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# Crowdsourcing in Business– to–Business Markets: A Value Creation and Business Model Perspective



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## INTRODUCTION

Every company's task is to create value for the company and its stakeholders. The logic how the value is created, however, is the trick part. Business model can be seen as one of these kinds of tools - despite of their abstract nature - which help the company to operationalize its value creation objectives. In order to stay competitive and to create value, there is a constant need to innovate the business model of the company. This kind of relation between value creation and business model build the background for the study presented in this chapter.

The purpose of the chapter is to empirically examine the value creation logic and the business model elements in the context of a contemporary phenomenon in e-business, crowdsourcing. The chapter bases theoretically on the well-known model of Amit and Zott (2001) and applies it to the specific context of crowdsourcing. The empirical part of the paper is carried out through a multiple case study research method. By the application of the Amit and Zott (2001) model, the chapter is able to contribute to the e-business model literature by offering an empirical study where a one, well-known value creation and business model framework is applied in practice. However, the paper is also able to contribute to the current discussion on the potential of the usage of social media, in particular crowdsourcing, in business-to-business markets.

## BACKGROUND

The foundation for the analysis of this chapter builds on the value creation model of Amit and Zott (2001), where they studied the importance of sources of value creation in the field of electronic business. This model was chosen for the purposes of this study because it is developed from fundamental value creation models and dominates concerning value creation in e-business, of which crowdsourcing by utilizing social media tools represents also. Moreover, Amit and Zott's business model (2001, p. 511), which focuses on e-business for B2C companies, can be adapted for all virtual markets in general, and

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also applies to B2B companies (2006, p. 20). Most importantly, the model enables to analyze the relations between value creation and business model. In next, the theoretical background of value creation is opened up especially in the context of business-to-business markets, and furthermore, the model of Amit and Zott (2001) is presented. Lastly, crowdsourcing in business-to-business markets as the research context of the present study is discussed.

### **Value Creation in B2B Markets**

Value creation seems to be the buzz word of current business and marketing literature (see e.g. Lindgreen & Wynstra, 2005; Gummerus, 2013). However, identification of value is not an easy task. This is due to the multifaceted and complex nature of value; it is a concept that is commonly used by both academics and practical actors in the field, but it is often rather unclear what is actually meant by it in different contexts (Ford & McDowell, 1999; Helander, 2004). Marketing literature has made a division in value discussion to two main streams: the value of products and services, and the value of buyer-seller relationships (Lindgreen & Wynstra, 2005). In this study, the latter one is applied. Another interesting distinction that has been made within the value creation literature is the division between value creation processes and value outcomes (Gummerus, 2013). When focusing on the value creation process perspective, it is important to understand that the process of value creation will differ based on whether value is created by an individual, an organization, or society (Lepak, Smith, & Taylor, 2007). In the current study, the first two levels, an individual and an organization are present, as use of social media based crowdsourcing is studied in B2B context (organizational level) but is in the end realized through individuals that participate in the crowdsourcing.

Referring to the perspective of value as an outcome, a commonly presented view of value is to understand it as the trade-off between benefits and sacrifices (Ravald & Grönroos, 1996; Yadev & Berry, 1996; Slater, 1997; Parolini, 1999; Lapierre, 2000) which can be both monetary and non-monetary (Walter, Ritter, & Gemünden, 2001). The use of crowdsourcing in B2B context strives mostly for monetary value, as the ultimate objective for companies is to create profit for their owners. Nevertheless, there is also a great non-monetary value potential included in crowdsourcing for companies, such as gaining new ideas, concepts, information, knowledge, or other resources (Kärkkäinen, Jussila, & Multasuo, 2012). These kinds of non-monetary values may be in the long run even more important, because in the end, they may create the biggest value and turn also into direct monetary value e.g. in the form of new market areas, new product/service innovations or even as the key enabler of company growth.

### **Amit and Zott Model**

Increasing the efficiency of the processing of transaction in e-business leads to lower costs and hence to higher value. The potential of lower costs is enabled for example by reducing searching costs through using virtual markets, or through reducing information asymmetries between buyers and sellers through providing comprehensive and up-to date data (Amit & Zott, 2001, p. 503). Complementarities, as another value driver, occur if a bundle of goods together create more value than the total value of having each of the goods separately. One example for complementarities are internet-based services like crowdsourcing (Johansson & Mollstedt, 2006, p. 17). Goods and services are linked in a reasonable way, which generates value. Complementarities can be vertical, like after-sales services, and horizontal, like cameras and memory card. Beyond that, the connection between off-line and on-line assets is a further complementarity. It supports the customers to establish contacts and to process transactions (Amit & Zott, 2001, p. 504).

