SOURCES OF CONFUSION – PRODUCT DIFFERENTIATION AND MARKET STRUCTURES AS SOURCES OF CONFUSION

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Abstract
Product differentiation and diversification are important methods to align company offerings with customer needs more closely while increasing prices, raising revenues, fostering profitability, and strengthening competitive advantages at the same time. Aligning a company's offerings closely with the needs and wants of customers has gained increasing importance. Customer-centricity is also conducted to align a corporation's offerings with customer needs, while customer experience helps to elevate customer satisfaction. Product differentiation describes the alteration of a product, whereas product diversification describes the provisioning of new products for untouched markets and is seen by some scholars as an extensive form of product differentiation. While fostering the differentiation of products, it is shown that further willingness to pay can be skimmed from a market through differentiated product offerings. Moreover, sales numbers are increased because every customer can find a product that best serves their needs. However, too many varieties can lead to company-sided diseconomies and increased complexity costs. This paper illustrates the assumptions, dynamics, and effects of product differentiations and the accompanying effects on markets and market positionings. It is shown that product differentiation is not always in line with theoretical assumptions and that a deviation from the theoretical optimal amount of variety barges the risk of over-differentiation.

Keywords
choice excess; customer-sided confusion; market dynamics; market structures; product differentiation; product diversification

Introduction

Markets have shifted progressively from simple to complex, stable to dynamic, and finally, from andame to holistic (Neu & Brown, 2005). As a result, companies have become more customer-centric by providing customers with products that better fit their needs (Gebauer et al., 2011). Customer-centricity is seen as a prerequisite for a company's survival and profitability – it describes the endeavor of putting customers' interests at the center of a firm (Gummesson, 2008; Habel et al., 2020). Product diversification and differentiation are useful methods frequently applied for this purpose. Customer demands are also a reason for product variety, which has increased significantly over time (ElMaraghy et al., 2013). In the vein of self-consistency, the selective consumption of products is a well-liked method for demonstrating someone's identity (Sirgy, 1982). The opportunity for customers to choose among individualized product variants and the chance to order single customized products is summarized

under the term mass customization (Coletti & Aichner, 2011). This development can be seen as an attempt to serve the differentiated demands of customers. Consequently, many markets have become increasingly opaque for customers over time due to broader product ranges and new suppliers. However, company and customer-related benefits of larger assortments and broader product ranges are also accompanied by drawbacks for companies and customers (Kahn et al., 2013).

This paper reviews the fundamentals of product differentiation and explains how product differentiation can be a source of customer-sided confusion. The paper is structured as follows: The literature review covers the fundaments of product diversification, product differentiation, market structures, and the accompanying effects for customers as a source of confusion. The discussion summarizes the topics, and the conclusion provides recommendations and a further outlook.

Literature review

Customers' preferences change and vary over time (Villas-Boas, 2018). Diverging customer demands necessitates competition with entire product lines, directly affecting customers' purchasing decisions (Chen et al., 2009). It has been shown that broader product lines lead to higher market shares and increased profitability, partly by reducing manufacturing costs and rising relative prices (Kekre & Srinivasan, 1990). On the other hand, for companies, too much variety can lead to diseconomies of scope, and for customers, too much choice increases selection time and can cause poor purchase decisions (Xiao et al., 2015; Loewenstein, 1999; Lehmann, 1998). This underpins the potential pitfalls of too highly diversified and differentiated assortments.

Companies can react to changing consumer demands by varying, differentiating, or diversifying their products. Assortment modifications and expansions can be realized through three schemes: product variation, product differentiation, and diversification. A product variation describes the alternation of single product traits and a replacement of an existing, whereas during a product differentiation, single product attributes are altered, and further varieties are provided in a particular market or another country (Gaubinger et al., 2015; d'Aspremont & Dos Santos Ferreira, 2021; Berndt et al., 2023). Product differentiation adds a further subversion of an existing product to the assortment, affecting assortment width or depth (Gopalakrishnan et al., 2019; Pierański & Strykowski, 2017). Product diversification represents the provisioning of a new product in an untouched market and can be considered a comprehensive product differentiation process (Decker et al., 2015).

