

Measuring the Impact of a Company's Digital Strategy on Customer Based Brand Equity

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Abstract

The paper sets out to conceptualize a new construct, digital Identity; a recently developed key performance indicator used by practitioners and designed to assess a firm's multichannel marketing strategy in terms of web access, mobile device access and social network presence. The second objective is to empirically validate the construct and its dimensions and to examine its nomological validity by exploring its influence on well established brand equity measures. Using a sample of the top 85 companies on the Spanish stock exchange IBEX, the study explores the relationship between the degree of development of a company's multichannel marketing strategy and its level of customer based brand equity.

Key Words:

Digital Strategy, Multichannel Marketing, Accessibility, Brand Equity, Sentiment Analysis.

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Introduction

Technology is transforming the way customers interact with brands due to an ever increasing availability of communication devices: PCs, tablets and smart phones as well as communication platforms: web pages, social networks, apps, question and answer databases, and blogging forums (Comscore WhitePaper, 2013; Google & Ipsos Media CT, 2013; Keller, 2010; Varadarajan et al., 2010; Winer, 2009). This in turn has given rise to the emergence of the multichannel shopper, defined here as the customer who uses different channels at different stages of their decision making and shopping cycles. More and more the multichannel shopper is turning to smart connected devices (including desktop PC, portable PC, smart phone and tablet), to interface with companies along their customer journey. Moreover, smart phones accounted for 60% of the smart connected devices market, in 2012 and among all EU5 countries have 50%+ penetration (Google & Ipsos Media CT, 2013). As regards tablets, the statistics web site emarketer.com estimated EU5 penetration to be 26% in 2013 and projects it to grow to 44% by 2018.

The users of these mobile devices are also frequent users of social networks with 86% claiming to use them and 58% of them doing so at least once a day (98 Comscore WhitePaper 2013). The ubiquity of smart connected devices provides fertile territory for the growth of the multichannel shopper. In 2013, 80% of Spanish smart phone users indicated that they had used their mobile device to research products and services while 25% say they had used their device to purchase a product or service (Google & Ipsos Media CT, 2013). A report prepared by Comscore, Spain Digital Future in Focus 2013, indicates that 63% of Spanish smart phone users make at least 1 mobile purchase per month.

Given the likelihood that people shop different channels and are exposed to different media, companies need use multiple channels in order to create adequate reach and coverage (Keller, 2010). Multichannel marketing is defined as marketing strategies for serving customers who use more than one channel when interacting with an organization (Rangaswamy & Van Bruggen, 2005).

From a company perspective, the practice of multichannel marketing is of interest as it enables a firm to interact with customers across channels during the different stages of the consumer decision process (information search and browsing; purchasing; and post purchase and service stage). Companies that choose to develop a multichannel strategy are faced with many challenges such as that of understanding consumer behavior (Hennig-Thurau et al., 2010; Konuş, Verhoef, & Neslin, 2008; Venkatesan, Kumar, & Ravishanker, 2007), coordinating channel strategies (Keller, 2010; Varadarajan et al., 2010). The numerous practitioner reports on multichannel marketing also highlight its relevance in today's business world (Comscore WhitePaper, 2013; Nielsen, 2014; Price Waterhouse Coopers, 2011). Furthermore, one of the key challenges as expressed by Neslin (2006) is evaluating which channels to employ, calculating the contribution of each existing channel as well as that of each new channel and understanding what channels synergize best with others. Keller calls for the need for a more explicit understanding of the role of different channel and communication options and how they complement and substitute for each other (Keller, 2010). In an attempt to contribute to literature, the present paper sets out to

conceptualize a new construct which we term Digital Identity; this is a recently developed key performance indicator used by practitioners and designed to assess a firm's multichannel marketing strategy in terms of web access, mobile device access and social network presence. The second objective is to empirically validate the construct and its dimensions and to examine its nomological validity by exploring its influence on well established brand equity measures. We analyze data from the top 85 companies on the Spanish stock exchange, IBEX, which span multiple categories: finance and real estate; technology and telecommunications, consumer goods, consumer services, basic materials, industrial and construction, oil and energy. This will be our contribution.

