

Web-based Sales: Defining the Cognitive Buyer

by Paul Zellweger, ArborWay Electronic Publishing Inc., USA*

Abstract

This paper explores the forces contributing to the transformation of buyer behavior when buyers use the World Wide Web for making purchase decisions. These forces include trends in the marketplace, where products are becoming more complex and plentiful, as well as the emergence of Web-based marketing and functions. The interactive nature of electronic sales, like Web-based marketing, makes this type of sales significantly different from its traditional counterparts. Sales on the Web shape buyers' perceptions about products, the decision making process, and the marketplace, resulting in buyer behavior this paper defines as the Cognitive Buyer. Technical developments like secured transactions and improved access methods like catalog content menus will address buyers' uncertainties and provide marketers with a better understanding of their buyers. As this new sales channel develops it will create a demand for itself by using knowledge systems to organize information.

"Focusing on mere information has led to overload...rather than the search for meaningful new patterns of knowledge"
Hazel Henderson

Overview

Buyer enthusiasm for direct sales on the World Wide Web lags far behind industry expectations and the questions being raised all seem to miss a larger transformation taking place. The combination of changes in the marketplace and the distinctive nature of the electronic sales channel all contribute to the emergence of a new and distinctive buyer behavior that this paper identifies as the Cognitive Buyer. The Cognitive Buyer relies heavily on rational problem solving and abstract reasoning and differs from traditional buyer behavior by intentionally engaging technology in the decision-making process.

This paper explores how this technology is shaping buyer behavior in order to understand why sales on the Web have been so disappointing.

Technology is employed in all aspects of product development and marketing, and most recently in attempts to automate sales. Bloch, Pigneur, and Segev (1996) present a fundamental business rationale for using electronic commerce derived from its potential capabilities to improve, transform, or refine current products, process or business models. Hoffman, Novak, and Chatterjee (1996) identify six different commercial opportunities on the Web by function, including the online store or electronic product catalog, the primary focus of this paper.

Sales applications on the Web have evolved in a very short time and progressed through easily identified stages of development. First, there were flat product brochures. Next, came the current offering of interactive electronic catalogs that enable buyers to search databases of products to find what they need. Yet, only a handful of success stories exist and, most recently, IBM closed its electronic mall, and Nets Inc. in Cambridge, Massachusetts declared bankruptcy. Cronin (1997) argues that the demand for online sales on the Web can only come from customers, competitors, or universally accepted distribution channels.

* Paul Zellweger

(zellweger@arborway.com) works for ArborWay Electronic Publishing Inc. at Cambridge, Massachusetts. The author wishes to thank Linda Jacobson, Senior Associate at Mercer Management Consulting in Lexington, Massachusetts for her suggestions and comments.

Transformations In the Marketplace and In Marketing

To understand the influences affecting buyer behavior on the Web one only has to direct his or her attention to two major changes occurring in the marketplace. First, technology has dramatically reduced the amount of time it takes to develop a new product and bring it to market. This has set off increased competition and produced an extraordinary array of product choices in both the consumer and business markets. Aggressive product marketing and rapid innovation make these markets very dynamic and fast-paced. Second, the increased use of computer technology in the products themselves has expanded product capabilities and made products more feature-rich and complex. The overwhelming amount of detailed product information is thrust directly on the buyer and forces buyers to take a more deliberate and studied approach when making a purchase.

Traditional marketing and media channels also are feeling the impact of changes in the marketplace and are losing their effectiveness to reach individual consumers. Rayport and Sivoka (1995) describe this market condition in more basic terms as an "overcapacity, in which demand, not supply is scarce". The Web is a logical alternative to traditional marketing because it is technically capable of addressing these issues, including the mounting flow of detailed information and reaching out to individuals. However, aspects of its interactive capabilities are not fully utilized and customers are, for the most part, anonymous and freely able to move from one site to another. Overall, Web marketing has yet to identify issues related to creating demand, other than aspects of personalization where promotional materials respond directly to individual buyer's interests.

