

WEB ASSESSMENT – A MODEL FOR THE EVALUATION AND THE ASSESSMENT OF SUCCESSFUL ELECTRONIC COMMERCE APPLICATIONS

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INTRODUCTION

One of the most profound consequences of the ongoing information revolution is its influence on how economic value is created and extracted. The new information infrastructure redefines the relationships between buyer, seller, and middleman, allowing new ways of accessing and tapping information, and price arrangements. Most importantly the information about a product or service may be separated from the product or service itself.

Consider how most books are sold today: most are sold in bookstores all around the country. When Jeff Bezos of Amazon.com set up his online bookstore in Seattle in 1995, he saw an opportunity to change the marketplace. He created a virtual bookstore, holding more than 2.5 million titles, about ten times as many as even the biggest bookstore in the physical world. For best-sellers, Amazon charges 40% below list price; for nearly everything else, at least a 10% applies. Result: sales of \$16 million last year, and a profound impact on the distribution channel of books.

But once someone has shown the way it is easy for competitors to set up their own database and start selling books. To maintain a competitive advantage Amazon relies on customer loyalty that goes beyond the thrill to find the best bargain in the market. It offers its readers a service: information about books (reviews from various sources: authors' interviews, literature magazines reviews, and readers reviews).

Amazon is a successful example of a firm taking full advantage of the emerging online marketplace (Sviokla and Rayport, 1994). But most of the early World Wide Web entrance strategies have been rather driven by the inclination of an early

adopters' strategy "it is participation that counts", than a sound business model for electronic commerce (EC). The hip surrounding the Internet led many to believe of seemingly unlimited opportunities on the Net. Later one found out that the technical hurdles remain high but that the main obstacle remains the lukewarm reception by consumers of the new medium.

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Thus many companies and institutions discovered with surprise, that their investments in the development of their Web sites did not always guarantee success. But what precisely made Amazon.com more successful than its competitors?

This paper proposes a framework to evaluate electronic commerce applications. The present article briefly outlines the model. The theoretical underpinning, additional material, and the paper in full length may be found on the Website of the Journal [1].

THE MODEL

TRANSACTION PHASES

A market transaction may be divided into three phases (e.g. Schmid, 1995), which are information, agreement, and settlement phase:

- ◆ *Information Phase:* In the information phase customers collect information on potential products and services.
- ◆ *Agreement Phase:* The phase serves to establish a contract, fixing details such as product specifications, payment, etc.
- ◆ *Settlement Phase:* The (physical/virtual) delivery of the product ordered will take place during this phase.

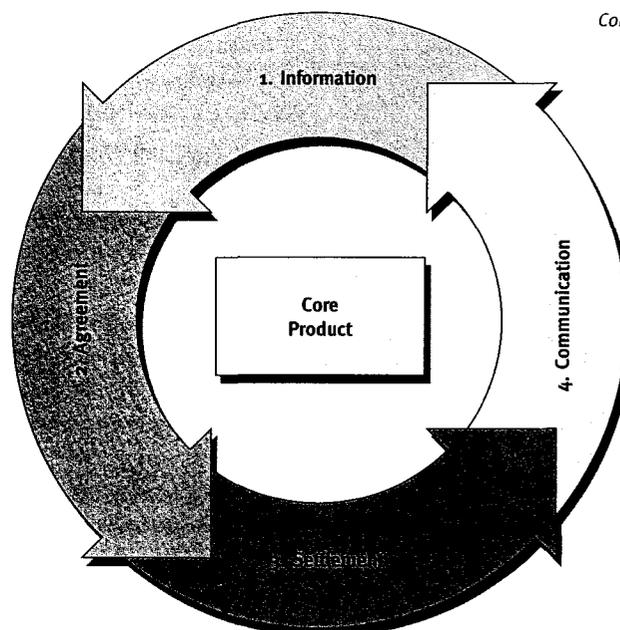


Figure 1
Continuous Transaction
Phase Model

0 Product / Service System	Flight from Zurich to New York with Swissair, or packaged Swissair offer, e.g. flight Geneva – Amsterdam – Zurich
1 External Bundling	Combination of onward flight with partner airline, hotel arrangement, theater tickets, etc.
2 Generic Services	Integration of payments, logistics systems, e.g. airline credit card, city check-in, etc.
3 Customer specific: Additional Services	Focused offers, e.g. youth fares, package holidays, business packages, adventure trips, etc.
4 Emotional Customer Experience	Youth club, forum for frequent flyers or leisure travelers focusing on special destinations, e.g. Big Apple Club

Table 1 Retail (airline) example of a Performance System

ing the following elements in order to successfully differentiate itself from the competition: i) core product/service, ii) a product system, iii) bundling, iv) external firms, v) price and quality arrangements, vi) delivery, vii) set-up and training, viii) continuous service agreements, ix) and an emotional customer experience. The evolving model of a performance system grouped in five modules is illustrated in Table 1.

In virtual environments, however, a further degree of interaction becomes a central issue. A reader that bought a book at Amazon.com is automatically a potential source for reviews. If many readers with similar tastes and preferences join her efforts, an online community of similarly minded people comes into existence. The notion of community lies at the heart of the Internet revolution (Armstrong and Hagel, 1996).

♦ **Community:** The concept of "Community" serves as essential tie between two transactions and links the prod-

uct more firmly to a potential customer. Virtual communities that set standards (e.g. Netiquette) will generate confidence and allow for the constitution of "Trusted Intermediaries".

