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E-COMMERCE & DEVELOPMENT TOOLS: XML AND COMPONENT TECHNOLOGY

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ABSTRACT

Over thousands of years the people have conducted business with one another, they have adopted the tools and technologies that became available. for example, the advent of sailing ships in ancient times opened new avenues of trade to buyers and sellers. More recent innovations, such as the printing press, the steam engine, and the telephone, each changed the way in which people conducted commerce activities.

Firms have used various electronic communication tools for decades to conduct different kinds of business transactions. Banks have used EFTs to move customers' money around the world, all kinds of businesses have used EDI to place orders and send invoices, and retailers have used television advertising to generate telephone orders from the general public for all kind of merchandise.

The web has made online shopping possible for many business and individuals. In a broader sense, electronic commerce has existed for many years. For decades, banks have been using Electronic Funds Transfers (EFTs, also called wire transfers), which are electronic transmission of account exchange information over private communication networks.

KEYWORDS: ***E-Commerce, electronic communication, marketing, selling, technologies***

INTRODUCTION

Businesses also have been engaging in a form of electronic commerce, known as electronic data interchange, for many years. **Electronic Data Interchange (EDI)** occurs when one business transmits computer-readable data in a standard format to another business. In the 1960s, businesses realized that many of the documents they exchanged related to the shipping of goods- such as invoices, purchase orders, and bills of loading – and included the same set of information for almost every transaction. They also realized that they were spending a good deal of time and money entering these data into their computers, printing paper forms, and then reentering the data on the other side of the transaction. Although the purchase order, invoice, and bills of loading for each transaction contained much of the same information. By creating a set of standard formats for transmitting that information electronically through EDI, businesses were able to reduce errors, avoid printing and mailing costs, and eliminate the need to re-enter the data. EDI enables computer-to-computer exchange of structured information in a standard electronic format between trading partners. Both trading partners should follow the same standards in order to exchange data through EDI.

Key factors, to be addressed for the success of E-Commerce: One of the most basic requirements is the clarity of the business objectives, without which E-Commerce will not have a proper direction. In order to set the business objectives, a clear understanding of the target buyer is essential. This target buyer for which the business is delivered decides the appropriate model and approaches. Without secure transactions and interactive business technique applied using multimedia support, the objective of E-Commerce cannot be fulfilled. E-Commerce programme needs to be divided into small achievable modules to minimize risk. Each of these modules should produce measurable deliverables and be seen to deliver visible business value, so that the overall programme justifies to the business and to the participants, Usage of XML in E-Commerce tool design and development helps to ensure consistency and transferability of skills. Component technology allows transferability of skills. Component technology allows us to develop very complex applications not from scratch, but rather by mixing and matching a selected array of specialized modules. Use of XML and component technology helps a lot in adding the above feature to a tool.

E-Commerce Definition: *E-commerce*, *ecommerce*, or *electronic commerce* is defined as the conduct of financial transactions by electronic means. With the growth of commerce on the Internet and the Web, *ecommerce* often refers to purchases from online stores on the Web, otherwise know as *e-commerce Web sites*. They may also be referred to as "*virtual-stores*" or *Cyber stores*. Since the transaction goes through the Internet and the Web, some have suggested another term: *I-commerce* (Internet commerce), or *icommerce*. Few have referred to it as *Web-commerce*. E-commerce can be *business to business* (B to B) or *business to consumer* (B to C) or *consumer to consumer* (C to C).

Our **E-Commerce Definition** at Straight-On, is harnessing the power of the Internet to help you make money more effectively and efficiently. It means building your on-line store on a custom designed foundation of an inventory database, and adding secure credit card transactions with real-time credit card authorization using CyberCash or a similar system. It includes integrating the on-line checkout process with your fulfillment center and furnishing you, the merchant, with tools to manage your on-line store effectively.

In short, Electronic Commerce (E-commerce) is the marketing, selling and buying of products and services on the Internet.

Electronic Commerce is an emerging model of new selling and merchandising tools in which buyers are able to participate in all phases of a purchase decision, while stepping through those processes electronically rather than in a physical store or by phone (with a physical catalog). The processes in electronic commerce include enabling a customer to access product information, select items to purchase, purchase items securely, and have the purchase settled financially.

E-Commerce: *Abbreviation for* **Electronic Commerce.** A way of doing real-time business transactions via telecommunications networks, when the customer and the merchant are in different geographical places. Electronic commerce is a broad concept that includes virtual browsing of goods on sale, selection of goods to buy, and payment methods. Electronic commerce operates on a bonafide basis, without prior arrangements between customers and merchants. E-commerce operates via the Internet using all or any combination of technologies designed to exchange data (such as EDI or e-mail), to access data (such as shared databases or electronic bulletin boards), and to capture data (through the use of bar coding and magnetic or optical character readers).

