been achieved through implementing common (across business units) ordering, delivery and faster search capabilities. It is a question of consolidating systems used in different business units as well as different geographical units into common systems.

A secondary effect on the distribution of goods is evident, as there is no time lag in the entry of orders into the business systems. In the Bergman & Beving Tools case there had also been changes in order characteristics, with decreased order line values and later ordering for non-stocked items, which had affected internal handling and external due dates previously. In this phase electronic commerce is used as a catalyst to review and change whole processes (consisting of many integrated/linked activities), both internally and externally, to decrease costs and reduce process time through integration.

The service outputs are affected mostly by the separation of product information from production/ ordering functions. With the product information being provided through electronic commerce, the product assortment is consolidated. This is illustrated by Bergman & Beving Tools and can be aggregated so that search for products is simplified as for used car assortment between Bilia dealerships.

Spatial convenience is due to 24 hour availability and delivery time. There is a service emphasis emerging in parallel with connections to process change. Service enhancements focus on market response time, customer service and the creation of image and brand values. This is achieved by either promoting a service concept as in the Bilia case, or as in the Bergman & Beving Tools case promoting one common channel for a wide range of complementary products.

In this phase, external links command increasing attention over that of internal firm activities, mainly directed

towards customers and not so much to the suppliers. Improvements are still rather simple, i.e. more or less a development of what the companies historically have been good at. However, a wider process perspective has been initiated. Service emphasis and process change as the primary elements of e-commerce development.

In the second phase the scope has broadened from a focus on activities to a focus on processes. E-commerce begins to be recognized as very much connected to the companies' overall business development strategies. Internal co-operation shapes the platform that may be used to enhance service offerings and ultimately change processes with customers. There is interplay between service offering development and process change.

Changes in processes sometimes make new services possible, and new services often require new processes. In this study, this interplay created a positive attitude in the companies toward certain processes or organizational functions. But to continue business development, a business-wide perspective is needed where all processes, functions, regions or business areas are on the same level. Once this positive development atmosphere emerges a third phase emerges.

2.15 Summary and Managerial Implications

Increasingly competitive environments in most cases demand channel flexibility and rapid market response capability. Electronic commerce enables business development in activities, processes and services, as well as structural and segmentation change. In addition, electronic commercedevelopment promotes a change of roles and responsibility, within the organization and between organizations. It increases the ability to tailor offerings to the specific needs of each customer while maintaining competitive costs and pricing. Focus extends beyond the focal firm towards the whole supply chain, and on adding value to core products and services.

The cases provide support for findings on differentiation strategies and rationalization (Porter, 1996) There is two primary areas of activities where electronic commerce development occurred in this study: refinement and repositioning activities. Refinement activities are concerned with actions that aim at inter-organizational collaboration in either the marketing channel or the supply chain. Repositioning activities concern internal and external enhancements in customer and supplier relations and resemble market issues discussed in theory.

The study also revealed that the electronic commerce technology development and internal adoption process have allowed Bilia to make electronic commerce an integral part of business development. Berman & Beving Tools has in turn focused on maintaining internal requirement skills with external development resources. VWR began with local solutions, initially as a pilot project, which was integrated by a top down business-wide implementation, involving a stepwise approach of a number of business development activities.

3. Research Methodology

3.1 Introduction

To start such a study the researcher intends to take a gradual approach and first of all study the level of perceived organizational E-Readiness of the highly competitive organizations in the banking sector of Pakistan. For this purpose the POER model will be used. The variables listed in the POER model are:

- ✓ Awareness
- ✓ Human Resource
- ✓ Business Resource
- ✓ Technology Resource
- ✓ Commitment
- ✓ Governance

Due to time and academic limitations, the researcher was interested only to find out the availability of technological resources to adapt to E-Commerce this lead to the formation of the main hypothesis.

3.2 Hypothesis

The following hypothesis can be formed for this study:

H1: Most of the banks in Pakistan have the technological resources to adapt to Ecommerce.
Null H1: Most of the banks in Pakistan do not have the technological resources to adapt to Ecommerce.

Although there can be a hypothesis for each of the variable listed but for the scope and purpose of the current assignment the researchers was content with researching only the technological readiness of the banking sector

of Pakistan.

As we will see in the operational definition that to test the usage of technological resources we need to specify the exact terms that would define technological readiness. In view of literature review the following dimensions were identified for defining technological readiness.