Product differentiation

Product differentiation results in further product varieties and is an effective method to obtain profitability in market niches (Ma & Wooton, 2020; Liu & Zhang, 2013). Product differentiation raises competitive advantage, increases economic value, maximizes profits, and allows higher prices (Makadok & Ross, 2013; Sharp & Dawes, 2001). Horizontal and vertical differentiation can be distinguished(Dos Santos Ferreira & Thisse, 1996). A horizontal differentiation is conducted by altering one product trait on the horizontal production line, such as product color; whereas a vertical differentiation is given if a certain product is altered one step on the vertical line of the

supply chain, as in the case of product quality (Conrad, 2005). In the case of horizontal differentiation, customers do not agree on the desirability of the distinct options to choose from. In the case of vertical differentiation, customers agree on the desirability of two options, meaning all customers would agree that option A is preferable to B (Tremblay & Tremblay, 2012).

The deliberations regarding product differentiation can be explained by the neoclassical theory of consumer choice (Gowdy & Mayumi, 2001) and the concept of Kelvin Lancaster (1966). The neoclassical theory of consumer choice (Gowdy & Mayumi, 2001) assumes that a household has a product bundle that maximizes utility. The bundle that will be chosen is the one with the highest monetary and personal value. All possible and affordable combinations of goods can be plotted through a linear budget constraint (Cicchetti & Freeman III, 1971).

While the theory of consumer choice (Gowdy & Mayumi, 2001) postulates that goods provide utility by themselves, Lancaster (1966) postulates that goods have specific characteristics that give them utility. It is furthermore assumed that goods have more than one characteristic whereby the characteristics are shared with more than one good and that through a combination of goods, more characteristics can be obtained than with the good alone (Muro-Rodríguez et al., 2017). Consequently, the utility of a good is composed of product characteristics and not solely on the good itself. Those characteristics are quantifiable, and the demand for goods is based on the demand for product characteristics. A central advantage over the neoclassical consumer choice theory is that goods are comparable according to their quantifiable characteristics. Consequently, Kelvin Lancaster's (1966) approach allows one to evaluate the goods based on their objective determinable characteristics. Classical consumer choice theory (Gowdy & Mayumi, 2001) is entailed in Lancaster's (1966) approach and occurs if all goods possess solely one characteristic and all considered characteristics are additionally allocated to distinct products.

Within both theories, the goods provided by different suppliers are still identical and fully substitutable. Figure 1 illustrates that the remaining customer surplus in the market is affected by product differentiation.

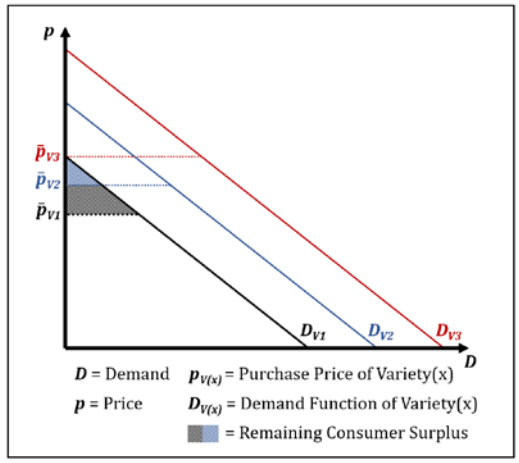

Figure 1. Customer surplus and product varieties
(Source: Authors' own research results based on Zhang, 2021)

Thereby, the demand is indicated by $D_{V1\text{-}V3}$ and $\bar{p}_{V1}$ is the price for an undifferentiated product. $\bar{p}_{V2}$ and $\bar{p}_{V3}$ represent prices of differentiated varieties, and D_{V2} and D_{V3} represent the differentiated demand curves. The respective shaded areas illustrate the remaining willingness to pay. Product homogeneity results in a uniform product price *p*. Losses are generated if goods are offered below price *p,* and customers are lost if the *p* is exceeded. Customers generally willing to pay a price above *p* cannot be reached, and a price above *p* cannot be charged because direct competitors provide an identical good for price *p*. The consumer surplus represents an additional willingness of customers to pay a higher price than *p*. The concept was first developed by Dupuit (1844). Marshall (1890) introduced the concept into the economic landscape by considering a constant marginal utility of money – therefore, it is also called the 'Marshallian consumer surplus' (Randall & Stoll, 1980; Houghton, 1958; Estrin & Marin, 1995). The consumer surplus represents an additional willingness of customers to pay a price higher than *p*. Product differentiation is, therefore, an appropriate and economically beneficial method to skim the remaining capacities inside a market.