The rest of the article is structured as follows. Firstly, we will give a short introduction to multichannel marketing strategy and highlight the main studies which link it to improved brand equity performance. Secondly, we will provide the conceptual framework for our measurement scale of digital identity. Next the authors will discuss the evolution of metrics used to measure customer based brand equity. This section will end with an introduction to sentiment analysis and a discussion of why it is an appropriate means for measuring customer based brand equity. In the next section we will present the research methodology used, followed by a presentation and discussion of our preliminary results. Lastly we will discuss research limitations, avenues for further research and implications for management.

Conceptual Framework and Related Literature

An Introduction to Multichannel Marketing

The plethora of channel choices available today has changed the way consumers communicate with each other and with companies. The same is true for how consumers gather and exchange information about products and how they obtain and consume them (Hennig-Thurau et al., 2010). Studies show that multichannel shopping is on the rise. According to a PwC study 86% of global respondents shop across two or more channels. The study was based on a projectable sample of consumers from around the globe (Price Waterhouse Coopers, 2011).

Moreover, research shows that a multichannel shopping environment positively affects the key dimensions of brand equity. Wallace et al (2004) found that MC usage to be associated with higher perceptions of the firms' offerings, which in turn are associated with higher customer satisfaction and loyalty (Wallace, Giese, & Johnson, 2004). Customers who shop across multiple transaction channels provide higher revenues, higher share of wallet, have higher past customer value, and have a higher likelihood of being active than other customers. (Kumar & Venkatesan, 2005).

Furthermore, multichannel marketing has been shown to have a positive impact the different aspects of brand equity such as customer perception of quality, brand loyalty and satisfaction (Wallace et al., 2004); customer behavior in terms of frequency and volume of purchases (Rangaswamy, 2005), as well as financial dimensions in terms of increased sales (Kushwaha and Shankar, 2005).

This paper sets out to conceptualize a metric for measuring the basic elements of a company's digital strategy necessary to build an online presence. Few organizations approach measurement from a horizontal viewpoint across multiple channels to understand the costs and benefits of supporting multiple channels in the overall marketing mix (Weinberg, Parise, & Guinan, 2007). While no published validated measurement scale of digital strategy existed at the time of the study, we based our measurement scale on the dimensions used in Financial Times Bowen Craggs Index of corporate online effectiveness: web access, mobile device access and social network presence (FT Bowen Craggs Index, 2014). The index is a once-a-year snapshot of how well the world's largest companies by market capitalization use their websites, mobile and social channels, and apps to support their business objectives. The authors worked with an external digital strategy consulting firm, FactoriaInteractiva, which had developed a measurement scale using the same dimensions as the FT Bowen Craggs Index. The external firm had conducted several industry specific studies using their measurement scale and presented the results to the participating companies. A collaborative agreement was signed between the European University and FactoriaInteractiva to test and validate their Digital Identity scale. This paper sets out to describe that process.

Corporate Website

Numerous authors and industry experts have commented on the importance of the corporate web site in the context of brand equity (Constantinides, 2004; Constantinides & Fountain, 2008; Gardner, 2011; Garrett, 2010; Lorenzo, Constantinides, & Gómez-Borja, 2009; Palmer, 2002; Potts & Jones, 2011; Wirtz, Schilke, & Ullrich, 2010). The customer experience from visiting a corporate website has been recognized as one of the most important factors for online success (Lorenzo et al., 2009). The primary means of delivering the Web experience is the corporate Web site. Sites delivering superb Web experience are designed in a way not only addressing the client's product needs and expectations but also assisting the customers through the steps of the buying process. Web sites must be seen therefore as vital instruments of customer service and persuasion rather than simply as online brochures or catalogues of the company's products (Lorenzo et al., 2009). Indeed Jeff Bezos, founder and CEO of Amazon.com, one of the Internet's leading online retailers, notes that creating a compelling online experience for cyber customers is *the* key to competitive advantage on the Internet (Weber, 1999). Furthermore, the corporate web site was considered by our collaborator's, FactoriaInteractiva, to be the starting point of a firm's digital strategy. Finally, the Financial Times Bowen Craggs Index of Corporate Online Effectiveness considers a company's corporate website to be the core of its online presence and the most important communication channel a company owns. (FT Bowen Craggs Index, 2014). Therefore, the scale will consider the corporate website as the starting point for establishing an online presence.

