



XML: Future of E-Content Business

-- The Impact of XML on Entertainment and Media Industry

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Abstract

Electronic commerce (e-commerce) has grown dramatically in the past decades due to the rapid development of Internet technology. Entertainment e-commerce has been at the vanguard of the online retail revolution. However, entertainment e-commerce has experienced rapid change over the past years. In order to be successful in the business, entertainment companies are constantly seeking efficient mechanisms to attract customers and to provide individualized services. In this paper, we identify the XML (Extensible Markup Language), a new type of data structure standard on the Internet, as part of the backbone for future e-content business. XML offers solutions to the success of the e-content business and provides support for entertainment e-commerce. The benefits of XML's features on the e-content business are identified and investigated in detail, and the challenges posted by the transition to XML are discussed. The paper concludes with a projection about the future of XML in the e-content business.

I. Introduction

Electronic commerce (e-commerce) has grown dramatically in the past decades due to the rapid development of Internet technology. The frequent usage of the Internet and the development of broadband technology facilitate a company's daily business process and contribute to the growth of e-commerce. According to the U.S. Census Bureau, e-commerce sales have grown more than 26% from \$25.8 million in 1999 to \$32.6 million in 2000 (U.S. Census Bureau 2001).

Entertainment e-commerce has been at the vanguard of the on-line retail revolution. Software products, such as videos, games, and music are among the top online purchase categories and are still the most frequent first-online purchase of consumers. The E-content Institute reveals that spending in the content industry increases \$1 billion annually, which corresponds to an over 7% growth rate (E-Content Institute Breakfast Briefing at Information Highway 2001). In addition, the popularity of sites like Napster has shown the huge consumer demand for electronically distributed entertainment products. However, the entertainment e-commerce market has undergone rapid change over the past years. Intense competition and the entrance of new market players have led to a wave of consolidations, mergers and acquisitions, and the current recession forces a slowdown of the growth of the e-content delivery market. In order to be successful, entertainment companies need efficient mechanisms to draw a wide range of customers and to provide individualized services.

Current software and hardware tools have become increasingly inadequate in meeting these new challenges and have greatly hindered the development of e-content business. The current web design tool—HTML (HyperText Markup Language) has some inherited problems, which limit its applications.

This paper presents the implications of XML for e-content revolution. We use the entertainment and media industry to analyze the opportunities and challenges presented by XML, as these industries are a major field for e-content application.

II. XML

XML stands for Extensible Markup Language. Unlike HTML, which is fixed in format, XML is extensible in the sense that it allows users to design their own customized markup languages for different types of documents. The major features of XML are that (1) the structure of a document is formally defined; (2) the presentation of data is separated from its content ([Peter Flynn, the XML FAQ](#)). Due to its unique features and characteristics, XML is very powerful and can greatly extend current web solutions, such as its hyper link capacity, and effective search functionality, and can revolutionize E-content business.

III. Implication of XML for E-Content Business

Due to the Internet and other digital technologies, the entertainment and media industry is under constant change and redefinition. One important change is that the demand for dynamic digital content keeps growing. To remain competitive, businesses have to continually adjust their present technology solutions. XML has presented new opportunities and challenges for businesses in the entertainment and media industry.

Hyper Linking Capability

Whereas both HTML and XML have hyper linking capabilities, XML is far superior to HTML in this area. While HTML links access documents at the page-level, XML links can address a document at the object level, which provides tremendous opportunity for web navigation. For example, CDbeat.com planned to launch a new CDbeat Internet Service based on Java and XML standards. This new Internet Service allows users who play music CDs, DVDs, CD-ROMs or downloaded MP3 files in their personal computer the option of being connected simultaneously to a limited number of customer pre-selected Internet sites related to a particular artist or specific content/information. Joel Arberman, Internet officer of CDbeat.com claimed: "CDbeat will offer a truly unique entertainment experience for the millions of people that currently play music CDs, DVDs, etc. in their personal computers (Business Wires, Nov. 22, 1999).