However, consumer choice theory (Gowdy & Mayumi, 2001) and the modification from Lancaster (1966) rely on the preconditions of the *homo economicus,* which is subject to a strictly rational, utility-maximizing behavior, complete information, no time preferences, as well no lack in information (Braun, 2021; Yamagishi et al., 2014). Furthermore, total market transparency is assumed, and preferences are constant (Gowdy & Mayumi, 2001), even though product differentiation can cause a shift in preferences. Consequently, brands cannot exist under neo-classical assumptions because they interfere with the assumption of full information and constant preferences. However, the models still underlie strict presumptions – it is therefore valuable to examine the underlying mechanism of market differentiation.

Market Structures

Market segmentation describes the viewpoint of a heterogeneous market as a smaller number of homogeneous markets (Smith, 1956). Moreover, the concept of market segmentation "rests upon recognition of a differentiated demand for a product, while its use as a marketing tool depends upon identification of the most appropriate variable or variables with which to subdivide total demand into economically viable segments" (Baker, 1998). It is seen as a key strategic definition area and assumes that customers are heterogeneous in terms of product preferences and buying behavior (Dibb & Simkin, 2001). The market segmentation process describes grouping consumers with similar characteristics or product preferences into existing or artificially created segments (Dolnicar et al., 2018). Therefore, it is necessary to abandon the fundamental assumption of a homogeneous demand pattern as postulated by neoclassical theories to investigate market segments and structures. Thus, a market is assumed to be entirely homogenous (Beane & Ennis, 1987). Market segments allow marketers to capitalize on a superior market position and identify niche opportunities (Weinstein, 2004).

Assuming actively participating companies in a market provide nearly homogeneous or largely identical products, Dickson and Ginter (1987) distinguish between three different market scenarios based on product differentiation.

The first scenario assumes evenly distributed preferences, and neither differentiated goods nor market segments are present. Figure 2 illustrates this scenario whereby the numbers within the market area indicate the economic value of the respective areas, and the illustrated circle around a supplier's position emphasizes the market coverage. Because no ideal point is present, the economic value of each market area is identical. Under this circumstance, it can be assumed that each market participant covers an identical market share if all participants have a nearby market position. In this scenario, differentiation would achieve a competitive advantage because further market shares would be obtained. If supplier A decides in this scenario to position himself through differentiation to position A', he would increase his market share and sales. This scenario illustrates that market segments are not necessary to profit from product differentiation.

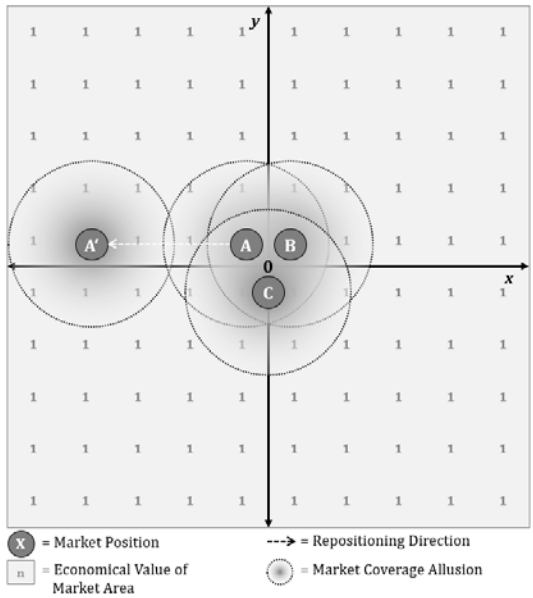

Figure 2. Product differentiation scenario with evenly distributed preferences (Source: Authors' own research results based on Dickson and Ginter, 1987)

Within the second scenario, as illustrated by Figure 3, product differentiation with unimodal distributed preferences is described. As indicated by the respective market values, a clear ideal point within the market is given, and the market share increases proportionally by moving closer to the ideal point. A supplier positioning itself directly on the ideal point will obtain the highest possible market share if no competitors are positioned similarly. This implies that a position on or as close as possible to the ideal point will yield the highest economic value.

