Examining designers' ability to predict new service success

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Abstract

We examine designers' ability to predict new service success. To do so, we compare customer and designer evaluations of new services. Our findings suggest that while designers are not good predictors of customers' satisfaction with new services in general, their ability to predict customer satisfaction improves when services are hedonic in nature –rather than utilitarian- or when they can be characterized as innovative. Designing services is a relatively new practice for designers, which may explain why they have difficulty predicting customers' satisfaction with new services. This in turn suggests, among other things, a need for design educators to enhance designers' capabilities in assessing market acceptance of new services.

Keywords: designers, service design, customer satisfaction, predicting success

1   Introduction

This article examines designers' ability to predict new service success. As noted by Kimbell [1], the past decade has seen not only the emergence of a profession of service designers, but also specifically of service design research. Recognition of service design as a profession and academic field of inquiry is evidenced by, for example, the increase in the number of articles and special issues on designing services in design journals; the establishment of *Touchpoint*, an international journal devoted to service design; and an increasing number of books dealing with this topic (e.g., [2], [3]). Within educational institutions there is also growing recognition of the importance to educating design students on designing services. However, the process seems to be slow as is evidenced by the relatively few number of academic design programs that focus specifically on designing services.

In this paper, we focus on customer satisfaction with new services. More specifically, we compare assessments of customer satisfaction by customers who have actually used services with assessments by designers. This comparison provides insight into designers' ability to predict new service success. In this paper the term *designers* refers to persons who hold primary responsibility for the aspects of a product or service that relate to the offering's aesthetic appeal (how it looks, sounds, feels and smells) and user interfaces (usability) [4] [5]. Hence, our definition does not include design engineers who are particularly focused on engineering principles, functional mechanisms and production issues [5].

In the next section, we provide the theoretical framework and hypotheses. Then, we will explain the method used to test the hypotheses, followed by discussions of results, conclusions, and recommendations.

2 Theoretical framework

2.1 Customer and designer evaluations

In this paper, we focus on customer satisfaction as measure of service success, as is commonly done in the service literature [6]. We compare customer evaluations of their own satisfaction with designer predictions of customer satisfaction. In the design and marketing literatures, two basic approaches for obtaining evaluations by customers are commonly used. First, studies have been based on examining how design (elements) influence potential customers' *pre-purchase* preferences (e.g. [7]; [8]). This type of research, which generally uses an experimental research design, can be useful in the development of new products or services as it predicts whether customers will find offerings attractive or not. However, marketing research suggests that customers' pre-purchase preferences are not necessarily good predictors of overt behavior (e.g. [9] [10] [11]). The second approach to obtain customer evaluations is to do so *post-purchase*. This can be done using surveys or interviews in which customers are asked to identify or rank factors influencing their purchase decisions (e.g., [12] [13]). This method suffers from the drawbacks of hindsight, particularly when dealing with one-off purchases, but may be more reliable when dealing with continual or repeated purchases. Considering that our research is on services, with which customers often establish longer-term relationships than with one-off purchases of products, we focus on customers who have actually bought and used a new service rather than potential customers.

We compare assessments by actual customers with those of design experts, that is, people who have in-depth design knowledge and design capabilities based on their formal training and practical experience. Existing research suggests that in art, film, and music, customer and expert evaluation criteria often differ or even conflict and that these two groups come to different conclusions about the quality of cultural products (on art, see e.g. [14]; on film, see e.g. [15]; and on music see e.g. [16]). In the field of design, similar results have been found. For example, Hsu, Chuang, and Chang [17] found that experienced designers and actual users differed substantially in their preference distribution patterns when evaluating telephones. On the other hand, in design practice, education and research, an in-depth understanding of customers and their needs and wishes is in general considered essential to design successful products and services (e.g., [18] [19] [20]). Service design seems to have an even stronger focus on users and is considered to be human-centered and participatory in nature [21].

Thus, to summarize, considering their human or user-centered approach, designers may to be able to predict customer satisfaction of new services introduced on the market. However, there is also empirical evidence, as discussed above, suggesting that designers and customers may not concur in their evaluations.