The lock-in of other actors to one's own company can be divided into two directions, on the one hand, on the willingness of customers to repeat transactions, and on the other hand, by the extent to which strategic partners are motivated to maintain and improve their collaboration. Lock-in prevents customers as well as strategic partners to migrate to competitors. This leads to higher transaction rates and lower costs. For example, loyalty programs (e.g. bonus cards), dominant design property standards, and the establishment of trustful relationships with customers are leading to customer retention. Moreover, e-business enables that customers can customize products and services, as well as information, which leads to enhanced lock-in. Personalized websites offer customers the possibility to create personalized profiles, where they can add their own preferences. Virtual communities for example, bond participants to a special e-business, which creates loyalty, enables frequent interactions, and enhance the frequency of transactions (Amit & Zott, 2001, p. 505). Hence, it is easier for a company to create migration barriers for customers and strategic partners, and to hold the network stable. In this context, network externalities, especially consumption externalities, are another important aspect. According to Katz and Shapiro, positive network externalities arise when utility for the user of a product increases with the number of agents that consume the product (Katz & Shapiro, 1985, p. 424). In e-business, network externalities can be found when the created value for customers rises with the quantity of the customer base. That means that a user-community becomes more attractive for potential members to join a community after a new member has subscribed to the community. Otherwise, if a community loses members the platform becomes unattractive and the member dropout rate may increase. Besides, indirect network externalities may arise when economic agents benefit from positive feedback loops of other agents. While having a look of e-bay or other online auction sites, it is visible that buyers do not benefit from other buyers. But the existence of a multiplicity of buyers makes the platform more attractive for potential sellers. This again leads to an increasing desirability on the site to potential buyers. Hence, buyers benefit indirectly from an increasing amount of other buyers. This applies also to sellers (Amit & Zott, 2001, p. 507).

The fourth source of value creation that Amit and Zott mention is novelty. Novelty includes the traditional value drivers like new products or services, distribution, new methods of production, or marketing. But additionally, e-business innovates new ways in structuring transactions. Connecting parties, which were previously unconnected creates value in terms of eliminating inefficiencies in the process of buying and selling through adopting innovative transaction methods, creating entirely new markets, and capturing latent customer needs (Amit & Zott, 2001, p. 508).