E-Commerce: The simple process of buying and selling on the web.

ROLE OF ELECTRONIC COMMERCE

One opportunity that many businesses are finding as they examine their industry value chains is that electronic commerce can play a role in reducing costs, improving product quality, reaching new customers or suppliers, and creating new ways of selling existing products. For example, a software developer that releases annual updates to programs might consider removing the software retailer from the distribution channel for updates. This would modify the software developer's industry value chain and would be an opportunity for increasing sales revenue, but it would not appear as part of the software developer business unit value chain. By examining elements of the value chain outside the individual business unit, managers can identify many business opportunities, including opportunities that can be exploited using electronic communication technologies – electronic commerce.

The value chain concept is a useful way to think about business strategy in general. When firms are considering electronic commerce, the value chain can be an excellent way to organize their examination of business processes within their business units and in other parts of their product's life cycle. Using the value chain reinforces the idea that electronic commerce should be a business solution, not a technology implemented for its own sake.

XML

The XML (Extensible Markup Language) standard allows us to define our own markup language with emphasis on specific tasks, such as electronic commerce, supply chain management and publishing XML is the format for defining the data across a number of application domains. The properties of XML markup make it suitable for representing data, concepts and contexts in an open, platform, vendor and language neutral manner. It uses tags-identifiers that signal the start and end of a related block f data-to create a hierarchy of related data components called elements. In addition to that this hierarchy of elements provides context-implied meaning based on location-and encapsulation. This hides data outside the application and data source from which it is derived.

XML technology has already been successfully used to furnish solutions for mission-critical data exchange, publishing, and software development. XML allows us for information sharing and exchange across entire domain rather than on a one-to-one basis. XML technology enables us to develop application-specific markup languages that better describe data and can be exchanged from on system to another system.

Creating a markup language includes defining the elements, attributes, and rules for their use. In XML language , this information is stored inside a Document Type Definition (DTD). DTDs may be included within XML documents or the DTD can be external to it. If a document does provide a DTD and the document adheres to the rules specified in the DTD then it is considered valid. XML provides several benefits over HTML (Hyper Text Markup Language) or other data formats in an E-Commerce framework. The most attractive benefit is its simplicity. XML can enable business data and learning content to be served, received and processed on the web as easily as HTML over such standard Internet protocols as HTTP (Hyper Text Transfer Protocol). It also works easily across Organizational boundaries.

XML IN E-COMMERCE

XML allows separation of style from content. By separating the data from its presentation style, XML provides a flexible model for multimode delivery of content in which different styles can be applied on the same data for different contexts of need.

XML can facilitate business resource searches since XML software can be easily parsed or indexed for search purpose. The business content can be structured using XML documents Content structured in XML has a self-describing quality, allowing it to be "played" on any XML-enabled transaction system of the authoring environment in which it originated.

The subsystems within an e-commerce ecosystem must be adapted to communicate with other systems using XML so they can route requests or translate message involving user data, progress tracking data, or e-commerce transactions.

In e-commerce environment, XML can be used to tag or markup information, such as seller data, product information,

so that it is easy to buy and exchange. It helps e-commerce vendors to develop applications faster, reuse then and easily and smoothly exchange data between the web-based product or content. XML gives us the flexibility to create customizable user interface architecture. Using XML, third-party developers can easily customize our user interface to integrate with their products. One of the chief strength of Extensible Markup Language is its flexibility. Instead of having to rewrite content for different formats, electronic business vendors can use XML to separate content from the way it is presented. XML allows us to create structured content that we can then manipulate in different ways to achieve different business deliverables. Many are using XML in the design of the tool instead of old database formats.

COMPONENT TECHNOLOGY

Software reuse is one of the most outstanding research topics in Software Engineering. An emerging technology Distributed Software Components promises for software interoperability, composition and reuse. The concept of software components has been maturing for a number of years. Many experts emphasize on the composition, encapsulation and the Component Object Model (COM), Java Beans, Enterprise Java Beans (EJB) and Common Object Request Broker Architecture (CORBA) are some examples of technologies that are based on the software reuse and allows programmers to focus their efforts in their specific business logic. The Object Management Group defines components within an infrastructure that allows assembling encapsulated and self-describing components. Similarly Microsoft's COM Technology defines a binary architecture and allows us to easily and inexpensively develop complex, diverse, dynamic business software.

