A Fundamental Framework for D-Commerce Related Businesses

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Abstract–

Digital commerce (D-Commerce) is a business umbrella that integrates many business tasks for smooth functioning.D-commerce is a new technology based methodology for executing business transactions digitally by performing traditional functions such as customer experience on digital platforms, digital payment and funds transfer, report generation, data processing data storage, inventory management, invoicing electronic catalogs, cargo tracking, accounts management, point-of-sale data collection etc. using a new real online approach.

A new type of intelligent based framework is needed for efficient, effective and optimal management of D-commerce applications. The intention is not to create new computer languages, new data base management systems, new packages, repositories, communications protocols, new hard ware and so on. But the main aim in creating D-commerce frame work architecture is to better management of already existing computer languages, computer packages, software tools, repository tools, data processing tools and create a seamless device independent customer experience on various digital technology platforms. [1].

Main integral components of Digital commerce are smart mobile systems, location based communicational networks, computer network, new age database and information management system, security, services, messaging system and many other components such as World Wide Web, e-mails, websites, data mining tools, data warehousing tools machine learning tools, mobiles, and other applications and so on. Main goal of Digital commerce is to improve quality of goods and services with reduced costs and just in time (JIT) delivery of goods and services, online, on demand and so on.

Digital commerce improves business services, quality of services and quality of goods, quality of delivery, also improves productivity of resource & services by developing and using technology tools, techniques, and scalable D-commerce frameworks consisting of many sub frame works.

State-of-the-Dcommerce framework is needed and this framework is responsible for performing a specific well defined business tasks efficiently and effectively, just in time (JIT), on line and on demand. Digital commerce (D-commerce) is the future blood and DNA of any organization to be relevant to its end customers and partners.

Digital commerce (D-commerce) applications are rapidly increasing with high speed and in a controlled and systematic way using many tools like WWB, e-mail; online cash transfers and many other methods allow both information management as well as computer network management. WWW provides an information representation schemes security and payment schemes and many other schemes useful for online buying and selling and many Digital commerce applications are being built on hypertext as well as distributed hypertext systems.

*Keywords–*WWW, e-mail, dcommerce frame work, e-business, websites, EDI, EFT, machine learning, speech and language processing, data warehousing, data mining.

I. INTRODUCTION

Digital commerce is defined as a modern business methodology that improves quality of goods and services by using different state of the art techniques and technology including mobile technologies, computer based technologies such as e-mail, internet, computer network, mobile applications and so on. The main goal of Digital commerce is to cut business cost by improving business services efficiently effectively just in time, on demand and possibly with Digital services and computer technology and other software technologies.**D-commerce** (Digital commerce or EC) is the buying and selling of goods and services, or the transmitting of funds or data, over aDigital network, primarily the Internet.

Digital commerce is the indispensable collection of frame works of technologies, management methods, policies, procedures and many other scientific techniques and so on. Digital commerce is useful for firms, management, sellers, and

buyers. D-commerce was born as a result of increasing demand with in business and government services that can be executed efficiently and effectively by making better use of computing services, information services, communication services, and other business services. Digital commerce is becoming an integral part of modern business applications and computer technologies [2].

Whenever transactions among buyers and sellers takes place Digital information is accessed, stored, processed, arranged, organized and separated and then portrayed placed in various forms and formats conveniently in useful all ways.

Digital commerce draws on combination technologies such as mobile commerce, Digital funds transfer, supply chain management, Internet marketing, online transaction processing (OTP),electronic data interchange (EDI), inventory management systems, and automated datacollection systems. Modern Digital commerce typically uses the World Wide Web for at least one part of the transaction's life-cycle, although it may also use other technologies such as e-mail[3].

Main advantages of D-commerce are:

1) Improved quality of business services and products

2) Increased productivity of manufacturing items

3) To do paper less exchange of business information using EDI (electronic data interchange)

4) Increased number of business customers through E-mail (electronic mail) usage.

5) Usage of Digital bulletin boards.

6) Fast, convenient and less cost transactions using electronic funds transfer (EFT) method.

7) Increased fast communication and data processing speed using computer network technology.

8) Increased business sales, profits, customers, branches, operations and other operations using mobile technologies and mobile applications.

Different types of Digital commerce applications are:

1) Digital funds transfer

2) Banking applications

3) Purchasing

4) Research Applications

5) Micro Transactions

6) Advertising

7) Marketing

8) Customer support functions

Main goals of business are deliver Quality goods and services, improve productivity, stay in the business competition use technology as much as possible in a timely manner regularly update technology tools, software systems, methods, manuals, man power, and so on. Database and information management services, e-mail and EDI technologies are valuable tools and inevitable in the usage of Digital commerce applications in general no single technology is sufficient for Digital commerce instead integration of many different types of technologies are needed.

