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A Framework for Analysis of the Use of the World Wide Web for Business

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1. Introduction

All over the world, businesses large and small are discovering the World Wide Web -- "the fastest growing, most innovative component of the Internet." (Cronin, 1995, p. 285). But what are they getting out of it? And, more importantly, what can and should they try to achieve by using the Web?

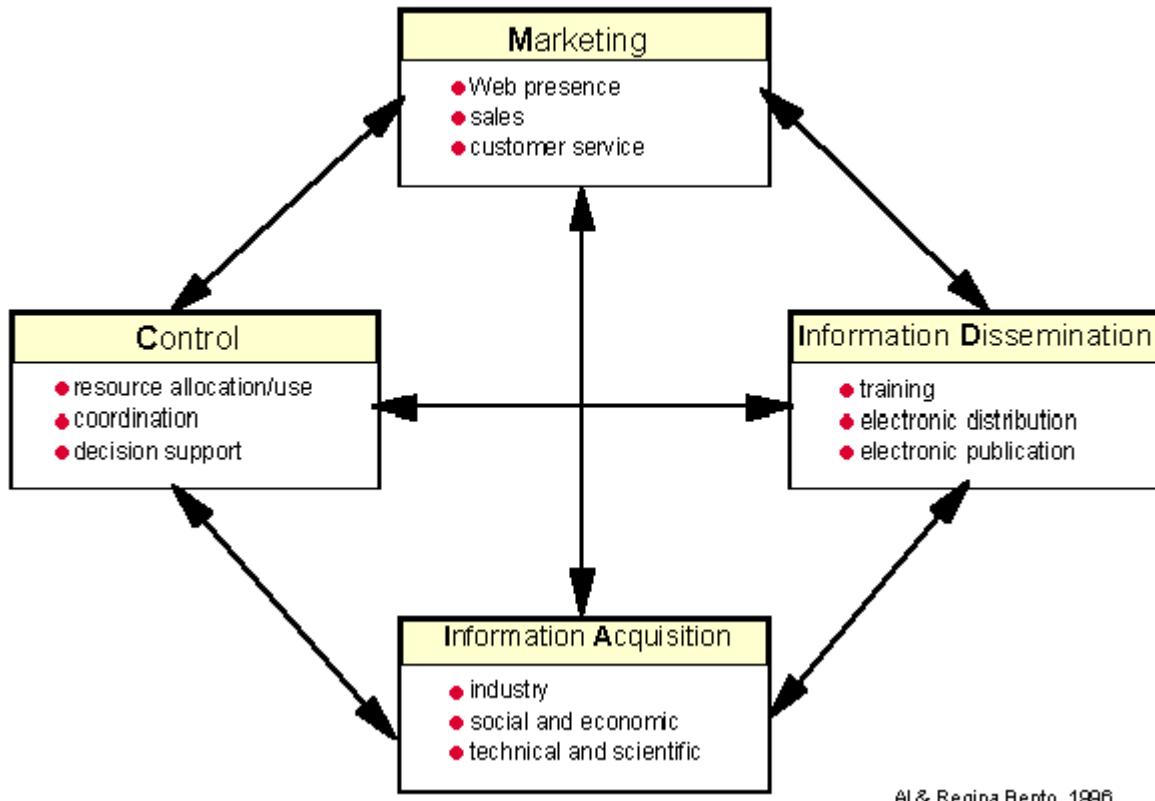
These two questions have tremendous practical and theoretical implications. In order to start answering them, however, we need to think of the Web as more than another clever gimmick to increase sales. This paper is a step in that direction. It presents a framework that articulates the various possible uses of the Web for business. The framework should help academicians to create a research agenda for exploring the specific characteristics, outcomes, success factors and measures of effectiveness and efficiency of the different types of Web uses for business. The framework should also help businesses to identify novel ways of using the Web, and of better utilizing its full potential.