- ✓ Availability of computers
- ✓ Intranet
- ✓ Website and its usage
- ✓ Central database
- ✓ Central Information systems
- ✓ Information Systems in departments
- ✓ Implementation of ERP Software.

So we need to further formulate some hypotheses which once tested would lead to testing the main hypothesis stated above.

H2: Most of the banks have adequate number of computers.
Null H2: Most of the banks do not have adequate number of computers.

H3: Most of the banks have a website.
Null H3: Most of the banks do not have a website.

H4: Most of the banks have a central database.
Null H4: Most of the banks do not have a central database.

H5: Most of the banks do have central information system.
Null H5: Most of the banks do not have a central information system.

H6: Most of the banks do not have ERP (Enterprise Resource Planning) software
Null H6: Most of the banks do have ERP (Enterprise Resource Planning) software.

H7: Most of the banks use website for purposes higher than providing contact information.
Null H7: Most of the banks only use website to provide contact information.

3.3 Operational Definition
The Information Technology related resources that are required for conducting Ecommerce. These resources include the availability of computers and internet, the presence of databases and ERPs in the departments of an organization, as well as the presence of a central connecting network and the main purpose of the usage of a website if present to determine the level of readiness for adopting Ecommerce.

3.4 Sample Selection
The population for this study is all the Banks which are located in Karachi. In terms of sample selection the researchers proposes to use a quota sampling technique. Data was collected from selected locally own banks and foreign own banks situated in Karachi only. Sample size is 15 Banks out of 40 Banks. In which six local own banks, six foreign own banks and three Islamic banks.

3.5 Data Collection
A questionnaire was designed and self administered to IT professionals working in the sample organizations. The questionnaire was based on the variables identified for probing.

3.6 Testing Methodology
The questionnaire was organized in a manner that each question is categorical. This resulted in the extraction of ordinal data. Each choice in a question clearly determines a distinct level of technological adaptation to E-Commerce. The data was then organized using frequency tables and graphs were drawn to see a visual representation of the frequencies.

In order to determine whether the results obtained from the sample can be generalized for the whole population the chi-square test was used for each secondary hypothesis corresponding to each variable. To test the main

hypothesis a cross tabulation was used to see the number of banks who have a website as well as have central information system means that they are centrally connected.

4. Conclusion & Recommendation

4.1 Conclusion

Defining how to measure the overall readiness in terms of technological resources to adapt to E-Commerce was a major challenge. That was overcome by identifying critical IT resources required to adapt to Ecommerce. The analysis by using different statistical techniques gave mixed results.

The studies done for banks have been very focused only on three factors namely capacity, opportunity and access. These factors are a combination of internal and external environmental factors with a larger emphasis on external environmental factors of an organization, but do not focus much on the organization itself in-terms of E-Readiness.

The POER model is highly applicable for organizational studies but there has been very little work done on its application on specific industries or sectors. This can be a very important piece of information for foreign or local investors who would like to invest in banking sector and give them good insight into the adaptability of a business to E-Commerce. The wide application of the organizational E-Readiness study can become a basis for classifying industries.

The researcher did not come across any study that details anything about organizational E-Readiness in Pakistan. Although we do find a lot about country rankings as stated in the E-Readiness rankings that are issued by the economist business unit every year. This researcher was attempting to develop an understanding of the current E-Readiness of a segment of the banking sector of Pakistan and then in the future try to evaluate the factors if they require any improvement and then hopefully apply it to the whole industry.

The sample was selected on the basis of quota sampling and the banks in each quota were selected randomly. The result shows that 100% of the responding banks have a website as well as a CIS. From this evidence it can safely said that there is enough evidence to reject the null hypothesis (Null H1) and uphold the alternate hypothesis (H1). This leads us to the conclusion that the banking industry is at an advanced level of e-readiness in terms of technological resources.

4.2 Recommandation

By virtue of the research conducted it can be said that all what is needed then is to connect the CIS to the website to provide real-time online information which would be the platform to provide complete E-Commerce functionality. From this we can postulate that a firm having both the above mentioned capabilities is definitely at the highest stage of e-readiness.

The result obtained from cross tabulation shows that all the banks surveyed do have a website and also have a CIS indicating internal connectivity. It is thus recommended by the researcher that banks should integrate their IT infrastructure and carry out BPI and BPR to realign them with E-Commerce.

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