Hoffman and Novak (1996) argue that marketing on the Web represents a radical departure from the traditional marketing. Traditional mass marketing chan-

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nels broadcast information from a single source to a mass audience. The relationship represents a one-to-many communications model where the entire audience is treated the same way. On the Web, access is interactive and information flows between buyer and seller. This represents a far more complex set of relationships and a different communications model, many-to-many, that includes the means to tailor a response to an individual need. The primary challenge for Web marketers is to find new ways to develop interactive capabilities that can broaden its appeal as a mass marketing channel.

Up to now, the merger of marketing and technology on the Web has produced its own unique form of personalization based on a buyer's navigation activities or information requests. Marketers use this information to sense or anticipate buyer behavior and respond to it by presenting ads and promotional materials directly related to the buyer's interest. Conceptually, the process creates a one-to-one communication between a buyer and a seller. However, a central problem with personalization on the Web, and Web-based marketing in general, is that neither of these activities generates a sufficient demand for sales.

Forces Transforming Buyer Behavior

To observe how market forces have initiated changes in buyer behavior, simply look at the PC hardware and software market in the last ten years. This particular market has always moved fast and provided buyers with a wide selection of competing products. Its products are also somewhat different as they are technically-based and complex, and not marketed exclusively through consumer or business market channels.

As more buyers overlap the traditional consumer and business markets product marketing and distribution has also changed. Large warehouse stores like Costco and BJ's target sophisticated technology products to both small businesses

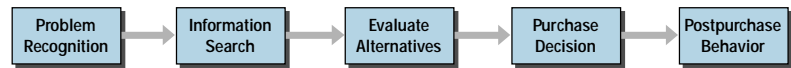


Figure 1
Buyer Decision Process

and consumers. Today it is not unusual to see a software product or, even an Intel microprocessor, advertised on television or in popular magazines.

In other, more dramatic ways the frequent rate of innovation in the PC market has prepared the buyer to anticipate product change. Buyers now accept the fact that any product they buy for their computer today may be surpassed by something newer, better, or cheaper tomorrow. This type of innovation not only shortens the expected lifespan of a product; it also compels buyers to consider market trends before making a purchase. In this environment, product information, particularly current and scheduled features, takes on a more direct role in creating demand for a product or avoiding purchase hesitation.

The buyer's experience in the PC marketplace closely foreshadows the speed and structure of buyer behavior on the Web. In a traditional buyer decision process (Kotler 1988), a consumer progresses in a linear fashion from a Problem Recognition state to an endpoint, the Postpurchase state (see Figure 1). Yet, in a very dynamic

market, like the PC market, the decision process is less predictable and often more erratic. Buyers can come across pertinent information when doing other things and new product information is constantly being released. This includes innovative ways of doing things or new perspectives on product usage that cause a buyer to reconsider his or her original problem. Each time this happens Problem Recognition is revisited and the overall effect transforms the sequence of events in the decision process (see Figure 2).

Adding sales capabilities to the Web challenges not only the traditional ways of analyzing consumer buyer behavior; it also challenges the structure and substance of the consumer market. For instance, Web-based technologies like intelligent shopping agents threaten to turn every product into a commodity simply by automating a search that can find the cheapest price. This type of automation, along with its general purpose search engines, sets this market apart from all others. No other market gives the buyer as much freedom and control, or can deliver as many resources that can be applied to the purchase decision.