2. The MIDIA-C Framework

The framework in Figure 1 identifies four major types of uses of the World Wide Web for business, summarized by the MIDIA-C acronym. Businesses are using the Web for Marketing, Information Dissemination, Information Acquisition and Control. The four types of uses are discussed below and will be extensively illustrated during the session through a live demonstration on the WWW.

The framework has been applied to review 72 business sites on the Web. Appendix I (available on request or at <http://worf.ubalt.edu/~abento/ais/use-examples.html>) presents 38 specific examples, sorted by the categories and sub-categories of Web usage considered here. Of the 38 examples, 25 offer not only links to the business home pages, but also detailed reviews of the sites prepared by graduate students using the framework.

MIDIA_C Framework



2.1 Marketing

The Web offers immense possibilities for marketing an organization, its products and services all over the globe (Cronin, 1995; Resnick & Taylor, 1995). Marketing uses of the Web for business encompass three major categories: Web presence, sales and customer service.

Web presence: An ever-increasing number of businesses is establishing a presence on the Web by creating home pages that introduce an organization, its history, mission, products and services. This has important implications for image and public relations: the WWW makes it possible for businesses to provide a variety of stakeholders with a set of integrated views of the organization, through a non-intrusive, on-demand, intuitive, graphical user interface. A Web presence also provides international visibility to organizations of any size: their home pages can be accessed from any point in the world, thus making it possible for them to communicate their mission, strengths, products and services to the global market.

Sales: The use of the Web for selling products and services is receiving growing attention. The ability of the Web to convey sound and image enables the customer to make choices based on more vivid, complete information. Customers can also post orders in a convenient way, with a few keystrokes, 24 hours a day, 365 days a year, and have an

immediate record of the transaction. They can pay for purchases directly on the Web, by providing a credit card or account number; alternatively, they may opt to pay by fax or phone, due to security concerns. Technological advances are being pursued, in order to lessen the risk of money handling on the Web. Other market transactions, such as Electronic Data Interchange (EDI) and home banking, are also moving into the Web.

Customer Service: One of the most thriving and promising areas of use of the Web is to improve customer service. A recent survey of 990 EDI users found that customer service is one the most common business uses of the Internet: 38%, a close second after e-mail (Brandel, 1996). The Web allows businesses to provide customers with four main types of customer service: a) general information about their products or services; b) specific information through direct access to on-line references and manuals, with easy navigation through progressively more detailed layers of information; c) expert answers to generic and specific customer questions, in the form of pages of "Frequently Asked Questions," interfaces for e-mail interaction, or instructions for other forms of communication (phone, fax, "s-mail"); and d) easy maintenance of products such as software upgrades. Providing customer service on the Web is more convenient for organizations, as well as cheaper. But it often means pushing the costs onto the customers and the question of how customers they will react in the long run still remains open.

2.2 Information Dissemination

The Web is a natural medium for disseminating information (Cronin, 1995; Resnick & Taylor, 1995). It provides a single location of data for updating and maintenance, and makes it available immediately throughout the world. The business uses of the Web for information dissemination fall into three main categories: training, electronic distribution and electronic publication.

Training: Businesses can use the hypermedia capabilities of the Web to provide training to employees and customers. Training can be conducted on an unrestricted or restricted (password-requiring) basis. The learning process can be highly tailored to the individual needs of the trainee, who may proceed at his or her own pace, following different logical sequences, exploring different levels of detail and so on. This type of training is also self-documenting: one can easily print what one reads, and also copy the materials, if allowed.

Electronic distribution: The Web is a natural medium for distributing continuously updated materials such as manuals and catalogs. In the previously cited survey of 990 EDI users, product catalogs represented the third most common business use of the Internet (30%). As Brandel (1996) notes, electronic catalogs "provide quick up-to-the-minute data for a relatively low cost." Catalogs may be made available on the Web to the public in general, or secured on an internal Web site accessible only by permission. The Web is also particularly well suited to showing pictorial images from collections and exhibits, enabling viewers to scan thumbnail miniatures and decide which ones to blow up for full version viewing.