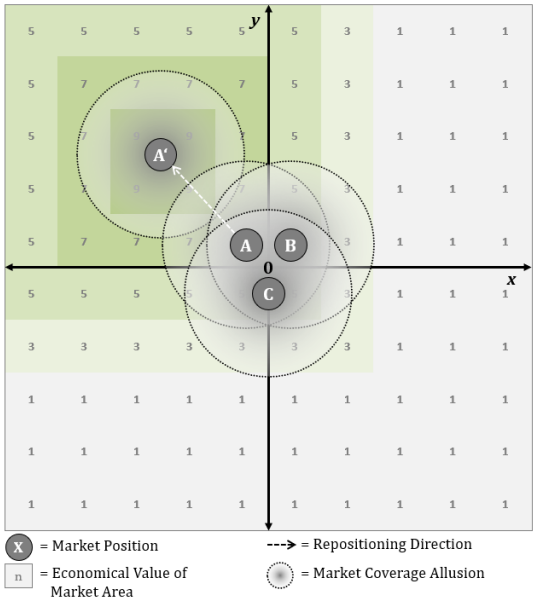

Figure 3. Product differentiation scenario with unimodal distributed preferences (Source: Authors' own research results based on Dickson and Ginter, 1987)

Under these conditions, it has to be expected that all suppliers will move as closely as possible to the most profitable position within the market. A close alignment with customer preferences is given if consumer demands are covered by the organization's marketplace offerings (Piercy & Morgan, 1993). Moreover, strategic positions allow above-average returns and establish a competitive advantage (Spanos & Lioukas, 2001). In this scenario, a company would not differentiate from another position because no other ideal point is given. The company shall, therefore, bundle forces to move to the ideal point. Entering a market as a first mover is accompanied by the possibility of securing sustainable competitive advantages and raising market entry barriers (Ahlbrecht & Eckert, 2013). The same can be assumed for individual market segments because they can be seen as smaller sub-markets (Ayal & Zif, 1979).

In the third scenario, multimodal preferences are present, representing a segmented market's classical characteristic. In this scenario, products are differentiated according to the preferences of the individual segments because a fit between segment preferences and product offerings shall be attained (Freytag & Clarke, 2001). Market shares are increased by adapting product characteristics to customer demands. Figure 4 depicts a scenario with three suppliers operating in a market with three profitable segments.

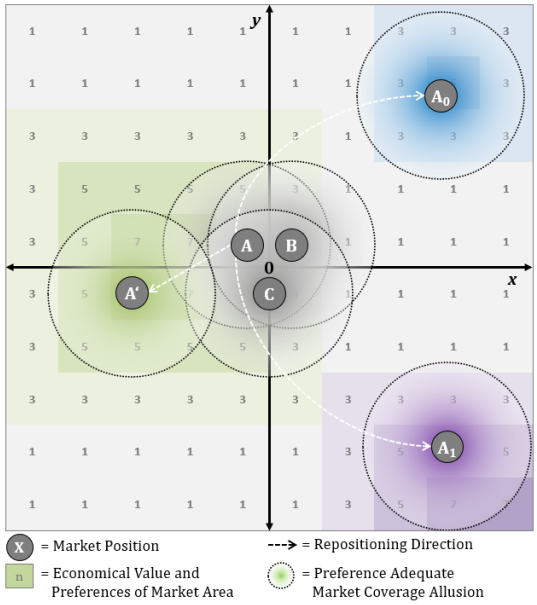

Figure 4. Product differentiation scenario with multimodal distributed preferences (Source: Authors' own research results on Dickson and Ginter (1987)

All providers obtained roughly an identical market share in the scenario's initial position. However, supplier A differentiated to the most economically beneficial market position because he is the closest to the ideal economic position. The long-term attractiveness of a segment is determined by the costs to reach and remain in that market position and the respective market dynamics. The total occupation of a market position illustrates a monopolistic position. Higher prices can be charged by achieving a monopolistic position within one segment, and market entry barriers for competitors arise (Chen & Frank, 2004). This can cause competitors to obtain other segments that are not yet occupied, less competitive, and where the market position could be more effortlessly sustained.

Discussion

Market conditions and customer demands constantly change within the economic landscape, and therefore, companies have become more customer-centric. Product differentiation serves diverging and continuously changing customer demands, needs, and wants. A differentiated product portfolio allows each customer to find their most suitable product, raising sales and revenues. It is a requirement for companies to align product offerings with divergent and constantly changing customer demands, needs, and wants. Moreover, some buyers' remaining willingness to pay higher prices can be skimmed, and higher profits can be obtained. Market conditions constantly change, and differentiated products allow sellers to obtain segments with higher economic value. Thereby, competitive advantages are strengthened while market positions are secured.