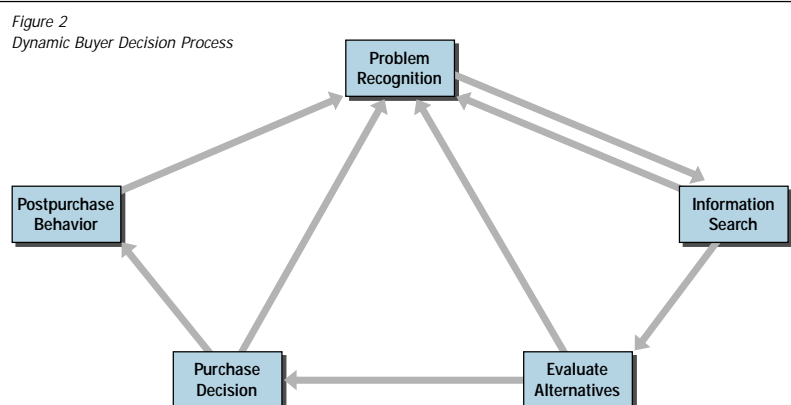


Figure 2
Dynamic Buyer Decision Process

The Emergence of the Cognitive Buyer

Web-based sales will have more impact in shaping buyer behavior than any other sales channel. Yet, little attention has been directed towards the buyer, in large part due to the short time online sales have been available. To ignore the buyer at this point would be a grave mistake, because the discussion will remain, as it has been almost from the start, unbalanced and limited to buyer benefits (convenience, searching capabilities, price comparisons, control, and so on). By not taking the buyer's perspective into account the discussion can only set false expectations and miss the more substantive issues facing this newly invented exchange between buyers and sellers. Not surprisingly then, buyers have been slow to respond to sales opportunities on the Web.

Meanwhile, many explanations have been proposed to overcome uncertainties about the Web's potential as a marketing and sales channel. Some, like the one presented by Regis McKenna (1995), direct attention to the interactive capabilities of the Web and how they can be used to draw customers into a marketing conversation. Other, more divergent ones, address issues related to the buyer's perceptions about the shopping experience or security. It should be noted that these points all have merit but somehow fail to acknowledge the larger transformation taking place, namely the influence of market forces and technology on buyer behavior.

Web-based marketing will shape buyers' perceptions of what constitutes a product. As products get more complex and difficult to use they require more pre- and post- sales support to help buyers understand what they need to know. The Web is ideally suited to deliver these services and respond to prospective buyers' concerns by answering questions and making this information available. Buyers will come to expect these services, particularly when it is so easy to inspect a product and its support on the Web and compare it with others.

References

- Bloch, Michael, Pigneur, Yves and Segev, Arie "On the Road of Electronic Commerce: a Business Value Framework, Gaining Competitive Advantage and Some Research Issues", Working Paper CITM-96-WP-1013, The Fisher Center for Information Technology and Management, UC Berkeley, March 1996 (URL:<http://www.hass.berkeley.edu>).*
- Cronin, Mary "To Sell or Not to Sell on the World Wide Web", Fortune, June 9, 1997 (URL: <http://fortune.com>).*
- Deighton, John "The Future of Interactive Marketing", Harvard Business Review, Nov.-Dec. 1996, pp. 4-16.*
- Foxall, Gordon and Goldsmith, Ronald E. "Consumer Psychology for Marketing", New York, Routledge, 1994, pp 27-29.*
- Henderson, Hazel "The Age of Light: beyond the Information Age", The Futurist, July-August, 1986.*
- Hoffman, Donna and Novak, Thomas "A New Marketing Paradigm for Electronic Commerce", Project 2000 Working Paper, February 19, 1996 (URL:<http://www.2000.ogsm.vanderbilt.edu>)*

The Web also can respond to the buyer's need for other types of information like news and analysis, and it can provide entertaining ways for learning about new things. This will attract the type of buyers who fit the Cognitive Buyer style profile. These buyers have directly benefited from previous breakthroughs and have developed a positive attitude towards technological and change. They are optimistic, open to change, and welcome new ways of doing things that save time or money or both.

Cognitive Buyers are well educated and have sophisticated tastes. When these buyers make personal purchases they are more likely to engage in a form of complex consumer behavior revealed by postmodern marketing research, behavior characterized by, among things, people who do not always remain true to their predicted type (Ogilvy 1990). These are buyers who are highly aware of their motivations and the motivations of others. In a rapidly changing world, the Cognitive Buyers will seek out products and services that will help them adapt to change.

Direct Sales on the Web

In essence, sales on the Web are as different from traditional sales as Web marketing is from traditional marketing. The Web's interactive capabilities, global presence, and abundance of "live" information are all unique. A prospective buyer has extraordinary access to a wide range of sales materials including pricing, support, policies, competitive analysis, and more, all in one place. These features give the buyer an unprecedented level of control in a sales setting where there is virtually no pressure to buy.