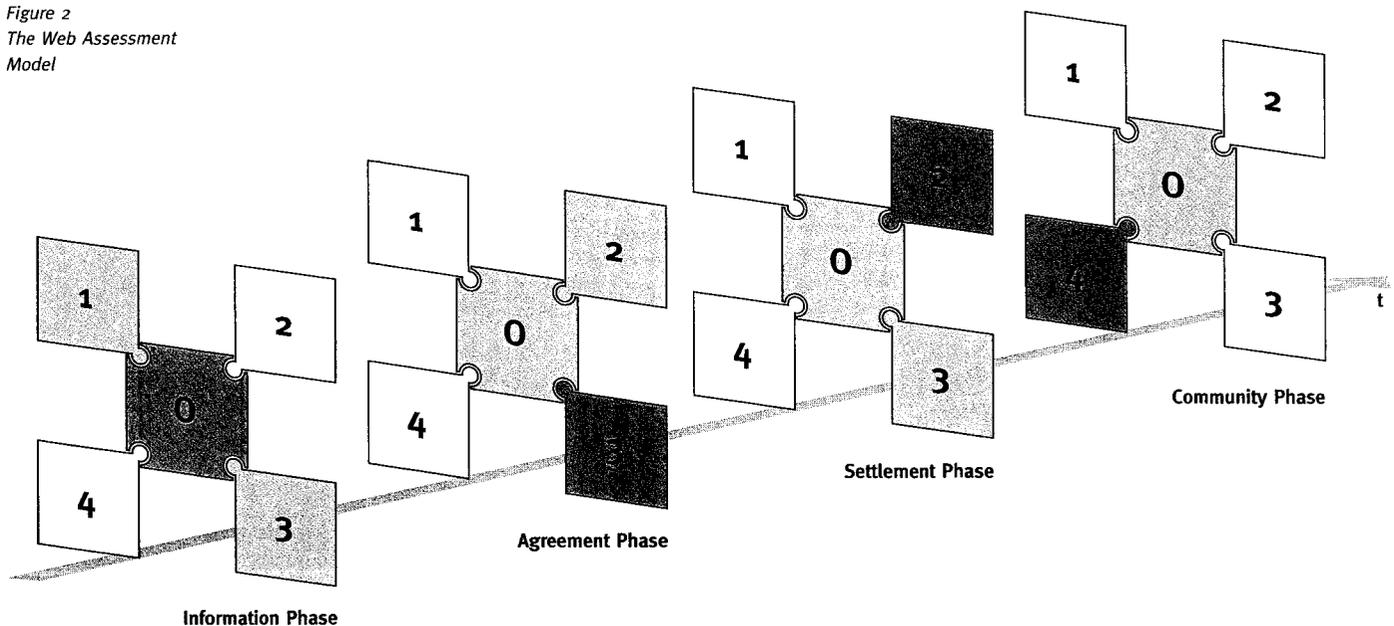
PERFORMANCE SYSTEM

In marketing the term performance marketing (Belz et al., 1991) defines the quest to offer a customer not just the product itself, but the endeavor to propose a specific solutions for individual customer segments, if not each customer itself. A firm needs to offer integrated solutions embrac-

WEB ASSESSMENT MODEL

Putting it all together produces a model to assess electronic commerce applications. The extended electronic markets transaction phases in conjunction with the product system adds up to the model depicted in Figure 2. In each transaction phase different modules are of central importance to create a seamless electronic commerce application covering the entire transaction process. The importance awarded to each modules at different stages of a transaction is highlighted by different gray shades. An individual module needs not to be utilized in every transaction phase. The important point is to provide a seamless integration of modules in each transaction phase and among the phases.

Figure 2 The Web Assessment Model



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Media inherent characteristics

▶ Hypermedia presentation	▶ Database interface (expert system)
▶ 24 hour access (time)	▶ Anonymity
▶ Ubiquity (spatial)	▶ Asynchronous communication
▶ Configuration possibility (interactivity)	▶ Benefits to the customer due to the use of the Internet

Table 2: Media inherent characteristics of the product / service system and derived criteria

In order not to overload the picture we concentrate on the media's inherent characteristics (see Figure 2). The criteria listed in the next section are specific to the Internet. For a detailed description of criteria and the appraisal range check the Website [1].

The model has been applied successfully to the Website of Swissair (<http://www.swissair.com>), the national airline of Switzerland and various other sites.

CONCLUDING REMARKS

The proposed model indicates a possible method for evaluating Web sites, making a comprehensive analysis of the usage of the new medium in a particular business case. This paper focuses on the external view regarding a business-to-customer relation. To further validate the proposed framework and to assess electronic commerce applications, the model needs to be

applied to subsequent retail sites, but even more to a business-to-business case, as this is expected to be the major growth area in electronic commerce in the years to come.

We aim at establishing a set of reference cases that will allow to collect more data and eventually build up a benchmarking database in order to derive best business practices. Furthermore, the model will be extended to accommodate the internal perspective and will be applied to company internal and cross-company information systems (intranets, extranets). In order to allow researchers and operators of electronic commerce applications to assess their site themselves, we have developed a Web Assessment software tool [1]. We invite you to make use of the tool.

[1] - Note

With this article the editorial team of *Electronic Markets* tests a new concept: In the printed version of the journal you find the discussions of the main findings of the research reported. The theoretical underpinning, additional material, and the paper in full length may be found on the Website of the Journal.

For the full paper go to http://www.electronicmarkets.com/em97_3wa.html, to assess a site with the Web Assessment tool go to <http://www.businessmedia.net/wa.html>.

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