The online experience is a major parameter of customer influence for both dot.com type companies as well as companies with a multichannel structure. Constantinides (2004), sought to explore the way in which technology influences online consumer behavior in his 2004 work in which he defines the Web experience as a combination of online functionality, information, emotions, cues, stimuli, and products/services, going well

beyond the bounds of the traditional 4Ps marketing mix. He extends Kotler's well accepted response model of buying behavior which provides a framework for examining the relationship between marketing stimuli and consumer response,(Kotler & Armstrong, 2001)by adding the Web experience as a controllable element by which companies can influence the decision making process of the multichannel consumer..

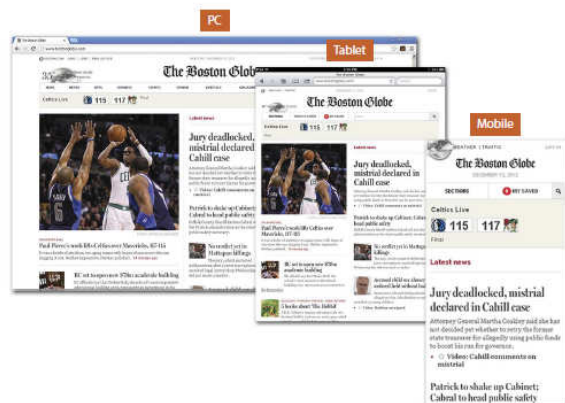
Usability is one of the 5 dimensions of Web Experience. Some authors suggest that usability reflects the perceived ease and usefulness for the navigation through the Internet while other studies found that usability is a very important attribute for achieving desirable internal and behavioral responses (Lorenzo et al., 2009). Therefore the proposed scale will contemplate issues of usability, namely accessibility. In order for a company to benefit from its corporate website, the website must be accessible in terms of the browser access and device access. That is to say, the page must load and function correctly using any of the major commercial browsers: Explorer, Chrome, Mozilla Firefox, and Safari.

Mobile Devices

The second element of the Financial Times Bowen Craggs Index of Corporate Online Effectiveness refers to mobile devices. Mobile communication devices such as smart phones and tablets are the main drivers of internet traffic. It is also relevant to note that both smart phones and tablet usage have outpaced pc growth in recent years. Smart phone penetration has grown in Spain from 33% in 2011 to 55% in 2013 (Google & Ipsos Media CT, 2013). Tablet growth is even faster than smart phone.

As more and more users interface with companies via their mobile devices to obtain product information, make purchases or seek customer service, the usability of a company's mobile web site has gained attention from academics and practitioners alike (Chang & Huang, 2015; M. Kim & Shin, 2014; Teh, Ahmed, Cheong, Chan, & Yap, 2013). One of the common usability themes highlighted in the aforementioned studies on mobile devices, refers to difficulty in seeing detailed product and service information. This technology known as Responsive Web Design enables a company to maintain the brand experience and ease of use as the customer or prospect transitions from smart phone, to tablet to lap top and desk top computer as they interface with the company. (see example in Illustration 1).

Figure 3 Responsive Design Right-Sizes The Boston Globe's Display



Source: The Boston Globe website
85982

Source: Forrester Research, Inc.

Example of Responsive Web Design 1

Therefore, in our measurement scale of digital strategy, we will consider whether a company corporate web site uses Responsive Web Design for mobile devices: smart phone and tablet.

Social Media

The importance of social media in the design of a company's digital strategy is well documented (Constantinides & Fountain, 2008; de Maertelaere, Li, & Berens, 2012; Gloor, Krauss, Nann, Fischbach, & Schoder, 2009; Hennig-Thurau et al., 2010; Lobschat, Zinnbauer, Pallas, & Joachimsthaler, 2012; Potts & Jones, 2011; Wirtz et al., 2010). Despite the growing interest among marketers to use social media platforms to increase the connectivity between their brands and the customer (Martin and Todorov 2010) academia has not introduced a feasible metric which captures the incremental value resulting from the brand dialogues and interactions (Lobschat et al., 2012).