COM : *Abbreviation for* **Component Object Model**. A software architecture developed by Microsoft to build component-based applications. COM objects are discrete components, each with a unique identity, which expose interfaces that allow applications and other components to access their features. COM objects are more versatile then Win32 DLLs (Dynamic Link Libraries) because they are completely language-independent, have built-in interprocess communications capability, and easily fit into an object-oriented program design. COM was first released in 1993 with OLE2, largely to replace the interprocess communication mechanism DDE used by the initial release of OLE. ActiveX also is based on COM.

DCOM : *Abbreviation for* **Distributed Component Object Model**. The Distributed Component Object Model (DCOM) is a protocol that enables software components to communicate directly over a network in a reliable, secure, and efficient manner. Previously called "Network OLE," DCOM is designed for use across multiple network transports, including Internet protocols such as HTTP. DCOM is based on the Open Software Foundation's DCE-RPC spec and will work with both Java applets and ActiveX® components through its use of the Component Object Model (COM).

EJB : ***Abbreviation for*** **Enterprise JavaBeans (EJB)**. Enterprise JavaBeans (EJB) is a server-side component architecture for the development and deployment of distributed object systems for the Java platform.

Enterprise JavaBeans is a specification for creating server-side scalable, transactional, multi-user secure enterprise-level applications. It provides a consistent component architecture framework for creating distributed n-tier middleware. It would be fair to call a bean written to EJB spec a Server Bean.

CORBA : *Abbreviation for* **The Common Object Request Broker Architecture**. The Common Object Request Broker Architecture (CORBA) is an emerging open distributed object computing infrastructure being standardized by the Object Management Group (OMG). CORBA automates many common network programming tasks such as object registration, location, and activation; request demultiplexing; framing and error-handling; parameter marshalling and demarshalling; and operation dispatching.

We characterize software components with three attributes : properties, methods and events. A property is any component member that is exposed for online transaction. A method represents messages that can be received and processed by a component. Components may also interact events. A component may register itself to receive notification when a significant functional unit, a user interface and a programming interface follows an established set of guidelines.

COMPONENT TECHNOLOGY IN E-COMMERCE

Transaction components encapsulate various aspects including Electronic Payment System, Electronic Data Interchange, Online Buying, Online Selling, Online Advertisement and Online Conferences. The transaction component may also include web-based content, web pages. Web content are not in and for themselves transaction Components. They do not expose properties, messages and events to other transaction components nor can they easily be composed outside the capacity of Hypertext.

Component-based development has two apparent advantages over traditional approaches to software development : economical and functional. Traditionally, a piece of software is often constructed from scratch, independent of past and future development efforts which prevents it from benefiting from other existing software and neither does it enrich future software development. Thousands of lines of code have to be written and essential wasted when the software is not adopted or becomes obsolete. This is very costly, both for domain in which the software is to be used and individual developers of business software.

Functionally, modularity allows developers and user to mix and match components to achieve different goals. This has multiple consequence for software developers and users.

1. Each component works independently of the others allowing each component to be an "expert" in one specific area. Given the complexity of software today it is difficult for any single developer to produce an excellent all-purpose piece of software. It allows programmers build on their functions well rather than something that performs in an average manner or many tasks.
2. It allows for combinational creativity on the part of the user/ developer. Given a wide variety of components, the user/ developer can mix and match pieces that are relevant to their task at hand and construct a piece of software that performs a variety of tasks seamlessly.
3. The component architecture also allows for expansion and modification of the software with changing needs.
4. Having a Component architecture allows for easier troubleshooting. In a component-based world, two things-malfunction in a single component or malfunction in the manner in which different components talk to each other, can cause a malfunction. In either case, identifying and rectifying the problem is easy-something

that would be extremely hard in the procedural modular way of developing software. One does not have to go back and attempt to parse through the entire code. The solution is usually replacing a malfunction modular rather then revamping the entire software. XML can be used as the data descriptor, making the integration between the components easier.

CONCLUSION

As the technology advances in the area of E-Commerce and many E-Commerce tools are coming up to aid in the development, customization are becoming the major issues. XML gives us the flexibility to create customizable user interface architecture. It allows us to create structured content that we can then manipulate in different ways to achieve different business deliverables. XML imposes standards that allows interoperability of tools. XML can also act as a data descriptor for the component architecture of the e-commerce tool. The component architecture allows for expansion and modification of the software with changing needs. Thus XML and Component technology together are going to revolutionize the E-Commerce Market.

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