Development of e-commerce platforms through PHP and my SQL

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***Abstract*: In this era of the Internet, e-commerce is achieving leapfrog development, keeping the growth of brick and cement companies in the dust. In many cases, physical companies are using rivals driven by the Internet or e-commerce. People in developed countries and more and more people in developing countries now use e-commerce sites for daily shopping every day. Even so, the spread of e-commerce in the underdeveloped world is not that big, and there are still many shortcomings. This article describes the different aspects of the development of e-commerce sites and the best solutions for the challenges of developing e-commerce sites. It consists of a planning process that begins with determining use cases, domain modeling, and architectural patterns for web applications. The entire development process is divided into two main parts: positive development and final development. The design of the database is also discussed, with a focus on its relational connectivity. This rational approach to developing an e-commerce site is reproducible and easy as developing countries are developing e-commerce sites and resources in computers because their socioeconomic status is scarce and expensive in underdeveloped countries. Increasing use of smartphones, tablets, and broadband, as well as 4G Internet, has led to the development of a solid consumer base that may grow further. E-commerce, commonly referred to as e-commerce, is a business that facilitates business or promotes products or services through a computer network such as the Internet. E-commerce is based on mobile commerce, electronic funds transfer, supply chain management, Internet marketing, online transaction processing, electronic data interchange (EDI), e-commerce systems and other technologies, inventory management and automated data collection systems. Modern e-commerce typically uses the World Wide Web as at least part of the transaction lifecycle, although it can use other technologies, such as e-mail. This article explores and develops e-commerce platforms through PHP and my SQL.**

***Keywords*: e-commerce, electronic data interchange (EDI), Information, and Communications Technology (ICT).**

I. Introduction to E-Commerce

In the emerging global economy, e-commerce and e-business have increasingly become a necessary component of business strategy and a strong catalyst for economic development. The integration of information and communications technology (ICT) in business has revolutionized relationships within organizations and those between and among organizations and individuals. Specifically, the use of ICT in business has enhanced productivity, encouraged greater customer participation, and enabled mass customization, besides reducing costs. With developments in the Internet and Web-based technologies, distinctions between traditional markets and the global electronic marketplace-such as business capital size, among others-are gradually being narrowed down. The name of the game is strategic positioning, the ability of a company to determine emerging opportunities and utilize the necessary human capital skills (such as intellectual resources) to make the most of these opportunities through an e-business strategy that is simple, workable, and practicable within the context of a global information milieu and new economic environment. With its effect of leveling the playing field, e-commerce coupled with the appropriate strategy and policy approach enables small and medium scale enterprises to compete with large and capital-rich businesses. On another plane, developing countries are given increased access to the global marketplace, where they compete with and complement the more developed economies. Most, if not all, developing countries are already participating in e-commerce, either as sellers or buyers. However, to facilitate e-commerce growth in these countries, the relatively underdeveloped information infrastructure must be improved. Among the areas for policy intervention are:

- High Internet access costs, including connection service fees, communication fees, and hosting charges for websites with sufficient bandwidth;
- Limited availability of credit cards and a nationwide credit card system;
- Under-developed transportation infrastructure resulting in slow and uncertain delivery of goods and services;
- Network security problems and insufficient security safeguards;
- Lack of skilled human resources and key technologies (i.e., inadequate professional IT workforce);
- Content restriction on national security and other public policy grounds, which greatly affect business in the field of information services, such as the media and entertainment sectors;
- Cross-border issues, such as the recognition of transactions under laws of other ASEAN member-countries, certification services, improvement of delivery methods and customs facilitation; and
- The relatively low cost of labor, which implies that a shift to a comparatively capital-intensive solution (including investments on the improvement of the physical and network infrastructure) is not apparent.

It is recognized that in the Information Age, Internet commerce is a powerful tool in the economic growth of developing countries. While there are indications of ecommerce patronage among large firms in developing countries, there seems to be little and negligible use of the Internet for commerce among small and medium sized firms. E-commerce promises better business for SMEs and sustainable economic development for developing countries. However, this is premised on strong political will and good governance, as well as on a responsible and supportive private sector within an effective policy framework. This primer seeks to provide policy guidelines toward this end.

