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AMCIS 1999 Proceedings

Americas Conference on Information Systems (AMCIS)

December 1999

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Recommended Citation
von Dran, Gisela; Zhang, Ping; and Small, Ruth, "Quality Websites: An Application of the Kano Model to Website Design" (1999). *AMCIS 1999 Proceedings*. 314.
http://aisel.aisnet.org/amcis1999/314

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# Quality Websites:
# An Application of the Kano Model to Website Design

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## Abstract

In the emerging global electronic market, the creation of customer centered websites will become increasingly important. This paper uses Kano's Model of Quality to develop a conceptual framework for investigating features in the web environment that satisfy basic, performance, and excitement needs of potential customers. The researchers classify features commonly used in the web environment according to Kano's three quality dimensions for products and services. Plans to empirically test this conceptually based classification are forthcoming. Among the possible implications and contributions of this research are the differentiation of web design features that customers take for granted from those that add value in the performance of web specific tasks and those that generate delight, motivation, and loyalty of website users.

## Introduction

Numerous web design checklists (Nielsen; Keeker, 1997; Wilkinson, Bennet and Oliver) have been developed and an increasing number of awards are given for the best web page in different categories (Farrell, 1999) - yet it is still unclear what specific features in the web environment meet or exceed customer expectations. With the growing importance of electronic commerce, the need to identify and use web design features that will motivate customers to use and continue to use a website is essential for most Internet businesses. This study uses Kano's Model of Quality as a theoretical framework to identify and distinguish features according to levels of quality. Kano, a Japanese management consultant and researcher, defined three levels of customer expectations for product and service quality that must be met for businesses to succeed - (1) Expected, (2) Normal, and (3) Exciting. (1) Expected or basic quality is the minimum acceptable to the customers and encompasses those things that they take for granted and don't even think about. Presence is not noticed, but its absence will generate complaints. When buying a car, for example, one assumes it has a functioning steering wheel, working brake and lights etc. In terms of the level of customer service in a hotel, expected are clean towels and running hot and cold water. (2) Normal or performance quality expectations are consciously stated needs. They include features that are typically used in TV commercials or other advertisements and that are discussed as quality items in a typical conversation among average customers. Their presence is consciously noted, while their absence is felt as a disappointment or as a disadvantage. The size and price of a car, the length of the warranty, the rate for repairs are typical examples of normal quality. For our hotel service example, the responsiveness and attentiveness of service personnel when checking out creates either a sense of satisfaction or dissatisfaction - the less time a person has to wait in line and the more attention he/she receives, the more satisfied a guest will be. (3) Lastly, exciting quality examples are those features that delight customers and inspire loyalty. Since customers usually do not know the existence nor have a conscious need for the exciting quality, they will not miss this quality when it is not provided. Examples for cars may be side airbags, a built-in compass, a dashboard and steering wheel that imitate the cockpit of an airplane, while a service example in a hotel may be the provision of a basket of fruit, bottled water, shoe shining or ironing at no extra cost. The Kano model assumes that with time and imitation by others, exciting quality features turn into normal expectations, and normal quality features migrate towards basic expectations. (Revell, 1998)

## Background and Conceptual Framework

The application of motivational expectancy theories to constantly evolving technological contexts has many precedents. DeSanctis (1983) found that a user's positive attitudes toward information systems increased the actual use of the system. According to Burton, Chen, Grover, and Stewart (1993), a user of a newly implemented system will continuously evaluate the outcomes of the system use and subjectively assess the likelihood that his or her action will lead to desired outcomes. Markus and Keil (1994), however, assert that if the desired outcomes conflict with the factors that motivate the users, a system's features will not solve the problem, thus pointing to individual factors that influence high or low motivation of system use. According to Gill (1996), user satisfaction with a system can be enhanced through intrinsic motivational factors similar to those identified by Herzberg (1966) as motivators. Among them are the increased sense of user control, more task variety, less

task routine, and a capability to move task performance to higher levels. The Kano model of customer satisfaction as a function of need fulfillment refines Herzberg's identification of hygiene and motivator factors by dividing system outcomes, products or services, along three expected quality dimensions: expected, normal, and exciting.

## Application to the Web Environment

In the web environment, users are consumers. They browse or "surf" the Internet, access, retrieve, and share information, interact with others over the Internet, order products or trade stocks, and obtain entertainment. The web as a whole serves consumers' needs with these activities. A particular website delivers a special service. The quality of this service plays a similar role as the quality of services to consumers in other domains such as hospitals or hotels, or the customer service of a bookstore. Without face-to-face human interaction in the web environment, service adjustments based on verbal or nonverbal (such as body language) cues are impossible. Thus the design of the website is of even greater importance in delivering the service.