More Targeted Search

Current search functions on the web (on HTML documents) return too many hits. Using XML could make a search more effective. For example, if you want to find a recent book published by Johnson about e-commerce, you can define your search clearly and precisely: author ♦ Johnson, publication year ♦ 2001, subject ♦ e-commerce. Such a specific search is made possible as XML allows users to define their own tags, and it has the potential to support an infinite numbers of tags.

Media independent data storage and transmission XML could serve as a common data format for storing and exchanging information. It also enables communication across heterogeneous sources of data as it can work across incompatible hardware and software. This is one of the key features for realizing dynamic E-content, which will benefit the entertainment and media industry uniquely. In 2000, Reuters launched Reuters Entertainment Picture Service for portals and other Web publishers. It is an Internet-delivered entertainment news photograph product, which provides approximately 40 digital news images daily of film, television, fashion, music, sports personalities and celebrities for online publishers. XML is used for the transmission of the photographs on Reuters Entertainment Picture Service so that web publishers can publish the photographs quickly and easily from desktop to website (News Release, Sept. 6, 2000).

Personalized Data Presentation

XML is a meta-language: a language for describing other languages. Basically, XML describes rules that enable users to define their own customized markup languages to represent data. Users can work on the data without requesting it from the server each time. In addition, XML documents could be formatted for display in different ways. As a result, XML facilitates client-side data manipulation, as data can be managed based on the users ♦ needs and requirements. XML also facilitates information reuse. Once a file is created, it can be used as many times as a user desires with different formats. With the power of XML, information/service could be personalized to a great extent, which provides many new opportunities for the entertainment and media industry. Travel Book.com is actually able to provide its customers a personalized travel guide with the help of XML (Sindall 2000).

The success of XML also brings new hope to virtual reality (VR) applications, whose current slow progress is due to both technical impediments and the huge amount of costs associated with it. Virtual Reality Modeling Language, the standard created to boost the application of VR does not bring this exciting field new prosperity. Encouraged by the success of XML, the Web3D Consortium and the World Wide Web Consortium jointly defined an XML-compliant 3D standard for the web: X3D ("Extensible 3D"). With X3D, various "profiles" are created for VR display (Hurwicz 2000).

Due to its unique features and benefits, XML has become the new standard for managing e-content: a piece of information for a specific product/service is widely linked to that of other related products/services; a product/service promoted online could be easily detected by potential users; content is displayed more informatively and compellingly. Online publishers and commercial sites are better armed to compete with offline rivals, and their ability to serve current and potential users/customers is increased significantly.

IV. New Challenges

Whereas XML creates business opportunities for e-content business, it also presents challenges. One big challenge is the management of digital assets: ♦ soft ♦ products whose easy access and delivery make them both valuable and vulnerable. The widespread use of XML and EDI (electronic data exchange) would eventually result in the loss of VAN (value-added network). Although the costs associated with the use of VAN denied the participation of several medium and small-sized businesses, it does provide automatic protection over transmission and maintenance of lines and over the availability of the connection. By switching to such a public network as the Internet (due to XML and other standards), one loses the automatic protection of proprietary lines, and must adopt encryption technology when transmitting proprietary or private files (St. Laurent 1998).

Another challenge posed by XML is the added complexity associated with the added power. A large file with more tags will need more storage space, which increases network traffic and challenges the current bandwidth resources for handling such heavily used, heavily trafficked files.

V. Conclusion

It is no doubt that XML is becoming and will become more popular (Bragg 2000) in the e-content industry due to its specific data structure feature. However, the challenges associated with the new language might slow down the growth of XML. Robert Cringely predicated that XML is real, security is real, but rich media is not real ... It is the entertainment of the future, but alas that future won't start in 2002. It is inevitable that XML will bring new opportunities as well as challenges to the entertainment and media industry.

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