E-commerce
Electronic commerce or e-commerce refers to a wide range of online business activities for products and services.

1. It also pertains to "any form of business transaction in which the parties interact electronically rather than by physical exchanges or direct physical contact."

2. E-commerce is usually associated with buying and selling over the Internet, or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network.

3. Though popular, this definition is not comprehensive enough to capture recent developments in this new and revolutionary business phenomenon. A more complete definition is: E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals.

4. International Data Corp (IDC) estimates the value of global e-commerce in 2000 at US$350.38 billion. This is projected to climb to as high as US$3.14 trillion by 2019. IDC also predicts an increase in Asia's percentage share in worldwide e-commerce revenue from 5% in 2000 to 10% in 2014

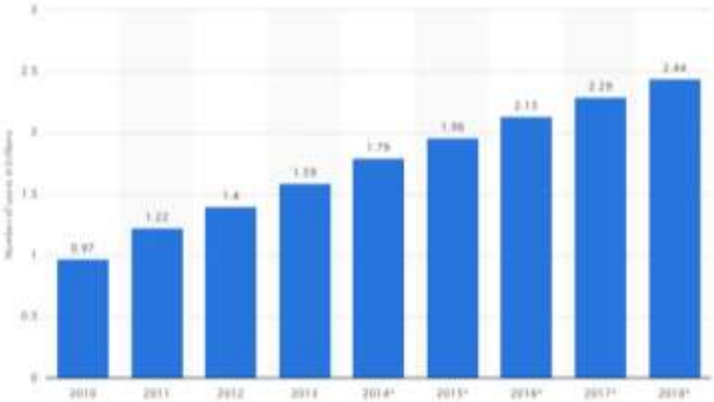

Figure 1. Worldwide E-Commerce Revenue, 2000 &2019 (as a % share of each country/region)

E-commerce the same as e-business
While some use e-commerce and e-business interchangeably, they are distinct concepts. In e-commerce, information, and communications technology (ICT) is used in inter-business or inter-organizational transactions (transactions between and among firms/organizations) and in business-to-consumer transactions (transactions between firms/organizations and individuals). In e-business, on the other hand, ICT is used to enhance one's business. It includes any process that a business organization (either a for-profit, governmental, or non-profit entity) conducts over a computer-mediated network. A more comprehensive definition of e-business is: "The transformation of an organization's processes to deliver additional customer value through the application of technologies, philosophies and computing paradigm of the new economy." Three primary processes are enhanced in e-business:

1. Production processes, which include procurement, ordering and replenishment of stocks; processing of payments; electronic links with suppliers; and production control processes, among others;

2. Customer-focused processes, which include promotional and marketing efforts, selling over the Internet, processing of customers' purchase orders and payments, and customer support, among others; and

3. Internal management processes, which include employee services, training, internal information-sharing, video-conferencing, and recruiting. Electronic applications enhance information flow between production and sales forces to improve sales force productivity. Workgroup communications and electronic publishing of internal business information are likewise made more efficient.

What are the different types of e-commerce?
The major different types of e-commerce are:

- business-to-business (B2B);
- business to-consumer (B2C);

- business-to-government (B2G);
- consumer-to-consumer (C2C); and
- mobile commerce (m-commerce).

II. E-COMMERCE APPLICATIONS: ISSUES AND PROSPECTS

Various applications of e-commerce are continually affecting trends and prospects for business over the Internet, including e-banking, e-tailing and online publishing/online retailing. A more developed and mature e-banking environment plays an important role in ecommerce by encouraging a shift from traditional modes of payment (i.e., cash, checks or any form of paper-based legal tender) to electronic alternatives (such as e-payment systems), thereby closing the e-commerce loop. What are the existing practices in developing countries with respect to buying and paying online? In most developing countries, the payment schemes available for online transactions are the following:

A. Traditional Payment Methods

● Cash-on-delivery. Many online transactions only involve submitting purchase orders online. Payment is by cash upon the delivery of the physical goods.

● Bank payments. After ordering goods online, payment is made by depositing cash into the bank account of the company from which the goods were ordered. Delivery is likewise done the conventional way.