2.2 Evaluations of hedonic and utilitarian services

There is an increasing acknowledgement that customer behavior is not solely driven by functional and instrumental product or service attributes, but also, or even sometimes more so, by hedonic attributes that stimulate the senses and generate emotions and feelings of fun, enjoyment and pleasure (e.g. [22], [23] [24]).

While many products and services possess both utilitarian and hedonic elements, some are perceived as relatively more or less utilitarian or hedonic in nature [22] [25]. Services that are

primarily hedonic in nature have also been termed 'experience-centric services' and represent services that appeal to the emotions and senses [26]. Examples of service categories that rank high on the hedonic dimension are leisure or entertainment services such as those offered by vacation resorts, theatres or theme parks. Services viewed as primarily utilitarian are services whose consumption is likely to be more cognitively driven, instrumental and focused on accomplishing a utilitarian or practical task [22]. Examples are the services as offered by an automated teller machine or on-line banking [26].

Designers' ability to predict customer satisfaction is likely to differ depending on the degree to which a service is hedonic or utilitarian. Designers who are tasked with developing new services are often design professionals who have extended their work activities from designing products to designing services [27]. Designers' activities traditionally include aesthetics rather than engineering principles, functional mechanisms or production issues, which tend to be the province of engineers [5]. We thus hypothesize that designers, based on their area of expertise, are likely to do better at matching customer evaluations when services are more hedonic in nature.

H1: Designers' evaluations of customer satisfaction will match customers' evaluations better for more hedonic services than for less hedonic services.

In a similar vein, we expect that designers will do worse in terms of matching customers' evaluations the more utilitarian services are in nature. This is based on the notion that designers are generally not involved in developing the underlying functionality requirements and technical implementation of products, particularly not in technology-driven companies [28] [29], and as such may lack the capabilities to assess customer satisfaction in this field.

H2: Designers' evaluations of customer satisfaction will match customers' evaluations worse for more utilitarian services than for less utilitarian services.

2.3 Evaluations of innovative services

Designers are commonly viewed as creative people who give "tangible form to human ideas" (Peter Lawrence, cited in [30]), with the ultimate aim to create something that did not exist before. Creative professions in general attach great value to originality. In present-day visual arts, for example, innovation or originality has become the dominant performance metric determining whether art is valuable or not [31]. Also, in the field of design, creativity and originality are highly valued, as is demonstrated by the fact that these are generally important evaluation criteria for winning design prizes and awards [32] and for clients to select design consultancy firms [33]. Indeed, because design tends to be driven by a quest for originality and creativity, while management may be more driven by control and planning, conflicts often arise between these two functions [34].

Taking into account that creativity, or the wish and ability to create something new and valuable, seems to be characteristic of designers, we hypothesize that the more novel a service is, the more easily designers will be able to predict customer satisfaction.

H3: Designers' evaluations of customer satisfaction will match customers' evaluations better for more novel services than for less novel services.

3   Methodology

In 2010, managers from 80 companies (located in Northern Europe) that had recently launched a new service were surveyed. The sample was selected from a total of 141 participants in an ongoing longitudinal study and the criteria for inclusion were the launch of a new service within the last 12 months and sales within the same period. The managers were asked to answer questions about the nature and innovativeness of their new services. The surveys with managers were conducted over the phone. Shortly following the survey, the managers were asked to provide a list of customers that could be contacted with a short survey about the services. As an incentive to participate, the managers were offered a customized report about their customers' reactions including comparisons with customers of other participating companies. A total of 44 (54%) managers agreed to make lists of customers available. There was some reluctance by the managers about providing customer contact information and allowing us to send them a survey, since they felt this might harm their customer relationships or violate confidentiality. An Internet-based survey was sent to the lists of customers and up to two reminders were sent to those who had not replied to insure adequate participation.

Some examples of more utilitarian services represented in the sample include information system security consulting, customized enterprise resource planning implementations, and telecommunications services. Some examples of more hedonic services include architectural design, online games and online music sites.