Sales professionals intuitively know that to make a sale, they have to reduce the buyer's perception of risk and uncertainty. In this respect electronic sales are no different from any other type of sales channel. In fact, the novelty and uniqueness of cyberspace can only add to an underlying concern that occurs to any buyer in

an unfamiliar context. Yet, there is something more fundamental that keeps buyers away—the perception of a non-secure environment.

Ironically, the credit card companies themselves seem to contribute to this fear by not sending a clear message that they are able to protect buyers from credit card fraud. In theory, direct sales on the Web make perfect sense, but on a practical level there is wide range of management problems, both internal and external, that make this new sales channel far more complex and different than buyers and sellers previously thought.

Even from a technical standpoint, the search engines, used to locate information on the Web, contribute to a collective uncertainty about the environment. No two search engines produce the same results. The problem is these systems are based on “word matching” methods, an information age technology whose limitations are well-known and easily recognized. Searches generate too much unnecessary information and they can simultaneously miss something important because the right keyword was not used.

Furthermore, most catalogs on the Web, no matter how big or small, assume the buyer knows what he or she wants and how he or she plans to find it. Smaller catalogs typically use a table of contents that links to a category of products that, in turn, is linked to a set of product pages. For the buyer, navigating from one page to another can be extremely frustrating, especially when pages contain irrelevant information.

With larger product catalogs the access problem only worsens, as database retrieval technologies provide little or no direct information about the products they fetch. When menu-based attribute/value searches and parametric search strategies are employed, the technology improves matters for buyers familiar with the content. Yet, a central problem with these

Hoffman, Donna, Novak, Thomas and Chatterjee, Patrali
 “Commercial Scenarios for the Web: Opportunities and Challenges”,
Journal of Computer-Mediated Communication, (1:3), December 1995.
 (URL:<http://207.201.120/jcmc/index.html>)

Kotler, Philip
 “Marketing Management, Analysis, Planning, Implementation, and Control”, New Jersey, Prentice Hall, 1988, p. 195.

McKenna, Regis
 “Real-Time Marketing”, *Harvard Business Review*,
 July-Aug. 1995, pp. 87-95.

Ogilvy, J. “This Postmodern Business”,
Marketing and Research Today,
 February 1990, pp. 4-21.

Rayport, Jeffrey and Svioka, John
 “Exploiting the Virtual Value Chain”,
Harvard Business Review,
 Nov.-Dec. 1995, pp 75-85.

Shannon, Claude and Weaver, Warren
 “The Mathematical Theory of Communication”,
 Champaign-Urbana, University of Illinois Press, 1949.

Zellweger, Paul “Method and Apparatus for an Information Management System Using An Open Hierarchical Data Structure”,
 Washington, DC, US Patent and Trademark Office,
 May 13, 1997, No. 5,630,125.

methods is that they do a poor job of encouraging a buyer to browse or, worse, they do not provide any browsing capabilities at all.

Responding to the Buyer's Needs

The Cognitive Buyer has an appetite for information and details, and Web technology can directly respond to this interest. When you consider information in its broadest terms — “that which reduces uncertainty” (Shannon and Weaver 1949) — this medium is ideally suited to helping buyers make purchasing decisions. But sellers should never underestimate a buyer's need for information or the extent of his or her caution. Since ancient times the notion of caveat emptor — let the buyer beware — has made it perfectly clear that it is the buyer who is responsible for gathering information and analyzing the risk.

As noted above, buyers rely on information to predict favorable outcomes and minimize risk. In a supermarket a buyer will squeeze a piece of fruit to make sure it is not over-ripe. Touch yields valuable information about the condition of the fruit. So does its appearance. The vendor, seeing the buyer with a piece of fruit in her hand, also may try to reassure her about its freshness by telling her when it arrived and where it came from. In an abstract context like an electronic market or a paper-based catalog, the medium can accomplish the same objective as the fruit vendor by carefully providing the right mix of information.

A buyer uses perceptual processes, like touch and fit, to get information. The perceptual processes themselves follow a clear developmental progression from visual-motor skills like vision and touch, to visual-auditory skills like vision and hearing, to visual-cognitive skills associated with reading and writing. Higher-level perceptual processes can substitute lower ones, and still communicate the essence of the original information but in a more filtered, abstract way. For instance, you can get an impression about a place by

looking at pictures or hearing a story without ever being there. And a combination of perceptual processes (hearing music, looking at film clips, and reading about it) goes a long way to enrich the information and strengthen the message.