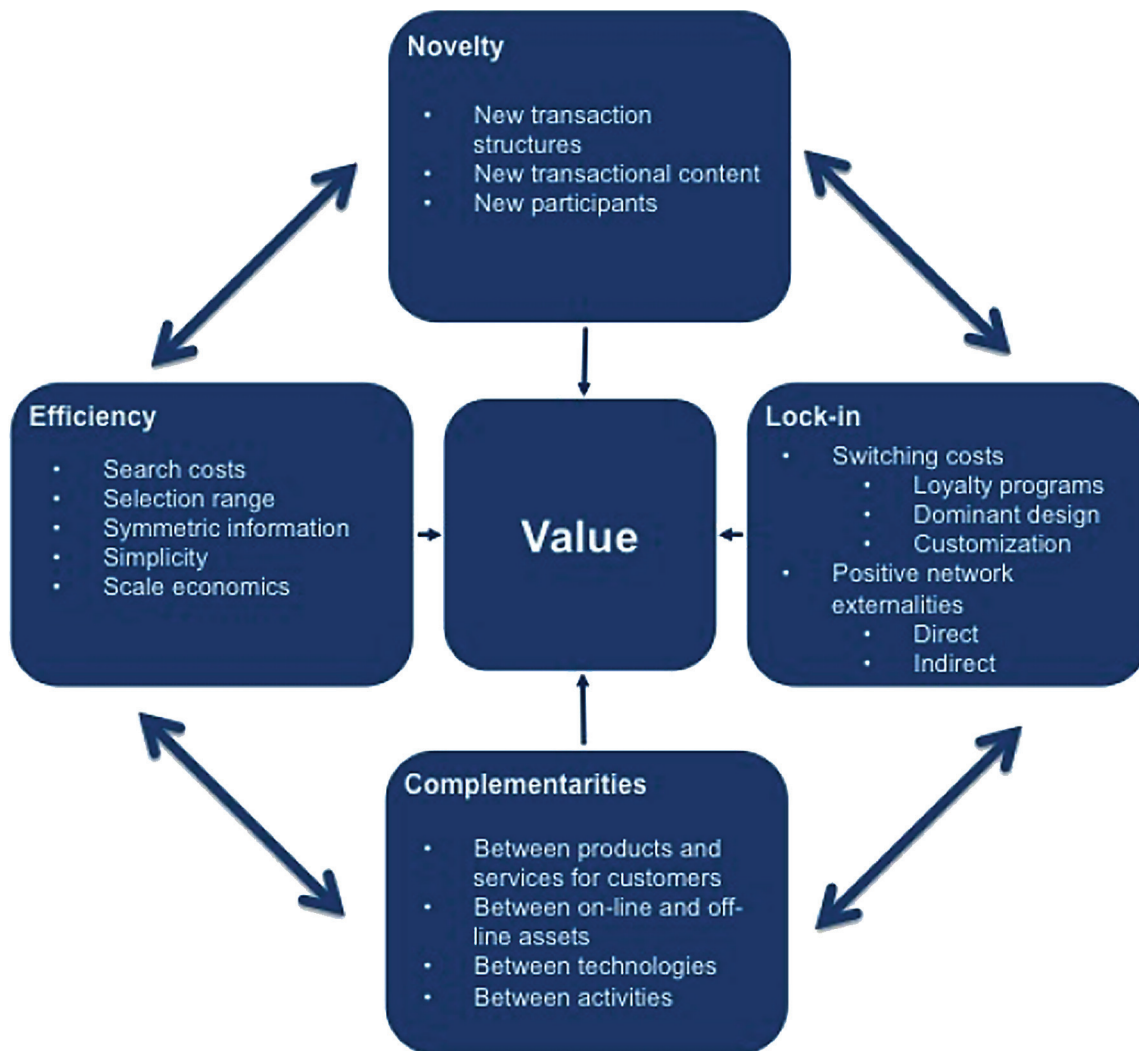
In next Figure 1 these above mentioned four value drivers are illustrated.

All these four sources of value creation are interdependent and can have influence on each other in a positive or negative way.

## B-to-B Crowdsourcing as the Research Context

In practice, a wide range of companies already succeeds in collaborating online with people around the world through social media applications. Social media is an important driver also for the recent increase in existing crowdsourcing approaches (Kärkkäinen et al., 2012, p. 136). In 2006, Jeff Howe presented the new concept of crowdsourcing in the *Wired* magazine for the first time. According to Estellés-Arolas and González-Landrón-de-Guevara (2012) crowdsourcing is defined as "... type of participative online activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task." Furthermore, mutual benefits are created between the user and the crowdsourcers (Estellés-Arolas & González, 2012, p. 197). However, a vast majority of research on crowdsourcing

*Figure 1. Amit & Zott (2001) model as the theoretical framework of the study*



and its business potential focuses currently on the business-to-consumer (B2C) sector and only very few studies on business-to-business (B2B) crowdsourcing. Due to the current lack of b-to-b crowdsourcing literature, it is difficult to illustrate the opportunities that are created through crowdsourcing. There is need for research that is able to show to the business-to-business companies why, when and how crowdsourcing could be used.

Thus, it is also important to further analyze whether there are different ways to conduct crowdsourcing, i.e. are there varying modes of crowdsourcing. On the basis of analysis of current literature – most importantly, the studies of Howe (2008), Schenk and Guittard (2011), and Vukovic (2009) – crowdsourcing can indeed be divided into two classes, in line with the nature of the compensation: a) mainly monetary or material compensation or b) mainly non-monetary or non-material compensation. For the first category of compensation, the definition of Vukovic (ibid.) is applied in this study. It distinguishes between two distinct types of crowdsourcing: competition and marketplace. However, Vukovic does not consider other types, varieties of crowdsourcing that do not follow either above-mentioned logic. From a review of the literature, three further types of crowdsourcing can be identified: events (Erickson, 2011),

communities (Zwass, 2010), and toolkits (Bessant & Möslin, 2011). Instead of considering toolkits to be an independent type of crowdsourcing, it can be recognized as a technological option that can be used in all types of crowdsourcing. In events and communities, the compensation is typically mainly non-monetary and non-material, such as enhancing one's reputation, gaining new understanding, sharing knowledge, increasing reciprocity, and fostering a sense of community. It must be noted that our typology does not restrict the use of multiple forms of compensation; rather, it refers to the primary form of compensation, the one that is typically used. For example, the winner of competitions is typically compensated monetarily but may also receive other forms of compensation, such as reputation benefits.