In order to have a systematic examination of features commonly used in website designs, we applied the Kano model to the web environment. Specifically, we are interested in examining what consumer quality need a particular feature can fulfill. The *expected* features, those that are taken for granted, should support expected needs of users on a website. Examples could be active links and legibility. *Normal* features are those that get the website "into the game" and thus contribute to the normal quality of the website. Links to related materials and support for different platforms are examples of normal features. *Exciting* features should make users delighted about the website, be things they usually do not expect from a website but excite when they are there. These features may generate user loyalty. An example of exciting features can be social feedback associated with using the website, such as customer's reputation building that occurs on eBay.com.

To make the web features comprehensible, we grouped them into commonly identified categories. When examining the quality nature of each feature, we discovered several methodological constraints. (1) A specific feature can be regarded differently depending on the purpose of a website. For example, "complete coverage of information" on a particular topic is a normal feature on an educational website. "Complete coverage of information" on a book can be, however, an exciting feature of an online bookstore website where one may unexpectedly find other books related to the topic, the interests of others who bought the book, other books by the same author, to name a few. (2) The quality nature of a particular feature is dependent on the characteristics of the user population. For example, a "normal" feature to elderly people can be considered an "expected" feature by younger people. (3). The evolution of a feature from "exciting" to "normal" and to "expected" can be much faster in the "web time" than in Kano's "time" of products or services.

The intent of this article is to construct a framework of examining web features without restriction to a particular kind of website or a particular population of users. Thus, the examples we use in the application of the Kano model are to be illustrative. The preliminary result of applying the Kano model to website design is depicted in Table 1. We list a maximum of two examples for each quality of each category.

## Implications for Research and Practice

As the use of the web increases, indicated by 10,000 new subscribers per day to AOL alone, the quality character of website features becomes crucial to ensure user satisfaction with services provided by websites. This paper lays out a framework for examining quality features of websites. The result has implications for both research in this area and practice in designing websites. An empirical study is planned to test the conceptual framework and to evaluate the quality features for different types of services provided by websites. For example, electronic-commerce websites have to meet different consumer needs than educational websites or entertainment websites.

When designing a website, designers need to be aware of the implications of the quality character of features. Because the existence of expected features is taken for granted, the lack of the expected features in a website will contribute to user dissatisfaction. Therefore, web designers want to ensure that all of these features are in place. The designers should also be aware that the existence of these features does not automatically generate user satisfaction with the website. Nor do they get the website into the game. The normal features facilitate task performance and will satisfy overtly stated needs of customers. The lack of these features will be noticed and disappoint users. The existence of them will make users feel that their perceived needs are fulfilled. Web designers want to make sure that these features are included in the website so that the website is regarded as relevant and useful. The exciting features are the ones that surprise the users, impress them, fulfill their latent needs, make them delighted, engender enthusiasm, and build their loyalty and motivation to the website. They are desirable for businesses that want to create a competitive strategic advantage.

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Table 1. Application of the Kano Model to Website Design

| Category | Expected Quality | Normal Quality | Exciting Quality |
|---|---|---|---|
| **Technical functionality** | • Loadable items<br>• Robustness | • Response or loading time<br>• Search function within a large site | • Customization to user preferences |
| **Navigation** | • Active links<br>• Consistent use of link colors | • Links to related materials/information<br>• Effective navigation aids | • Indicators of current locations within the site |
| **Appearance** | • Appropriate brightness of the screen<br>• Legibility | • Table of content<br>• Appropriate screen layout | • Eye catching items (images and title) on the homepage<br>• Use of humor |
| **Use and result** | • Absence of access restriction (login password, fees)<br>• Acceptable amount of time spent on completing the intended activity | • Appropriate amount of time on learning how to use the site<br>• Clear procedures for doing tasks on the site | • Social feedback associated with using the site<br>• Cognitive advancement resulting from using the site |
| **Accessibility** | • Stability of the information on the site<br>• Stability of the site (the site is not down often) | • Support different platforms | • Support physically challenged users |
| **Credibility** | • Reputation of the site owner<br>• Identification of site owner | • Availability of the owner for further information<br>• Referenced information | • External recognition of the site |
| **Organization and presentation of information content** | • No need to scroll to view the homepage<br>• No need to scroll to view content pages | • Logical structure of information within the website<br>• Consistent use of terms and of graphics | • Scannability to locate needed information<br>• Use of variety of media formats for different learning styles |
| **Characteristics of information content** | • Up-to-date information<br>• Accurate information | • Familiar terminology<br>• Relevant information | • Complete coverage of information<br>• Novelty and interesting information |