World Wide Web (WWW) is one of the best integrated architecture that is most suitable for many Digital commerce applications. Client-Server model based on the World Wide Web (WWW) is the most suitable and productive tool for many D-commerce applications technically as well as commercially.

II. NEED OF DIGITAL COMMERCE

Technology can improve many aspects of a business in different dimensions. Computers have tremendously improved the waysthe businesses operating and the ways technology has advanced so remarkably that those who are not using computer technologies and who are not trying to implement various computer based services in their business are at a major disadvantage against their business competitors. Particularly, there are many important advantages that computers can provide for small businesses to medium business to large business. Computers allow the application of different types of software technologies, hardware technologies, communication technologies, and Internet technologies that are very useful for businesses to keep track of their business files, documents, banking details, purchase details, schedules and deadlines. Computers also allow businesses to organize all of their information in a convenient, useful, fast, efficient, effective way[4].

The tremendous ability to store, process and manage very large amounts of data on a computer is convenient and inexpensive, and saves space. A computer's ability to allow a company to organize its files efficiently and effectively leads to more and better time management and productivity. Majority of operations of a company can now be executed in the company itself.

Nowadays computers allow work to be done faster and more efficiently, it is possible for a company to hire fewer staff. Email capabilities decrease postage costs; software applications

reduce the need for large accounting departments, while videoconferencing reduces the need for travel[5]. Computers help speed up other business operations. The collecting of consumer feedback, ordering of raw materials, and inspection of products is made quicker through the use of computers, allowing companies to operate much faster and to produce better quality results.

Many business costs, research and development costs and many other business related costs will also decrease with the help of computer usage. Scientific research can now be done using the Internet and computer software applications designed to develop and produce new products and services. New models of a product can be created online using virtual pictures and drawings instead of having to be hand-drawn. These interactive models created using software programs can help bring the product and its features to life for a far lower cost than creating an actual physical model of the given product.

Main applications of computers are:

SALES

Computers are cost effective tools for company website management to generate higher sales and profits for businesses. In the competitive business world many businesses now operate online and around the clock to allow customers from around the world to shop for their products and services[6]. No doubt, everyone should agree that computer technology is very much useful for increasing the business production. Hence, highly productive employees are needed for improving the development of any company.

COMMUNICATION

Computer and communication technologiesare creating several and most important inevitable impacts on our society. Nowadays computer is playing a vital role in every field of human life. With the help of computers many activities in daily life can be performed accurately, conveniently, very easily and quickly. A lot of time is saved and overall cost is reduced to solve a particular problem.

Many fields where computer are widely used

BUSINESS

Today, in global markets, it is impossible to run the business without the use of computer technology. Many business activities are performed very quickly and efficiently by using computers. The administrative paperwork is also reduced by using computers. Many businesses nowadays are using websites to promote and sell their products nationally and internationally using computer technologies[7].

EDUCATION

Computers are abundantly used in the fields of teaching and research areas. The students, particularly higher education levels, can solve different kinds of their problems quickly, efficiently and efficiently by using computers just in time as and when required. Students can also collect, use and communicate to others different types of information detailsavailable on the Internet.

BANKS

Computers usage is mandatory in banks. Today computers are widely used in banks because of multiple advantages. Computers are mainly used in banks for record keeping and maintaining accounts of customers. Most of the banks provide the facility of ATMs[8]. The customers can draw money through ATM card from any branch of the home bank or any another bankbranch at any time of a day.

ENTERTAIMENT

Perhaps entertainment field is growing quickly becausecomputers are playing very important role for the entertainment of human beings all over the world. Nowadays, computer can be used in many ways such as

1) To watch television programs on the Internet
2) People can also watch movies,
3) listen music, and play games on the computer

Many computer games and other entertainment materials of different kinds are available on the Internet.

MEDICAL

Computer usage is the gift given by the computer professionals to the medical field. Eye testing, blood testing, disease testing, symptom identification, surgery operations, stomach internal operations etc are controlled and coordinated by computer technologies. Nearly every area of the medical field uses computers either directly or indirectly. For example, computers are used for maintaining patient history and other records, for finding the results of test details, for searching the desired medicine or tablet, etc. They are also used for patient monitoring and diagnosis of diseases etc.

III. DIGITAL COMMERCE ARCHTECTURE

A state-of-the-art software frame work is necessary for developing efficient, effective, and productive D-commerce

applications. This software frame work must provide different types of tools that integrate and manage many business information details found in D-commerce applications.