As a summary, in this study the categorizing of the types of crowdsourcing is based on how the crowdsourcing platforms help the company to gain the resources (e.g., ideas or concepts). The four identified crowdsourcing modes are: innovation competition, innovation event, innovation community and innovation marketplace. This categorization is followed in the empirical part of the study.

## EMPIRICAL STUDY

In this section the process for case selection is firstly opened up, then followed by presentation of the empirical findings from the multiple case study.

### Case Selection

For the case selection, a maximum variation case selection strategy (Flyvbjerg, 2006) was used to obtain information from cases that were very different on dimension crowdsourcing mode. Platforms that were company internal, under development, discontinued, not released at the moment or difficult to receive information from were not included in the process of case selection.

The sources of data used for the case studies evaluation were documentation, direct observations and participant-observation. The documentation included available crowdsourcing literature, conference papers, and various Internet sources. Direct observation was made in form of visiting different crowdsourcing platforms and other case related websites (Yin, 2009, p. 92). Furthermore participant observation was part of the data collection in form of subscribing to the crowdsourcing platforms and testing them (Yin, 2009, p. 94).

The cases were selected to cover all four crowdsourcing modes. The cases, which provided the most information for the single crowdsourcing modes were chosen with the aim to gain the greatest possible amount of information to answer the research questions. The four modes of crowdsourcing are covered by the five selected cases: Bombardier (YouRail), Dell (Storm and Sputnik), Genelec (Community), Atizo (Pago AG) and Kickstarter (Formlabs). Five cases were chosen to be able to compare the crowdsourcing modes as well as to utilize eventual differences between company owned crowdsourcing platforms and intermediary crowdsourcing platforms. Three cases are describing company own crowdsourcing platforms and two cases include intermediary crowdsourcing platforms. In general, the selected cases present different ways of crowdsourcing and value creation for diverse business functions in business-to-business markets. For example, Bombardier's crowdsourcing platform has the business function to design new product concepts. Dell Storm session is used to identify needs and opportunities. The Genelec Community is a crowdsourcing community for concept generation. Atizo provides a crowdsourcing platform for idea generation and selection and Kickstarter supports funding activities.



## **Empirical Findings**

The key empirical findings from the five selected cases are opened up in next through the Amit and Zott (2001) model.

### **Lock-In**

Lock-in is created to engage customers in making repeated transactions (Johansson & Mollstedt, 2006, p. 20). The crowd can easily access resources like information and knowledge and thus helps them to collaborate with the crowdsourcer more easily than e.g. with outsourcing. The insights that a company shares with its crowd support the information flow and increase the motivation of customers and partners to participate. Dell for instance, updated all information and news related to Project Sputnik in Storm Session. This is particularly important for a crowd consisting of B2B customers and partners because they can follow innovation processes and e.g. receive information when a product gets launched. Hence, lock-in can support customers and partners to plan their business on the basis of the content they can access through crowdsourcing.

When customers, partners and/or end-users are encouraged to repeat transactions it will improve the profit of a company. The building of trustful relationships is also very important. Various similarities could be found how lock-in is enabled by B2B crowdsourcing independent from the crowdsourcing mode (innovation competition, innovation event, innovation community, or innovation marketplace) and whether it is an intermediary crowdsourcing platform or a company owned crowdsourcing platform. Concerning the lock-in and the context of B2B relationships crowdsourcing platforms play an important role. All cases involved communities or social networking aspects. Crowdsourcing platforms enable lock-in by providing a virtual community, which connects all parties that are involved in the crowdsourcing process on one place without geographical constrain. All necessary information for participating in the special crowdsourcing activity is collected there and can be updated permanently. Crowdsourcing platforms are well adapted to environments with a multiplicity of knowledge, because of their fast information-processing capacity (Möller & Svahn, 2003, p. 202). Furthermore, in all cases an easy communication between the crowd and the crowdsourcing company was enabled by the crowdsourcing platform. This is crucial for building trustful relationships (Möller & Svahn, 2003, p. 209). For instance, Dell encouraged mobile and app developer to share their knowledge with the company and participate in Project Sputnik. The aim was to cooperate actively with professionals outside the company to create an innovative product that suits to the needs of this specific target group. The active integration of professionals in the new product development process leads to customized products and hence to the creation of a product that suits the customers' requirements. Also Bombardier, Formlabs and PAGO AG used crowdsourcing to customize products. In the case of Genelec, the crowdsourcer (record studio owner) posed the question to gain some feedback concerning his issue. He is not using the results of his task to customize products. But Genelec as provider of the crowdsourcing platform can use the input gained by this request to provide the result to the whole crowd and hence, to offer valuable, customized information.