Five expert designers with at least 5 years' of design experience in the field of both product design and service design evaluated each of the new services using information about the services on the participating firms' web sites and various electronic materials made available by the firms. The designers conducted their evaluations by filling in an Internet-based survey. Prior research suggests that designers tend to prefer their own concepts [35]. Thus, to prevent selection bias, we selected designers who had never been employed by the participating companies and were assumed to be able to provide objective evaluations.

The result was three independent sets of evaluations for each of the 44 new services sampled:
1. an evaluation by a senior manager of the company that introduced each new service
2. multiple evaluations by an average of 50 actual customers per new service (17% overall response rate)
3. evaluations by five expert designers for each new service

Customers and designers answered two questions commonly used to measure customer satisfaction. The items and Cronbach's alpha are shown in Table 1. The difference between the two groups' evaluations was calculated by subtracting the average of the designer evaluations for each new service from the average of the customer evaluations for each service. The absolute value of the difference was used as our variable for the difference between the two evaluations. This variable was tested for normality based on a joint test of skewness and kurtosis and was found to be insufficiently normal (χ^2=5.15, p=0.076). A subset of the ladder of powers was searched for a transformation that would convert the variable into a normally distributed variable and the square-root transformation was found to do this adequately (χ^2=0.68, p=0.712). Thus we used the square-root of the absolute difference between the two evaluations as our dependent variable.

Rather than asking customers and/or designers to rate the degree to which a service was hedonic, utilitarian and innovative in nature, we used evaluations of these variables by the

firms' managers. This mitigated the potential problem of common method bias. To measure the hedonic and utilitarian nature of each new service, the manager survey included Voss, Spangenberg and Grohmann's scales [25] for the hedonic and utilitarian dimensions of attitude to products, see Table 1. Five items based on Andrews and Smith's scale [36] for measuring novelty were also included in the manager survey to provide a measure of new service novelty (see Table 1).

Table 1 Variables and survey items

Respondents	Variable	Survey items	Cronbach's alpha	Mean	St.dev.
Customers	Customer satisfaction	On the whole, how satisfied are you with X? How likely or unlikely is it that you will recommend X to others?	0.87	3.67	0.77
Designers	Customer satisfaction	How likely do you think it is that customers will be satisfied with X? How likely do you think it is that customers will recommend X to others?	0.82	3.64	0.41
Managers	Service hedonic nature	X is fun X is exciting X is enjoyable X is thrilling X is delightful	0.92	3.10	1.20
Managers	Service utilitarian nature	X is practical X is necessary X is helpful X is effective X is functional	0.92	4.12	0.77
Managers	Service novelty	X is fresh X is unique X is novel X is unusual X is trend-setting	0.88	3.37	1.14

4   Findings

To examine the degree of agreement between the evaluations of customer satisfaction by customers and designers, the pairwise correlation between customer evaluations and designer evaluations of customer satisfaction was examined. The correlation was found to be 0.04 (p=0.82), see Table 2. This small correlation suggests that in general designers are not good predictors of customer satisfaction with new services.

Table 2 Summary statistics and pairwise correlations between variables. N=44.

	1	2	3	4
Customers:				
1 Customer satisfaction				
Designers:				
2 Customer satisfaction	0.04			
Managers:				
3 Service hedonic nature	0.03	0.15		
4 Service utilitarian nature	-0.10	-0.03	0.15**	
5 Service novelty	0.33**	0.15	0.41***	0.25***

*$p<0.1$ **$p<0.05$ ***$p<0.01$

One-way ANOVA analysis was used to test the three hypotheses. The results are shown in Table 3.

The hypothesis (H1) that there will be a closer match between designers' and customers' evaluations of customer satisfaction for more hedonic services is supported. According to the analysis, the difference between the two evaluations is smaller for services that are hedonic in nature than for services that are not hedonic in nature and the difference is statistically significant. Conversely, the results of the One-way ANOVA analysis suggests that designers' ability to predict customer satisfaction does not become worse for services that are utilitarian in nature. Thus, we fail to find support for Hypothesis 2. It is worth nothing here that as shown in Table 2, there is a statistically significant correlation between the hedonic and utilitarian nature of services (at 5% level), which indicates that services can be both (or neither) hedonic and utilitarian in nature.