Consumers are now interacting with the company, the media, and, importantly, each other through social networking and other new media. This has given rise to a large number of new media, some of which are under the control of the marketing manager but many of which are not (Winer, 2009). For the purposes of our measurement scale of corporate digital strategy, we will only consider those social media networks controlled by the company.

Brand Equity Measurement

The most important assets of any business are intangible: its company name, brands, symbols, and slogans, and their underlying associations, perceived quality, name awareness, customer base, and proprietary resources such as patents, trademarks, and channel relationships. These assets, which comprise brand equity, are a primary source of

competitive advantage and future earnings(Aaker, 2009). Indicative of the importance of brand equity is the number of consulting firms which have developed their own proprietary brand equity indexes:Young and Rubicom's Brand Asset Valuator, Harrison Interactive'sEquiTrend, YouGov's Brand Index or Saatchi and Saatchi's Lovemark Index to name several.While there is no single consensus on how to define it or how to measure it, brand equity is generally accepted as the added value that a brand name and its associated logo confer on a product or service. In particular, Aaker (2009) distinguishes two basic approaches to measuring brand equity:customer based measurements (brand image, customer affinity and customer loyalty) and financially based measurements (projected revenue, return on investment).

However, with the advent of Web 2.0 it has been noted that web based consumer interaction is neglected in traditional brand equity measurement (Lobschat et al., 2012). Lobschat conceptualizes the construct of social currency which is intended to measure a brand's social value derived social interactions such as sharing information and opinions using Word-of-Mouth (WOM), Consumer-Generated Content and Brand Communities. In this sense, all brand related interactions have to be taken into account when trying to appraise a brand's strength (Lobschat et al., 2012).

The interactive nature of the aforementioned Web 2.0 tools highlight the growing importance of consumer generated value in brand equity measurement. Indeed, Christodoulides (2013) conceptualizes brand equity as a relational type of intangible asset that is co-created through an interaction between consumers and the brand. (Christodoulides & De Chernatony, 2010).Recent social transformations such as the emergence of the internet and, in particular, its user-generated version commonly called Web 2.0, have moved the practices of co-creation to the center of a firm's economic value (Ritzer & Jurgenson, 2010). Numerous studies examine the value added by user generated content. Ghose (2011) examines the impact of product reviews on product sales. Other studies examine new media's impact on customer relationship outcomes such as purchases (Hennig-Thurau et al., 2010).

New media applications can be categorized as follows(Constantinides & Fountain, 2008):

1. Blogs: Short for Web logs: online journals, the most known and fastest-growing category of Web 2.0 applications.
2. Social networks: applications allowing users to build personal websites accessible to other users for exchange of personal content and communication.
3. Content or Brand Communities: Websites organizing and sharing particular types of content such as video (YouTube), photos (Flicker), Information via bookmarking sites (digg.com)
4. Forums/bulletin boards: sites for exchanging ideas and information usually around special interests
5. Content aggregators: applications allowing users to fully customize the web content they wish to access.

In order to analyze the vast amount of data generated by these Web 2.0 tools, the techniques of opinion mining and sentiment analysis are gaining popularity. These techniques deal with the computational treatment of opinion, sentiment, and subjectivity in text (Pang & Lee, 2008). They enable researchers to mine and analyze unstructured communication and information from web sources (Pak & Paroubek, 2010). Sentiment classification centers on how to determine if a document, text, news feed, sentence, etc. is opinioned and if so whether it carries a positive or negative opinion.

Foundations of Statistical Natural Language Processing laid the groundwork for text classification using machine learning (Manning & Schütze, 1999). Other authors went on to experiment with various models of classifying and combining sentiment at word and sentence levels (S. Kim & Hovy, 2007). More recently, several surveys of opinion oriented information seeking systems have been written (Pang & Lee, 2008); (Liu & Zhang, 2012).