B. Electronic Payment Methods

● Innovations affecting consumers, include credit and debit cards, automated teller machines (ATMs), stored value cards, and e-banking.

● Innovations enabling online commerce are e-cash, e-checks, smart cards, and encrypted credit cards. These payment methods are not too popular in developing countries. They are employed by a few large companies in specific secured channels on a transaction basis.

● Innovations affecting companies pertain to payment mechanisms that banks provide their clients, including inter-bank transfers through automated clearing houses allowing payment by direct deposit.

Electronic payment system

An electronic payment system (EPS) is a system of financial exchange between buyers and sellers in the online environment that is facilitated by a digital financial instrument (such as encrypted credit card numbers, electronic checks, or digital cash) backed by a bank, an intermediary, or by legal tender. EPS plays an important role in e-commerce because it closes the e-commerce loop. In developing countries, the underdeveloped electronic payments system is a serious impediment to the growth of e-commerce. In these countries, entrepreneurs are not able to accept credit card payments over the Internet due to legal and business concerns. The primary issue is transaction security. The absence of inadequacy of legal infrastructures governing the operation of payments is also a concern. Hence, banks with e-banking operations employ service agreements between themselves and their clients. The relatively undeveloped credit card industry in many developing countries is also a barrier to e-commerce. Only a small segment of the population can buy goods and services over the Internet due to the small credit card market base. There is also the problem of the requirement of "explicit consent" (i.e., a signature) by a card owner before a transaction is considered valid-a requirement that does not exist in the U.S. and in other developed countries.

Confidence level of consumers in the use of an EPS?

Many developing countries are still cash-based economies. Cash is the preferred mode of payment not only on account of security but also because of anonymity, which is useful for tax evasion purposes or keeping secret what one's money is being spent on. For other countries, security concerns have a lot to do with a lack of a legal framework for adjudicating fraud and the uncertainty of the legal limit on the liability associated with a lost or stolen credit card. In sum, among the relevant issues that need to be resolved with respect to EPS are: consumer protection from fraud through efficiency in record-keeping; transaction privacy and safety, competitive payment services to ensure equal access to all consumers, and the right to choose of institutions and payment methods. Legal frameworks in developing countries should also begin to recognize electronic transactions and payment schemes.

Basic of e-banking

E-banking includes familiar and relatively mature electronically-based products in developing markets, such as telephone banking, credit cards, ATMs, and direct deposit. It also includes electronic bill payments and products mostly in the developing stage, including stored-value cards (e.g., smart cards/smart money) and Internet based stored value products.

III. E-Commerce In Developing Countries

How important is e-commerce to SMEs in developing countries? How big is the SME e-business market?

For SMEs in developing countries e-commerce poses the advantages of reduced information search costs and transactions costs (i.e., improving efficiency of operations-reducing time for payment, credit processing, and the like). Surveys show that information on the following is most valuable to SMEs: customers and markets, product design, process technology, and financing source and terms. The Internet and other ICTs facilitate access to this information. In addition, the Internet allows automatic packaging and distribution of information (including customized information) to specific target groups. However, there is doubt regarding whether there is enough information on the Web that is relevant and valuable for the average SME in a developing country that would make investment in Internet access feasible. Underlying this is the fact that most SMEs in developing countries cater to local markets and therefore rely heavily on local content and information. For this reason, there is a need to substantially increase the amount and quality of local content (including local language content) on the Internet to make it useful especially to low-income entrepreneurs.

How is e-commerce useful to developing country entrepreneurs?

There are at least five ways by which the Internet and e-commerce are useful for developing country entrepreneurs:

1. It facilitates the access of artisans and SMEs to world markets.

2. It facilitates the promotion and development of tourism of developing countries in a global scale.
3. It facilitates the marketing of agricultural and tropical products in the global market.