A sale on the Web will never be able to compete with a direct sales experience. Shopping is an interpersonal experience created by a salesperson and the ability to inspect products by holding or touching them. Using a catalog to make a purchase represents a more abstract exchange that obviously does not have the same emotional pull. Yet the convenience and hassle-free aspects of Web-based sales are clearly benefits. For example, for a buyer who does not have the time to go to a local fruit stand to shop, a virtual fruit market on the Web would make perfect sense. That is, if the vendor understands how to market “freshness” on the Web. Obviously, this would include an inviting picture of the fruit and a description of it and how it would be shipped to the home. In addition, the seller would have to post an aggressive customer policy to address any doubt in the buyer’s mind, like “The Strongest Guarantee in the Business” used by the highly successful catalog fruit vendor, “Harry and David” (see www.harrydavid.com).

The Web’s interactive capability has the potential to approximate the dialogue one would hear between a buyer and seller. Therefore it is important to note that a good sales professional always acts on several assumptions that he or she knows will improve the likelihood of making a sale. This includes acknowledging differences among buyers and the need to answer questions and make suggestions. To achieve these goals sales professionals carefully listen to the buyer’s questions to identify individual needs and respond to questions in a careful and deliberate way. The question/answer exchange forms the basis for a dialogue that addresses uncertainties in the buyer’s mind and enables him or her to be more confident about the purchase decision.

Creating Demand by Reaching Out to the Buyer

As the Web organizes product information and delivers more customer support services, it creates a demand for itself. Prospective buyers currently turn to the Web to gather and compare product information. For these buyers the Web has a gestalt-like effect where its perception as a resource for sales materials exceeds the sum of its parts.

Companies are motivated to attract Cognitive Buyers to their sites on the Web because they are sophisticated buyers and potential product champions. By engaging these buyers in Web marketing, a company will enable a two-way knowledge transfer where these buyers can learn about its products and the company can learn from its customers.

McKenna (1996) describes aspects of this knowledge exchange as drawing the customers into a marketing conversation that helps the company develop relationship marketing, prepare markets for new products, and define future trends. Deighton (1996) points to two critical features of this conversation—the ability “to address an individual” and remember his or her response—as aspects of the exchange that are vital to transforming Web-based marketing into a good conversation with the customer.

While the Cognitive Buyer represents a specific type of buyer behavior, defined by his or her use of the Web, it is important to note that these buyers are not a homogeneous group. Differences among these buyers can be identified by differences in their knowledge or cognitive understanding of a particular product market and its products. For example, buyers of home VCRs or molecular biology restriction enzymes both face the daunting task of knowing the marketplace, the products in the market, and features associated with those products.

In personal sales exchanges, buyers turn to sales professionals to help them learn

about product benefits and understand product choices. For the Web to provide this type of information more sophisticated access methods would have to be used. Alternative methods, derived from knowledge based tools, are better able to help buyers understand product differences and engage buyers in a mutually beneficial way. However, traditional technologies such as artificial intelligence and expert systems that could help companies answer buyer’s questions and provide this type of information such far too costly and present too many risks.

Understanding the Cognitive Buyer

With the recent introduction of content menus to the Web (Zellweger 1997) companies will now be able to use their product catalog to engage their buyers in a highly efficient marketing conversation that helps both buyer and seller. Catalog content menus organize product access according to buyers’ needs, highlighting important product details, benefits, and functionality. Buyers use the catalog’s menu lists, like an index in the back of a book, to guide them to relevant products. The menu technology is derived from an underlying knowledge base that provides unlimited cross-reference capabilities. Buyers navigate through successive menu paths to locate answers to their questions and marketers record these paths to monitor buyer behavior and identify buyer preferences.