Additionally, in all cases personalized websites were offered to create individual profiles, where members could add various information and preferences. The creation of profiles bonds the crowd to the specific crowdsourcing platform. The utilized crowdsourcing platforms supported frequent interactions related to the special crowdsourcing task but also interactions on a wide scope of topic crowdsourcing. Thereby, increased loyalty and enhanced transaction frequencies were supported (Amit & Zott, 2001, p. 506). The cases PAGO AG and Bombardier, which are both ranged in innovation competition mode



feature the integration of the crowd in the decision making process. Participants of the crowdsourcing activity were able to rate and comment submissions of other participants. Dell's innovation event Storm Session involved the crowd in testing submissions of other participants. These integration of the crowd again can lead to loyalty and enhanced transaction frequencies. Especially in the modes innovation event and innovation community positive network externalities are important (Katz & Shapiro, 1985, p. 424). Since the nature of the Genelec Community and Dell's Storm Session is a non-monetary and non-material form of compensation, crowdsourcing is more than in the other cases driven by an active communication among the crowd. Value increases with a growing amount of participants. Or in other words, the more members join the platform the more attractive it becomes for potential users to join the platform and vice versa.

### Complementarities

Crowdsourcing itself is one example of complementarities. Often complementarities are related to efficiency. Amit and Zott (2001, p. 494) mentioned that value drivers are interrelated and the findings of the case studies validate this. It links products and services in a reasonable way and so value is created (Amit & Zott, 2001, p. 504). Value generated by complementarities is common for all examined case studies. First of all, information, products and services of all crowdsourcing companies are quite complex, which results from the business-to-business context. Again in short, Bombardier is searching for new interior designs for trains; Dell's Project Sputnik is used to identify needs and opportunities of professional mobile and app developers to better understand the special requirements of developers in web companies; the crowdsourcer in the Genelec Community case searched for a solution to solve his issue with his speakers in his record studio; Pago AG searched for ideas concerning self-adhesive labels of the future to generate ideas and concepts for a new product; and Formlabs searched funders to realize Form 1. Since the crowdsourced tasks are either complex and require knowledge and experience to solve it (e.g. Dell Storm Session, Genelec Community) or are creative but concern B2B goods, the products and related services are not easily replaceable. Furthermore, the crowd offers many complementary concepts, ideas and/or knowledge. All parties integrated in the crowdsourcing process benefit by having all connected information, products and services on one place. Moreover, provider of crowdsourcing platforms and crowdsourcing companies benefit from crowdsourcing as a marketing tool to gain more attention of potential users, customers and partners, and to support brand awareness.

### Efficiency

There are several aspects that increase efficiency of the processing of transactions by crowdsourcing, which are common for all five cases. First of all, crowdsourcing enables to reach a huge amount of people no matter where they come from via a virtual community. That is why a multiplicity of people is able to participate in crowdsourcing activities. For instance, 2,234 participants submitted their ideas to Bombardier. Formlabs, which used Kickstarter as intermediary crowdsourcing platform had 2,069 backers in the end of the funding period. Because this immense amount of submitted ideas, feedback, knowledge and skills crowdsourcing generates value through a vast amount of innovation input and an accelerated new product development process than without crowdsourcing. For example, Formlabs was only able to develop Form 1 in such a short period of time because they received the monetary support and also the customer insight from the crowd. Crowdsourcing companies gain input from different target