Much of the work done on sentiment polarity classification has been in the context of movie reviews (Pang & Lee, 2008). One study developed and tested a model based on data extracted from more than 3 million tweets that predicted box office revenues of movies in advance of their release. The model used the parameters of rate of tweets or volume of chatter; polarity of sentiment or valiance of opinion; and distribution or availability of the product in the market. The volume of tweets was the parameter which most significantly predicted revenues while the valiance of the tweets was found to add to the accuracy of the predictions once the movies had been released (Asur & Huberman, 2010). According to the authors, the forecasting power of social media is derived from the collective wisdom that it represents.

In the second phase of the current study consists of validating the Digital Identity scale by contrasting its results with consumer based brand equity indicators. The techniques of data mining and sentiment analysis will be used to collect this customer generated data.

Methodology

Scale Development

The initial dimensions of the Digital Identity scale were developed by the external consulting firm, Factoria Interactiva, by conducting an exploratory study using semi structured interviews with a panel of 10 experts in the fields of branding, digital media, and digital publicity. The panelists were asked to consider the following questions:

1. What are the main channels of communication necessary to build an online presence?
2. What are the most important issues regarding these online communication channels?

Analysis of the interviews suggests that the online communication consists of 3 dimensions:

- corporate web site
- mobile
- social channels.

Corporate Website Accessibility

Web sites provide the key interface for consumer use of the Internet (Palmer, 2002). Most of our panelists agreed that a company's web page is the starting point for building its online presence. We therefore use a company's web page HOME and its first level of navigation as the axis of our construct. This is where a company should locate all of its information of interest, links to its social networks, applications for different operating systems, blogs, and online store.

As regards usability issues for the web page, the main issue discussed was the accessibility of the page from different web browsers: Explorer, Chrome, Mozilla and Safari. The web page should load correctly without errors from each of the browsers. Failure to do so can interfere with the user's ability to interface correctly with it and thus result in his potentially exiting the page prematurely. Therefore, the proposed scale measures the accessibility of a company's web page from the four major web browsers: Explorer, Chrome, Firefox and Safari.

- Does the web page load correctly and enable proper navigation when accessed from Windows explorer? (EXPLORER)
- Does the web page load correctly and enable proper navigation when accessed from Chrome? (CHROME)
- Does the web page load correctly and enable proper navigation when accessed from Firefox? (FIREFOX)
- Does the web page load correctly and enable proper navigation when accessed from Safari? (SAFARI)

Mobile Device Accessibility

Given the rising use of mobile devices to access web content, one of the main issues discussed by our panel of experts was the ability of a company web page to adapt its layout, content, and appearance across devices of varying sizes and capabilities such as smartphones and tablets in order to optimize user experience. Therefore, our scale considers if the web page recognizes the users' mobile devices: smart phone and tablet and adapts the web layout and content appropriately.

- Does the web page adapt its layout, content and appearance when viewed from a smart phone device (SMART PHONE)
- Does the web page adapt its layout, content and appearance when viewed from a tablet device (TABLET)

Social Media Visibility

In our scale to measure a company's digital strategy we will only consider the new media under the control of the marketing manager, namely company run social media sites, blogs, apps chats and online store. Our panelists agreed that a company's online presence is also a product of the different new media or Web 2.0 channels it chooses to use. We therefore assess which social media platforms are used by each company as well as their use of other new media communication channels such as blogs and apps. We also include the use of an online store in this category.

- Presence in different social media is displayed on HOME page or first level of navigation. (FACEBOOK, TWITTER, YOUTUBE, LINKEDIN, GOOGLE+)
- Company blogs are visibly displayed on HOME page or first level of navigation.(BLOGS)
- Company apps are visibly displayed on HOME page or first level of navigation.(APPS)
- Presence of online store is visible on HOME page or first level of navigation. (ONLINE STORE)

Findings and Results

We conducted a principal components analysis to reduce the data into correlated groups in order to understand them better and identify the variables which best explain the Digital Identity construct. This technique allows us to reduce a large group of variables with the security of knowing to which extent the resulting group explains the construct under study. Our preliminary results showed that our initial 14 variables could be reduced down to a group of 3 which together explained 76% of the variance.