To identify differences among buyers, marketers first identify the cognitive associations buyers make to locate a product through a process called knowledge segmentation. This starts out with a general understanding of a specific marketplace like home electronics or molecular biology products and includes categories of products such as VCRs, tape players, and video cameras or cloning vectors, kits, and restriction enzymes. The next level or segment represents a knowledge of specific products within these product categories. And finally, the last segment or knowledge level represents a detailed un-

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Understanding of individual products, including benefits associated with specific features, attributes, and capabilities.

Knowledge segments help marketers acknowledge differences in buyers' understanding of their products and the market itself. These differences correspond to novice, intermediate, and expert product skill levels. The hierarchical ordering of segments helps a content expert design a succession of menus that correspond to the progression used by a salesman to help a buyer articulate needs, narrow the field, and make a purchase. Novices can select the most general topics and progress towards more specific details until a product matches their need (see Figure 3). Intermediates and experts have the option of using more direct routes according to their product skill level.

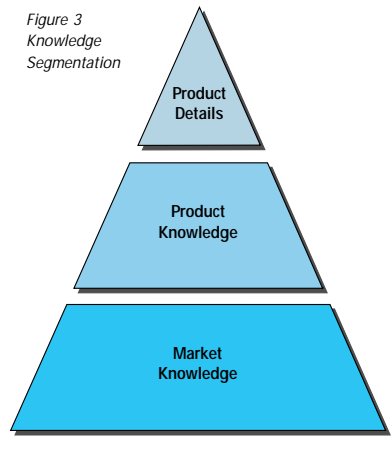
Marketers can also use a catalog content menu to conduct market research to identify differences within the same knowledge group. This includes monitoring changes in product usage and the buying patterns of special groups. For instance, the biotech industry is multidisciplinary and different scientific disciplines often use their own terms to identify the same thing. The marketer creates special menu paths for each discipline and then can monitor these menus to track each groups' usage.

By enabling access to the widest possible range of buyers, content menus establish yet another communications model, many-to-one (see Figure 4). In this model the seller provides multiple access paths to an individual buyer to assure the buyer that the seller understands his or her needs and can answer his or her questions. In more far reaching ways, the many-to-one communications model provides both a rationale and a framework for developing the Web's mass marketing capabilities.

Conclusion

The explosion of products and technology has created an exciting opportunity for automated sales on the World Wide

Figure 3
Knowledge
Segmentation



Web. Yet, Web-based sales is still in the early stages of demonstrating its potential as companies grapple with issues ranging from sales management, marketing, technology, and even the law. For the buyer, sales on the Web still present a major risk and uncertainty, due in large part to a lack of secured transactions.

This paper argues that sales on the Web represent a radical departure from traditional sales channels. On the Web, product marketing and sales merge and create a unique marketplace that challenges our traditional ways of analyzing buyer behavior. What emerges from these de-

velopments is a distinctive buyer behavior, identified as the Cognitive Buyer, that uses technology to automate aspects of the decision making process.

The Cognitive Buyer recognizes the Web as an information resource, as well as the means to purchase and support products. The medium's effect on the buyer creates a gestalt where the sum of its parts far exceeds its identity as a marketplace. As more product information and services become available on the Web, the Web will create a demand for itself as an alternative to traditional sales channels.

The Web's potential as a mass marketing channel is far more complex than earlier thought. When information age access methods are applied to database searches of product catalogs these methods restrict access and hide content from buyers. Yet, when companies use knowledgebase methods they create a new communications model, many-to-one, that enables buyers to browse and explore product catalogs. It also enables knowledge to flow in both directions, helping buyer and seller. This type of communication creates a dialogue that will pave the way for mass marketing on the Web by using knowledge to organize and mediate information.

