

A Brand Equity Measurement and Management System

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Abstract

A conceptual brand equity model has been developed in a previous issue of *Journal of Management Systems*. This paper provides empirical evidence of the brand equity model and illustrates the application of the model, which is founded on a customer-based approach to brand equity. The cause-and-effect model provides a comprehensive means of covering important branding topics, as well as a better understanding of the position of a brand in the minds of the customers. It is demonstrated how the model and measurement system may be a useful management tool for the improvement of customer-brand relationships. In this way, the model can help brand managers to set strategic directions and support their decisions with a view to creating stronger brands. Finally, practical implications are discussed.

Introduction

A strong brand is among the most valuable intangible assets for any company (Clark, 2002, p. 30; Keller, 2003, p. 11; Keller & Lehmann, 2003, p. 27). From this perspective, it is essential to have availability of a brand equity measurement and management system (Aaker & Joachimsthaler, 2000).

Recently, we have developed a new conceptual brand equity model, reported in *Journal of Management Systems*, No. 3, 2004, pp. 37-51 (Martensen & Grønholdt, 2004). The purpose of this paper is to empirically validate this new brand equity model and show how it can be applied as a tool in the brand management process.

When we talk of a brand's equity, we mean a brand's mental equity. Our approach to measuring brand equity is customer-based, concentrating on measures related to the consumer mindset; that is, the associations, evaluations and relationships customers have toward the brand. Dyson et al. (1996, p. 6) highlight the importance of this approach in writing that: " brands exist in the minds of their potential consumers and that what those consumers think of a particular brand determines the value it has to its owner. A brand's foundations are, therefore, composed of peoples' intangible mental associations about it. In placing a value on a brand, we are placing a value on the strength and resilience of those associations".

The brand equity model has been developed to fulfil four main requirements. First, the model should be logical, well integrated, and well founded. Further, the model should be based on state-of-the-art thinking within branding, from an academic as well as a practical point of view. Second, the model should be simple, yet sufficiently comprehensive to include the most important brand strength topics. Third, the model should be applicable to all possible types of brands and industries to ensure comparability of the measurements. Fourth, the model should be diagnostic and actionable, i.e. the model's estimates should provide relevant information to support brand management strategy and decisions.

The Customer-Based Brand Equity Model

The Customer-Based Brand Equity Model (Figure 1) links the final response variable, customer-brand relationships, to the drivers rational brand evaluations and emotional brand evaluations, which are in turn linked to product quality, service quality, price, brand promise, brand differentiation and brand trust and credibility. The model proposes two routes to creating brand equity; a rational route and an emotional route, as well as combinations of these routes.

We will not be discussing the individual variables and their relationships here (see Martensen & Grønholdt, 2004), but merely emphasise the dimensions that are placed under the three variables on the right side of the model:

- Rational evaluations: customer satisfaction and value
- Emotional brand evaluations (feelings): self-expressive benefits and social approval
- Customer-brand relationships: customer loyalty (retention), recommendation, attractiveness, engagement and attachment to the brand

Figure 1. The Customer-Based Brand Equity Model

Methodology and data

The conceptual model in Figure 1 is specified as a structural equation model with nine latent variables. Each of the latent variables is operationalised by a set of measurement variables, observed by survey questions to the consumers. The questions used to operationalise the model were developed based on literature studies and existing brand equity measurement systems. 65 questions were designed in a generic way, that is they were formulated in general terms, allowing them to be used across brands and companies. One of the methodology's central

elements is the use of a harmonised model and measurement system with generic questions. Hereby, the estimated results of the model are comparable across brands and companies.

To validate the Customer-Based Brand Equity Model, five surveys were conducted during the autumn of 2003 using four brands: Danske Bank (Danish Bank), the mortgage company Realkredit Danmark and two mobile phone providers, Nokia and Sony Ericsson. The data includes approximately 350 Internet interviews with customers of three of the brands (conducted by Zapera) as well as approximately 300 telephone interviews with customers of two of the brands (conducted by Vilstrup Univero). A questionnaire for each brand was designed consisting of the 65 generic questions plus screening and background questions. Respondents evaluated all questions on a 7-point scale. Most of the questions were formulated as statements, to which the respondent was asked to rate her/his level of agreement (from 'strongly disagree' to 'strongly agree').

Based on the data collected, the model in Figure 1 can be estimated by using the partial least squares (PLS) method (Fornell & Cha, 1994; Chin, 1998). Researchers in the areas of marketing, consumer research and quality regard PLS as state of the art in satisfaction and loyalty modelling (Johnson & Gustafsson, 2000, p. 104). PLS estimates the performance level for each of the nine latent variables and impact scores between the variables.