Web site accessibility via different browsers did not contribute significantly to the explanation of the construct. Visibility in New Media was the factor that most significantly contributed to explain our construct. This first order dimension is formed by the following variables in order of significance: presence of link to corporate Twitter, Facebook, YouTube and Blog pages present on HOME or first level of navigation of corporate web page.

The second factor which most explains the Digital Identity construct is Adaptability to Mobile Devices, which includes the variables regarding whether the corporate web page adapts its layout, content and appearance when loaded in Smart Phone and Tablets.

Presence of an online shop was found to be the third first order variable to contribute to the construct of Digital Identity. Originally we had posited that presence of an online store would be part of the dimension of visibility in new media dimension.

The presence of APPs on the HOME or first level of navigation was not found to be significant.

These are only preliminary results and in order to test the stability of the scale we will run the analysis on the totality of our sample of 85 companies. This will enable us to assess the relationship among the 3 first order variables identified.

Predictive Validity of Scale as Measured through Sentiment Analysis

In the second phase of the study, the validity of the scale will be checked by contrasting it with customer based brand equity measures mined from customer data taken from new media sources not under the control of the company: aggregators, blogs, forums, news sites and social networks. The customer data will be collected using the technique of sentiment analysis. We use a commercially available application called Swotti, which is written and distributed by the Spanish company BuzzTrend. Sentiment scores will be calculated for each company and then contrasted with their digital identity score. The data will be analyzed both in terms of volume and valiance and then is classified according to the polarity of its sentiment as positive, negative or neutral.

We will assess the construct's predictive validity by examining the degree to which it predicts commonly accepted outcomes associated with strong brand equity such as customer satisfaction and positive word of mouth.

Online satisfaction as a dimension of customer based brand equity has traditionally been collected through exit surveys. Our goal is to employ sentiment analysis as a means of measuring the degree of satisfaction people feel towards a brand by mining what is being said about each brand in the new media sources listed above.

Using the Swotti program data was mined during 4 months from 1/1/2014 to 4/30/2014 from the above media types on all 85 companies in our multi category sample. A total of 74,387 feeds were collected. By assigning a numeric value on a scale of +10 to -10 to positive and negative adjectives, the feeds are placed on a continuum between these two polarities. Results will include the following parameters:

Distribution Media: what types of media people are using to talk about each company.

Data Volume: the number of feeds mined per company. This is an indicator of the popularity of each company.

Data Positivity: the number of positive sentiment feeds versus negative sentiment feeds.

Reputation: The sentiment score each company receives according to the ratio of positive to negative comments.

We posit that the companies with a high Digital Identity score will also score high on the Reputation indicator in the Swotti program. Preliminary results are due to be tabulated by the end of December 2014.

Discussion / Conclusions

The authors seek to show that the degree to which a company develops its multichannel marketing strategy will have an effect on its brand equity. To achieve this goal, this worksets out to define a metric for quantifying the level of development of a company's digital strategy. Drawing on conceptual framework which was based on a review of the extant literature, three main dimensions of Digital Identity were identified: corporate web site, mobile accessibility and visibility in social networks and other Web 2.0 media. These three dimensions were confirmed by an exploratory study based on semi structured interviews with industry experts. From these interview a total of 14 variables were determined to comprise the construct of Digital Identity. Further reduction found that Web site accessibility was not a key component of the Digital Identity construct, but mobile access via smart phones and tablets, and visibility in social networks were key components of a company's digital strategy. Validation of the scale by contrasting its results with the customer based equity variables mined from the new media sources will allow for a quantification of the importance of each element of the scale.

Limitations and Further Research

The validity of the scale has not been empirically tested. Since the sample includes 85 companies from over 5 different industries, one line of future research would be to use cluster analysis to group together the companies that share common digital identity characteristics and enable the creation of a taxonomy of digital strategies.

Managerial Implications

By having a straightforward and easy to use measurement scale to gauge the level of digital strategy development companies can more easily assess their current strategies in relation to their competition. A weighted measurement scale of this type can also provide input to help determine which channel choices make most sense for a company moving forward.

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