The hypothesis (H3) about a closer match between designers' evaluations of customer satisfaction and customers' evaluations for services that are more novel is supported at the 10% level.

Table 3 Results of one-way ANOVA analysis with the absolute difference between designer and customer evaluations of customer satisfaction as the dependent variable. N=44

Service hedonicness			
Means:			
Services that are hedonic in nature	0.52		
Service that are not hedonic in nature	0.78		
One-way anova:		p	
Between group variance F	7.11	0.01	**
Bartlett's test for equal variances χ^2	0.16	0.69	
Bonferroni comparison	-0.26	0.01	**
Service utilitarianness			
Means:			
Services that are utilitarian in nature	0.62		
Service that are not utilitarian in nature	0.71		
One-way anova:		p	
Between group variance F	0.72	0.40	
Bartlett's test for equal variances χ^2	0.44	0.51	
Bonferroni comparison	-0.09	0.40	
Service innovativeness			
Means:			
Services that are innovative	0.56		
Service that are not innovative	0.74		
One-way anova:		p	
Between group variance F	2.99	0.09	*
Bartlett's test for equal variances χ^2	0.23	0.64	
Bonferroni comparison	-0.18	0.09	*

*p<0.1 **p<0.05

5   Conclusions

Customer satisfaction is essential for market success, but can be hard to predict. In this article, we compare designers' and customers' evaluations of customer satisfaction. Our findings suggest that designers perform better at predicting customer satisfaction for services that are more hedonic in nature. This supports the notion that designers are better able to predict customer satisfaction with services that fall within the sphere of their core expertise, namely that of hedonic value. Please note that we defined -and sampled- designers in terms of industrial/service designers rather than design engineers.

We find no statistically significant difference between high and low levels of service utilitarianness, i.e., the degree to which services deliver value that relates to functional, technical and practical benefits. Thus, designers' ability to predict customer satisfaction does not seem to depend on how utilitarian a service is.

Our findings provide support for the hypothesis that designers are better able to predict customer satisfaction when services are more novel, but since the results were only marginally significant (at the 10% level), these findings must be viewed as tentative. Novelty

may be utilitarian or hedonic in nature. Future research may explicitly distinguish between these two types of innovation and assess whether designers are better able to predict customer satisfaction when innovations are of a hedonic nature rather than a utilitarian nature.

Our results also suggest that when developing new services that are hedonic in nature, it may be beneficial to obtain designers' insights on whether or not a service is likely to satisfy customer wishes and needs. This may help offset an important drawback associated with evaluations by actual customers in that these can only be obtained after offering service has been developed, launched and sold to a large enough number of customers. From a development perspective it is desirable to obtain predictions of customer acceptance as soon as possible in the development process.

Although our findings suggest that designers' ability to assess customer satisfaction of services is not well developed, these findings should not be interpreted to mean that designers have a poor ability to design services. Indeed, as emphasized by Verganti [37], for long-term commercial success, design does not necessarily have to fit with present-day customers' wishes and needs. However, considering that designing services is a relatively new practice for designers, design educators need to put greater emphasis on training designers to assess customers' satisfaction with services. One method would be to train designers in co-designing together with customers. By co-designing with customers, designers can gain more insight into customers' current needs and wishes. However, with co-designing it is important to train designers in such a fashion that they not only focus on discovering and fulfilling current customers' needs and wishes but also future -or latent- customers needs and wishes, as this will result in more service innovativeness ([37] [38]).

Finally, it is important to point out that in this study we collected data from expert designers who had never been employed by the companies in our sample. Future research may examine to what extent findings will differ if internal designers are used, who may, for example, be more able to assess the utilitarian quality of the services they have helped to develop. Future research may also examine whether designers are better or worse predictors of customer satisfaction than managers. We expect that managers, in particular managers of technology-driven firms, are likely to focus on utilitarian value rather than hedonic value because they tend to view utilitarian value as the key to competitive advantage [26]. This suggests that, compared with designers, managers may be better able to predict customer satisfaction when services are of a more utilitarian nature.

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