However, theoretically, it can be assumed that the relative total benefit of each product variety or option decreases per variety if the number of options to choose from rises (Lehmann, 1998). Moreover, comparing varieties is accompanied by mental costs for

the comparison process (Shugan, 1980). Too much information that needs to be processed during a selection process can lead to an information overload, a concept without a clear and mutually accepted definition that describes a state where an individual has too much information at a given time, or rather a state where the efficiency to use information is hindered by too much information at a given time (Lee & Lee, 2004; Bawden et al., 1999). An information overload can lead to decreased decision-making performance and increased usage of heuristics – which represent mental shortcuts that can lead to worse decisions (O'Reilly, 1980; Lehmann, 1998). Too much choice can lead to time, error, and psychic costs. Time costs account for the time required to make a decision; error costs refer to the probability of making a faulty decision when the number of options is too large; psychic costs describe the risk of a hindsight bias for false decisions (Loewenstein, 1999). The options to choose from also have demotivating effects and can hinder purchases (Iyengar & Lepper, 2000). Too much variety can trigger a choice overload caused by the number of alternatives and not the attributes of those alternatives, as in the case of an information overload (Park & Jang, 2013). Customers experience confusion if the options to consider are too numerous due to the complexity of variety (Huffman & Kahn, 1998).

Generally, consumers become gradually confused by exceeding a certain variety threshold (Schweizer et al., 2006). When changes in differentiated products are unclear or when consumers are not certain about their preferences – especially for first-time purchases – customers learn their preferences, which can be discouraging due to complexity. They can cause decreased customer satisfaction (Kahn, 1998). Malhotra (1982) states that the number of alternatives to choose from causes significant confusion in the context of information overload. Some authors argue that the actual degree of confusion is due to the subjective perceived complexity rather than the actual complexity. This confuses knowledgeable buyers of a particular category more than uninformed customers (Huffman & Kahn, 1998). Additionally, differentiated products that differ on multiple traits from each other are less likely to be purchased than differentiated products that only differ along one product characteristic. This especially applies if the needed degree of cognitive effort and the potential to regret rises (Gourville & Soman, 2005). A high similarity between products, as well as an overchoice of products or ambiguous information, can cause consumer confusion – an unpleasant state for customers that leads to decreased customer satisfaction, decreased repeated purchases, more returned products, reduced customer loyalty, and a worsened brand image (Mitchell & Kearney, 2002). The consumer confusion concept focuses on confusion caused by differences between brands (Mitchell & Papavassiliou, 1999). Grimm and Wagner (2021, 2022) show empirical solid evidence that the amount of variety within a brand leads to significant confusion regarding purchase-relevant effects.

The paper contributes to theory in several ways by explaining in-depth the underlying mechanisms of product differentiation, the respective theories and mechanisms, and the dynamics of market structures. The findings of product differentiation are examined in detail, and the research is linked to contributions regarding the consumer-sided effects of product range extensions. It becomes apparent that product differentiation can – by causing consumer-sided effects – be a source of confusion. Practitioners gain a profound understanding by becoming aware of the reasons and important factors regarding product differentiations. They are made aware of the

accompanying benefits and effects, while the implications for companies and customers are additionally outlined.

Further studies could consider the accompanying effects of product diversification in multiple markets. Also, the dynamics of market structures and their respective effects over time could be considered. Moreover, this study assumes a constant price per variety. Further research could model the impact of divergent prices due to different sales channels, multiple retailers, or sales promotions.

Conclusions

It has been shown that product differentiation is a necessary procedure for companies, partly to align customer needs more closely with product offerings and to obtain wide-ranging economic benefits and secure market positions. As shown and discussed, the sheer amount of variety is accompanied by several drawbacks for companies and customers. The amount of variety between brands and within a brand can cause a state of confusion that causes significant negative impacts. Therefore, companies are advised to cautiously and thoughtfully consider the number of varieties offered to prevent over-differentiation. In conclusion, it can be stated that product differentiation as a source of confusion is becoming increasingly relevant because an increase in assortment width and depth due to differentiation can be observed in almost all industries and markets.

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