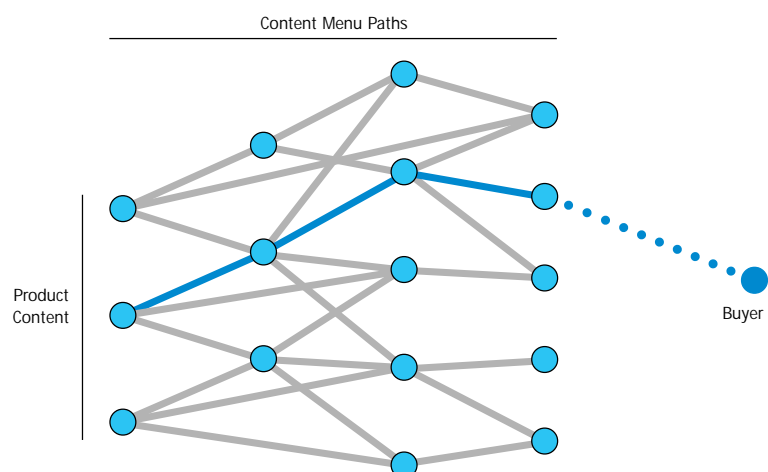


Figure 4
Many-to-One Communications Model

Future Research

This paper briefly looked at changes in the marketplace to understand how the purchase decision process has been transformed by Web technology. Other conceptual differences in buyer behavior involvement between the Cognitive Buyer and the consumer, identified by Foxall (1992) as the Cognitive consumer, exist and should be considered in any subsequent discussions about these buyers.

Buyer behavior on the Web also will be greatly influenced by other mass marketing channels like advertising on television. Companies currently use this advertising build a brand awareness and attract buyers to their Web sites. With the eventual integration of television broadcasting and Web access the impact on buyers may reveal even more varied types of buyer behavior and styles.

Directed research on access methods like content menus and buyer's navigation patterns will most likely provide the most fruitful way to study how these forces will influence buyer behavior and generate different styles. Perhaps the most exciting aspect about these research methods is that they are essentially part of larger marketing and sales systems that can provide empirical results in real time. These developments will expand marketing research capabilities to a larger number of smaller companies and may have as much an effect on the development of Web marketing and sales as the study of technology-enhanced buyer behavior.

State of the Art and Classification of Electronic Product Catalogues on CD-ROM

by Nora Koch, University of Munich, Germany*, and Luis Mandel, Research Institute of Applied Software Technology (FAST), Germany**.

Introduction

With the expansion of the services on the World Wide Web (WWW) and the distribution of information on CD-ROM, modern electronic support of advertising and sale of goods become a key factor in the marketing strategy of many companies. Information systems which focus their attention in multimedia presentation of products or services with functions that allow searching, selection, and ordering are called electronic product catalogues (EPCs).

EPCs offer the possibility to present basic product information with attractive multimedia techniques and to entertain the customer with features like games, animation, or videos. It is easier to inform the customer about all and every detail of products or services with an EPC. Electronic product catalogues are being tested as substitution of paper catalogues or as additional marketing and sales tool, with the additional effect of production training costs reduction. Today more than 10% of the Web-users shop on the WWW. In the United States, over 25 % of all business use the WWW to communicate with customers, potential customers, and other companies they do business with (SNIS 1996).

The technologies used to develop and deliver some multimedia systems like catalogues are still far from being easy and efficient and they show many weaknesses. Due to the significant degree of difficulty in developing, producing, and maintaining sophisticated multimedia software it is necessary to get the job done by large multi-disciplinary teams of programmers, graphic designers, media-experts, and quality control specialists.

We aspire to identify areas in need of research to resolve deficiencies in the current state of the art.

In this paper we will concentrate our attention only on one sort of information systems: EPCs on CD-ROM. All the same we are sure that most of our work will be useful for other information systems. In the first section a description of the EPCs production steps and an evaluation of electronic catalogues functions are made as well as a classification of catalogues is given. In the second section EPCs components are analysed, based on observations of a selection of EPCs on CD-ROM existing on the market. Finally in the last section new trends and some conclusions are delineated.

The State of the Art

Electronic Product Catalogues are computer controlled information systems with an important multimedia (especially visual) product presentation and navigation facilities. They are almost always equipped with a shopping bag administration feature.

EPCs are an inexpensive alternative to paper catalogues, but a high quality design is still related to elevated costs, because there are no appropriate production tools available. In the catalogue design and development marketing experts, graphic designers, and programmers are involved. First of all there is the catalogue provider who makes the decision to go into the market with such a multimedia presentation. Second, the catalogue developer designs and produces it by himself or requires the assistance of software and multimedia experts. And finally the users or end-users, who are those interested in the products or services that are being offered in the catalogue.