Electronic publication: Practically anything that can be published is already being published, in one way or another, in the Web. There are WWW books, journals, magazines and newspapers. The Web opens a wealth of possibilities for up-to-the-minute, interactive, hyperlinked, multimedia publishing applications. The business potential of electronic publication is only starting to be explored. Copyright and control problems are still largely unresolved issues, however.

2.3 Information Acquisition

The very nature of the Web makes it a prime medium for acquiring any information (Cronin, 1995; Resnick & Taylor, 1995), but three main types may be of particular interest to business: information about the industry, social and economic information, technical and scientific information.

Information about the industry: The Web makes it easy for businesses to gather current and specific information about their competitors, suppliers and customers, not only locally but also in the global market. It provides sophisticated, yet simple to use search mechanisms, hyperlink jumps and tracking tools. The efficiency of search engines, though still somewhat limited, is constantly being improved. Valuable competitive information and leverage can be gained, or maintained, by observing how competitors and suppliers use the Web for marketing and information dissemination. The counterpoint to this, of course, is that organizations should be cautious about divulging information that might be used against them by their competitors.

Social and economic information: The Web is filled with current, detailed data on every possible type of social and economic data. Businesses can easily search it, for example, for statistics on demographic characteristics of different markets, currency, market and financial data, etc.

Technical and scientific information: Businesses can use the Web to access the latest and most sophisticated information from research and academic centers throughout the world, and to explore general or specialized libraries around the globe.

2.4 Control

The Web opens new ways for achieving the traditional purposes of control systems (Applegate, McFarlan & McKenney, 1996): using resources more effectively, coordinating the different parts of the organization for the achievement of its overarching goals, and improving the collection of data for decision-making.

Resource utilization: "Doing more with less" is the new business mantra, and could also be the logo for the Web. As seen before, the Web can leverage the use of resources in Marketing, Information Dissemination and Acquisition, increasing the speed and quality of efforts in these and other areas of business activity, while decreasing costs. With one single location for updating and maintenance, the Web offers immediate and detailed control over organizational communications. Being a paperless medium, it also enables

significant cost control, through savings on paper, reproduction and distribution expenses. Here, again, organizations should be cautioned that a strength (easy reproducibility of information on the Web) can sometimes become a liability (lack of control over the information).

Coordination: The Web serves important symbolic and practical functions in aligning the disparate parts of an organization with its overall goals. For example, hyperlinks make it easy to connect the home page for an overall organization with any number of pages for its various disparate parts. At a symbolic level, they produce an "all under one roof" effect, strengthening the identification of the parts with the whole, and a better understanding of how the various elements of the organizational system fit together. At a more practical level, the Web makes possible the instantaneous exchange and monitoring of information from parts of the organization that may be spread all over the world. The possibility of combining image, text and sound is leading businesses to use the Web for internal coordination and control, in addition to other forms of electronic and non-electronic communication.

Data for decisions: Business can obtain from the Web an enormous amount of data for planning and decision making. For example, by controlling the traffic in their Web pages, they can obtain precious information about their own actual and potential customers, in order to learn and keep track of their changing needs, interests, concerns and levels of satisfaction and utilization.

3. Using the MIDIA_C Framework

The framework opens significant directions for research. There is no body of research yet to explain what factors lead different businesses to make different types of use of the Web, or the degree to which they are able to be effective and efficient in this utilization. For example, type and level of Web use, as well as extent of success in utilization, may be affected by characteristics of the organization (e.g., technological and financial resources, creativity, type of products or services), the industry (e.g., competitors, suppliers, consumers) and the technology (e.g., available Web authoring, browsing and search tools, security, access). Success may also be linked to implementation factors, such as the content and format of home pages, as well as ease of access (traffic handling capabilities, links from other strategically related pages, being indexed through the major search tools). There are already some "principles of good practice" being offered in the trade literature, but they need to be substantiated, specified and expanded through empirical studies. Also needed are studies that investigate the interactions between different types of Web use: for example, there are indications that multipurpose pages generate more "traffic" than single purpose ones. Last but not least, we need to develop adequate ways of measuring performance in each of the different types of Web uses.

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