Communication tools, processing tools, graphical tools, diagram tools, intelligent based tools, next generation tools, database and information management tools, world wide web tools, e-mail, data mining tools, data warehousing tools and so on. Presentation tools, games tools[9].

Main aim of D-commerce architecture is to integrate all these tools optimally and then use all these tools individually and sometimes combination of integrated tools and techniques to produce optimal results in an effective way and convenient way in a timely manner in achieving diversified business tasks. Fundamental task of D-commerce architecture is to develop a framework that integrates data and software for developing best D-commerce business applications.

Majortypes of D-commerce:

1) Business – to- customer

2) Customer-to-Business

3) Business –to-Business

4) Intra organizational

5) Inter organizational

6) Global tasks, Suppliers

7) customer and other related tasks

Information brokerage is a useful concept in business in order to handle very large amounts of information on the networks. Day by day huge amounts of on-line data are generating. This leads to inability to manage large data convenient in storing, processing managing and decision making. Hence, a set of software programs called software agents (information brokers) are necessary for efficient and effective management of large data. Data retrieving, storing and searching are important but adding value to the retrieved and modified data is even more important in decision making based on the modified data.

D-commerce is not completely based only on one tool. Instead, it is convolution of divergent fields such as machine learning, Data mining, Data warehousing, big data, cloud computing, fuzzy logic, artificial reporting tools, and graphical tools and so on. Interfaces are most important to develop a very strong D-commerce framework. Graphics and object manipulation interface is one of the big assets to the D-commerceframework [10].

Digital messages are the building blocks of any D-commerce based business. Sometimes there is a need to combine two or more messages. Combining two or more messages is called integrated message and it is more useful. Combining messages, e-mails, graphics, faxes and large data files is one example for integrated message.

Messages are managed by the software that is located between computer network and D-commerce applications. Larger D-commerce frameworks must be divided into small and well defined sub- frameworks. For example messaging Component can be designed as a sub frame work of a big D-commerce frameworks sub frame of a big D-commerce framework. Messaging is useful for communicating unstructured data (letters, reports, numbers, characters, memos, and so on) unstructured, messaging (fax,e-mail, and forms), Structured document messages (EDI).

D-commerce framework is a collection of software programs special middleware technologies are needed to provide interaction among all these software needed to provide interaction among all these software programs. A document is considered as an object in D-commerce. A document contains data and operations that can be performed on the data. so,

A document in D-commerce is similar in many ways to an object in many object oriented computer languages.

Now a days we are seeing that the emergence of document oriented computing is taking place in every where for example, the next generation operating System allows the user to create new applications by combining small "applets" into more complex applications. Reuse greatly allows for developing scalable D-commerce applications

IV. PROPOSED D-COMMERCE FRAME WORK

D-commerce business models can generally categorized in following categories.

Business - to - Business (B2B)
Business - to - Consumer (B2C)
Consumer - to - Consumer (C2C)
Consumer - to - Business (C2B)
Business - to - Government (B2G)
Government - to - Business (G2B)

A new D-commerce frame work is proposed for integrated business environment. This new frame work consists of many computer technology related software, software tools, software packages including state of the art features. Various types of interrelated things of D-commerce framework are:

Data and software management tools

1) Computer network and communication protocols

2) World Wide Web tools

3) Internet tools

4) Machine learning tools

5) Cloud computing tools

6) Intelligent software agents

7) Data warehousing tools

8) Data mining

9) Statistical tools

10) Electronic data interchange (EDI) management tools

11) Reporting tools

12) Graphic packages and tools

13) Website management techniques

14) E-mail facilities

15) Application services

16) Fuzzy logic

17) Artificial intelligence

18) Artificial neural networks

19) Speech and language processing tools

20) Big Data Analytics

Machine learning is an emerging set of tool kit for developing intelligent agent based software for effective usage in many applications related to D-commerce. Machine learning is based on learning by examples.

Data mining and big data mining techniques are very much useful for many D-commerce applications implementation efficiently [11].

Cloud computing is also an emerging area where many applications of D-commerce are either directly or indirectly related for efficient and optimal storage of documents, data and other business related details

Big Data Analytics are particularly useful for implementing and maintaining very large data details of companies for better usage of resources, better decision making and management of business related tasks.

VI. CONCLUSIONS

We will discuss in the next paper how to create an intelligent based frame work for D-commerce based business tasks. We are planning to develop a comprehensive and more elaborative frame work suit for businesses by combining various state of the art computer software tools and techniques that can deliver Just in time delivery of required software to meet digital commerce needs.

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