Initial data analyses

Several analyses have been carried out to select and assess the final items and provide methodological validation of the latent variables in the brand equity model.

The original item list contained 65 survey questions, of which 35 items were retained (2-6 items correspond to each of the nine latent variables), based on the results of several analyses repeatedly. The 35 selected survey questions are listed in the previous article (Martensen & Grønholdt, 2004, pp. 47-48, Appendix).

Analyses of internal consistency reliability were carried out. Cronbach's coefficient alpha was first calculated for the items of each latent variable. The items that did not significantly contribute to the reliability were eliminated for parsimony purpose, and some of the items were substituted. In all four studies, Cronbach's alpha ranged from 0.76-0.95 for each of the nine latent variables (average 0.87) based on the reduced items. These values are clearly higher than the generally recommended lower limit of 0.70 for Cronbach's alpha (Hair et al., 1998, p. 118; Robinson et al., 1991), indicating that all the items in each latent variable form a single, strongly cohesive and conceptual construct.

Furthermore, exploratory factor analyses were conducted to examine whether the items produced proposed factors and whether the individual items were loaded on their appropriate factors as hypothesised. A factor analysis with varimax rotation technique was conducted on all items, and the results supported the proposed nine-factor solution.

Finally, confirmatory factor analyses were conducted to assess the items of the latent variables more rigorously, based on the correlation matrix of the items. Specifically, the confirmatory factor analysis was used to detect the hypothesised uni-dimensionality of each construct, which the results supported.

These initial results, based on the five studies, provided evidence of reliability and construct validity.

Estimation of the model

This article only focuses on the results from the Internet interviews with 351 Danske Bank customers.

Figure 2 shows the estimated model for Danske Bank with performance indexes for each latent variable (these are shown in bold types inside the circles) and impact scores between the latent variables (these are shown by the arrows).

The performance index for a latent variable is estimated by a weighted average of scores from the corresponding measurement variables (questions), transformed from the original 7-point scale to a 0- to 100-point (poor-to-excellent) scale. E.g., differentiation has an estimated performance index of 52 as shown in Figure 2.

An impact score represents the effect of a change in the performance index of one point in a latent variable. E.g., a 1-point increase in the performance index for differentiation directly results in a 0.25 increase in the rational evaluations and in a 0.45 increase in the emotional evaluations' index as shown in Figure 2.

All the relationships between the latent variables shown in Figure 1 are tested, and only the significant relationships are shown in Figure 2.

The estimated model in Figure 2 shows that customer-brand relationships are created as an interactive result of rational and emotional evaluations. In this case, the rational route is stronger than the emotional route, which is presumably linked to the fact that decisions about choice of and relation to bank are predominantly rational. In other product areas, the emotional route may be the stronger one due to the fact that emotions drive most of our decisions. A performance index for emotional evaluations of 38 can be observed, which is low and coincidentally the lowest index in the estimated model. This is probably a result of the fact that customers rarely feel strong emotions toward their bank, that is, warm and strong feelings of self-expression and social approval.

It can also be observed that three of the model's determinants influence alone the rational evaluations, namely product quality, price and trust and credibility, which therefore are assessed based on the bank's functional attributes. However service quality, i.e. the bank staff's customer service, brand differentiation and brand promise influence both the rational and emotional evaluations.

Figure 2. The estimated Customer-Based Brand Equity Model

Validation of the model

By estimating the model in Figure 2, we have achieved a high level of explanatory power. The model is able to explain 82% of what drives customer-brand relationships (the coefficient of multiple determination $R^2 = 0.82$). For three of the other studies, the model also provides a very good explanatory power ($R^2 = 0.70, 0.76$ and 0.77), for the fifth study a good explanatory power ($R^2 = 0.61$), and the findings indicate good support for the developed model.

The obtained level of explanatory power is very high, compared to other customer analyses. In the pan European customer satisfaction index studies (ECSI/EPsi Rating), it is required that R^2 of customer satisfaction should be at least 0.65 (EPsi Rating, 2003, p. 21). Our experiences from the Danish ECSI pilot project (Martesen et al., 2000; Grønholdt et al., 2000) are that when it comes to customer loyalty, the explanatory power is significantly less; on average, R^2 was 0.47 for the 30 measured Danish companies. We feel that the much higher explanatory power in the estimation of our brand equity model is due to the incorporation of emotional elements, which is a new addition compared to traditional customer satisfaction and loyalty analyses.