Developing country SMEs in the services sector have expanded their market with the increased ability to transact directly with overseas or international customers and to advertise their services. This is especially true for small operators of tourism related services. Tourism boards lend assistance in compiling lists of service providers by category in their Web sites. In addition, for SMEs in developing countries the Internet is a quick, easy, reliable, and inexpensive means for acquiring online technical support and software tools and applications, lodging technical inquiries, requesting repairs, and ordering replacement parts or new tooling. The Internet is also instrumental in enabling SMEs in developing countries to join discussion groups with their peers across the globe who are engaged in the same business, and thereby share information, experiences and even solutions to specific technical problems. This is valuable especially to entrepreneurs who are geographically isolated from peers in the same business.

E- Commerce

E-commerce is widely considered as buying and selling of products over the internet, along with the transaction that is completed solely through electronic measures. E-commerce is subdivided into three categories: business to business or B2B (Cisco), business to consumer or B2C (Amazon), and consumer to consumer or C2C (eBay). It is also called electronic commerce. India's retail market is competitive, increasingly lucrative and poised for dramatic growth. With a population of 1.25 billion that includes a large young, mobile-first generation many of whom share English as a common language plus an emerging middle class, India presents significant growth opportunities for retailers from across the globe. Meanwhile, a study from the Internet and Mobile Association of India found there were 52 million new Internet users there in the first six months of 2015, bringing the country's total user base to 352 million as of June. And of those, 213 million more than 60% accessed the web through their mobile devices. "If we look at the numbers, every three seconds an Indian experience the internet for the first time," It can lead to a lot of solutions for people in cities, where there's a lot of money but not a lot of retail stores." Therefore, India's economic growth and its demographic profile still make the country attractive to retail businesses at home and abroad. An important reason why e-commerce firms want to expand in the city is the availability of skilled technology workers. Currently, Bengaluru accounts for more than a third of the 1,000+ global in-house centers (facilities that combine technology development with the back-office functions of multinational corporations) in India.

"With more than half the world's population currently lives in cities, a proportion that is expected to grow substantially over the next few decades. The CMI highlights that, despite various political upheavals and ongoing economic uncertainties, many cities continue to show impressive dynamism. Keys to their success are the agility and openness that enable them to adapt quickly to each new wave of global change." The report noted that dynamic labor markets help fuel some 'Emerging Megacities' such as Chennai, Manila, Delhi, and Mumbai. However, this group faces significant infrastructure and quality of life issues, with high levels of inequality, congestion and pollution hindered by weak city governance. "Most dynamic cities share the ability to embrace technological change, absorb rapid population growth and strengthen global connectivity. Cities in India, China and Vietnam, along with several in the U.S., comprise of the top fastest-changing cities. India has taken over from China as home to some of the world's most dynamic cities. Six Indian cities feature in the CMI Global Top 30, with the country's primary technology hub, Bengaluru, moving into the top spot for the first time.

Indian rate of: Being driven by a young demographic profile, increasing internet penetration and relative better economic performance, India's E-Commerce revenue is expected to jump from $30 billion in 2016 to $120 billion in 2020, growing at an annual rate of 51%, the highest in the world, according to a joint ASSOCHAM-Forrester study paper. The e-commerce industry in the country was likely to be worth USD 38 billion in 2016, a 67 per cent jump over the USD 23 billion revenues for 2015, as per industry body Assocham. "India's e-commerce market was worth about USD 3.8 billion in 2009; it went up to USD 17 billion in 2014 and to USD 23 billion in 2015. It was noted that the buying trends during 2016 has significant upward movement due to aggressive online discounts, rising fuel price and wider and abundant choice hit the e-commerce industry. Bengaluru has gained the most from this growth, the city, known globally as a major IT office. While in terms of base, India may be lower than China and other giants like Japan, the Indian rate of growth is way ahead of others. Against India's annual expansion of 51%, China's e-commerce is growing at 18%, Japan 11% and South Korea 10%, according to a joint study. With annual additions of 25 million internet users, India is ahead of countries like Brazil and Russia even within the BRICS nations. India has an Internet user base of 400 million in 2016 whereas Brazil has 210 million internet users and Russia has 130 million of internet user. Interestingly, about 75% of online users are in the age group of 15-34 years since India is one of the youngest demography globally. "This is expected to be a continuing trend in coming years, given the age distribution in India", It is not surprising to see the growth among categories focused on younger audiences. The maximum online shoppers are from the 15-24 years of age group, comprising both of males and females.