Furthermore, the validation of the model shows that the proposed division between rational and emotional emotions was a good idea, since the impact from these two areas is quite different under certain conditions, and it is possible to study the effect of the six determinants not only on the final customer-brand relationships, but also on the intermediate emotions of a both rational and emotional nature. This could then provide useful knowledge of how the determinants influence the customers, which can be used in the planning of marketing communications.

Application of the model

Based on the impact scores in Figure 2, the total impact, i.e. the direct and indirect impacts, on customer-brand relationships may be calculated. These numbers are shown in Table 1.

**Table 1. Effect of a 1-point improvement in the determinants
on customer-brand relationships**

The highest total impact score is obtained for brand differentiation: a 1-point improvement in the differentiation performance index increases the performance index for customer-brand relationships by 0.36. Thus, we are dealing with a brand whose differentiation and uniqueness is very important for the customers, and this should probably be incorporated into the communication planning.

The estimated total impact scores (from Table 1) and performance indexes (from Figure 2) can be combined by categorising each of the determinants into an importance-performance map (Figure 3). Such a data presentation is appealing from a managerial viewpoint and useful in assessing the brand's mental equity and strategy development; therefore the map is called a brand strength map.

Each determinant may be placed in one of the four cells in the map. The lines separating the respective cells are based on the average impact scores and performance indexes, respectively. The four cells can be interpreted in managerially useful ways (Rust et al., 1996, pp. 265-267; Johnson, 1998, p. 23; Johnson & Gustafsson, 2000, p. 12-14, 142-145; Christopher et al., 2002, pp. 70-73).

**Figure 3. Impact versus performance in driving customer-brand relationships:
Strategic brand equity map**

In the upper-left cell performance is strong and impact is low. At best, this suggests maintaining the status quo. In some cases, there may be opportunities for transferring resources from the areas in this cell.

In the upper-right cell performance is strong and importance is high. This area presents competitive strengths, and therefore the company should continue the good work.

The lower-left cell represents an area where the company is not doing particularly well, but it does not matter. It is best to ignore these areas – at least they should have very low priority.

The lower-right cell represents the area of the greatest opportunity. This area is important, and the company is not doing well. The company should concentrate its effort here, and add resources to this area.

Figure 3 fairly clearly shows that the company should make an effort to differentiate itself more from other banks; the customers do not perceive Danske Bank as particularly unique and to a very large degree the bank does not offer advantages that other banks cannot. At the same time, differentiation is precisely the determinant with the strongest effect on the customers' relationships to Danske Bank.

In Figure 3, the determinant brand promise holds a position indicating that improvements should be made as a second priority. This would correspond well with the primary effort within differentiation, as both areas could be strengthened by an integrated effort and marketing communications.

Such a brand equity map provides the brand manager with knowledge about the concrete actions that will improve customer-brand relationships most advantageously.

Managerial implications

The benefit and practical implications of the Customer-Based Brand Equity Model and its measurement system are evident. For individual brands, the model and measurement system may be a useful management tool in three different ways:

- *Tracking brand performance* across the model's variables.
- *Benchmarking. Using a battery of similar questions, the model may be used consistently for different brands over some time. In this way, it represents a unique platform for benchmarking. Thus, the question is how does this brand perform in relation to other brands in the same industry, or brands in other industries?*
- *Support for brand management strategy development.* Which determinants should have low priority or high priority? What is the effect of various improvement activities for customer-brand relationships? In which areas should efforts be concentrated to improve the customer-brand relationships and, in turn, to create a stronger brand?

We intend to make the model even more action-oriented by enabling the expansion of the six determinants on the left side of the model. That is, we will be adding specific questions to the model's generic questions, which are particularly interesting for the individual brand and company. In this way, the generic measurements and specific measurements will be combined to achieve information on a strategic as well as a tactical level, i.e. action-oriented. The model and measurement system will thus become a tool to support brand management in strategy development as well as concrete decisions.

Summary

The Customer-Based Brand Equity Model has been developed based on literature studies and successful experiences from satisfaction and loyalty measurement and modelling studies. It is a

cause-and-effect model with the response variable customer-brand relationships. The estimations of the model in our four studies show that the model structure gives a very good explanation of customer-brand relationships, and our validation gives strong support for the developed model and the associated measurement system.

The model may be used both descriptively and normatively in support of management's decisions on actions for the improvement of the customer-brand relationships and thereby the brand's mental equity. Our example has demonstrated that the use of the model's results yields clear recommendations for areas of improvement.

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