Retail category penetration has increased to 65 million unique visitors a month registering an annual growth of 55%. The growth has come across all retail categories and most of them show promising transactions and conversion rates along with growth in visitors. Apparel has been the fastest growing subcategory in retail and reaches 24% online users. In 2015, the highest growth rate was seen in the apparel segment almost 69.5 per cent over followed by electronic items by 62 percent, baby care products at 53 per cent, and beauty and personal care products at 52 per cent and home furnishings at 49 per cent. On the mode of payment, almost 45 per cent of online shoppers reportedly preferred cash on delivery mode of payment over credit cards (16 per cent) and debit cards (21 per cent). Only 10 per cent opted for internet banking and a scanty 7 per cent preferred cash cards, mobile wallets, and other such modes of payment. E-Commerce industry likely to generate 2.5-lakh jobs in online retail. Increasing internet and mobile penetration, growing acceptability of online payments and favorable demographics has provided the e-commerce sector in India the unique opportunity to companies connects with their customers. In India roughly 60-65 per cent of the total e-commerce sales are being generated by mobile devices and tablets shopping online through smart phones are proving to be a game changer, and industry leaders believe that m-commerce could contribute up to 70 per cent of their e-commerce revenues. In 2013, e-commerce accounted for 1% of the total office leasing deals transacted, increasing to 4% in 2014. Although the sector's share in the first half of 2015 (H1 2015) is just 2%, it stands at 35% when pre-committed transactions in H1 2015 are considered.

In 2015, Indian online retailer Flipkart signed up for 2 million sq. ft. of custom built office space in Bengaluru, while Amazon leased approximately 1.2 million sq. ft. of space, both pre-committed deals, to keep pace with its accelerated growth and hiring plans. It was found that South India buys more than the North. According to comparative study, Contribution to overall e-commerce sales is as below:

- South India – 41%
- North India – 32%
- West India – 21%
- East, North east – 6%

According to eBay's statistics, West India has the most active sellers at 46%, followed by North India at 28%. The Competition in India is fierce. Bengaluru-based Flipkart is India's largest homegrown e-retailer, with a gross merchandise value of $10 billion and a track record of raising $3.15 billion in venture financing. Nearly 10 years old, Flipkart has 46 million registered users, 33,000 employees, and 14 warehouses and enjoys 10 million page visits each day, according to Quartz India., the company also acquired Bangalore-based mobile payments company PhonePe, its third acquisition in payments/wallet solutions. But Amazon India has given Flipkart a run for its money since arriving in 2013. India is providing Amazon with its largest number of new customers after the U.S., and Amazon India's Q4 2015 sales were equal to its total 2014 sales, according to Seeking Alpha. (Amazon hasn't released numbers on its sales in India.) Then there's six-year-old Snapdeal.

The New Delhi-based firm recently said that it is well on its way to the kind of volume and diversity of sellers that the government aims to encourage, doubling the number of sellers on its marketplace to more than 300,000 sellers, on its way to a projected 500,000 sellers. Flipkart and Snapdeal (among others), along with Amazon India, have already benefited from outside investment. Chinese retail giant Ali - baba is another emerging player in the Indian market and was planning to enter the e-commerce business in India in 2016". A deal with Tata could give Alibaba a foothold in India to rival Flipkart as well as Amazon India, experts say. An Alibaba/Tatas partnership in tandem with the government's new rules clarifications also could signal the beginning of increased competition from foreign companies as Indian e-commerce continues to "stabilize and mature, either through joint ventures or M&A activity, which could spur the next round of investment activity in this space. "The ripple effect of demonetization has started the migration from traditional commerce to E-commerce among India's population. And it is only a matter of time before E-Commerce concerns in India see a huge boom. The smart decision for every business owner is to book a passage in the E-Commerce ship before it leaves the shore on its triumphant voyage. By integrating their business with E-Commerce, they can make sure that they are not unduly affected during any of the forthcoming economic crisis that results from this revolutionary stand by Narendra Modi on November 8, 2016.

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