groups outside the company and save resources and costs for own employees. Particularly in the crowdsourcing mode innovation competition (Bombardier's YouRail, Atizo's Pago AG), submitted solutions of the crowd can be ranked and commented and therewith selecting costs can be reduced. But also in the other cases crowdsourcing platforms support features that lower searching costs. Moreover, information asymmetries are likely to disappear, because all involved parties are connected in the crowdsourcing platform and contract settings between requestor and provider of crowdsourcing tasks take place ex-post if necessary (Schenk & Guittard, 2011, p. 102), e.g. Bombardier and Pago AG only reward the winning submissions with a monetary price. Transaction costs can be lowered by crowdsourcing, because companies save time to search for appropriate provider of solutions, ideas or information (Amit & Zott, 2001, p. 499) since the companies issue an open call. Additionally, less time is required to communicate with the crowd information (Amit & Zott, 2001, p. 499), because all involved parties are connected in the crowdsourcing platform and have all necessary information there. Communication takes place online. Hence, there is no need for the crowdsourcer to claim physical space for meetings, or to spent money for travelling (Lucking-Reiley & Spulber, 2001, p. 4).

### Novelty

In all five cases it could be observed that crowdsourcing connected previously unconnected parties within one platform to share their knowledge and creativity. Bombardier connected through its crowdsourcing platform end-users as well as current and potential customers and partners. Project Sputnik connected via Dell's Storm Session professionals outside the company with internal staff. The record studio owner used the Genelec Community to connect staff, professionals, end-users, and fans of Genelec products to solve his problem. Pago AG connected professionals and end-users with the own company by using Atizo as crowdsourcing platform. And Formlabs connected funder with the own company by using Kickstarter as crowdsourcing platform. However, novelty means also that experts (e.g. Project Sputnik) as well as non-experienced (e.g. YouRail) members of the crowd can share their knowledge and creativity. Insights of the crowd can be utilized in a novel way to identify trends by collecting user feedback. The requestor of the task tries to collaborate with the crowd in a new way. In the cases the crowds create more value than the crowdsourcing companies. For example, Bombardier and Pago AG are strongly dependent on contributions by their crowd.

## SOLUTIONS AND RECOMMENDATIONS

Based on the application of the theoretical framework (Amit & Zott 2001) in the empirical case study, the four potential sources of value creation (lock-in, complementarities, efficiency, and novelty) can be adapted for crowdsourcing. Based on the empirical case study, a model that will help to make choices between different crowdsourcing modes was developed. This is summarized in the following Table 1.

In Table 1, the X means that crowdsourcing mode has a major impact on the value creation driver whereas O refers that the specific crowdsourcing mode has less impact on the value creation driver.

As illustrated in the Table, all the crowdsourcing modes can make things potentially more *efficiently* and achieve *novelty*. Based on the empirical findings it can be even argued that crowdsourcing can be used to do things more effectively and achieve greater innovation than by outsourcing. Furthermore, the different modes of crowdsourcing also supported the *lock-in* effects creation. However, most effectively

Table 1. Value driver assessment of different modes of B2B crowdsourcing

	Efficiency	Novelty	Lock-In	Complementaries
Innovation competition	X	X	O	O
Innovation event	X	X	X	O
Innovation community	X	X	X	X
Innovation marketplace	X	X	O	O

lock-in arise in the modes of innovation community and innovation event. At strongest, the emergence of *complementaries* supports innovation community crowdsourcing mode, partly because the communities are longer-term. In all, this kind of model provides a tool that helps to understand which types of crowdsourcing modes support at best certain kind of value creation. Thus, it is able to support the B2B companies to choose the most appropriate solutions for them when carrying out crowdsourcing.

## FUTURE RESEARCH DIRECTIONS

Value creation by crowdsourcing in the context of business-to-business provides potential, which still needs to be exploited.

The four sources of value creation (lock-in, complementarities, efficiency, and novelty) defined by Amit and Zott (2001) effect the generation of value by crowdsourcing no matter what kind of crowdsourcing approach is used. For future studies, it would be interesting to evaluate more precisely the interdependencies between the different value drivers and how they should be connected in the best way to maximize the value generation by crowdsourcing activities. Furthermore, it would be interesting to research how certain features that are provided by the crowdsourcing platform generate value and in which value dimensions these values can be classified. Since collaboration is a huge part of crowdsourcing and a matter of special importance in the B2B context the influence of collaboration on the single sources of value creation could be an interesting research area.

Crowdsourcing addresses a multiplicity of people due to its nature. That is why legal factors, intellectual property rights (IPR), and security issues are critical factors. For further studies this topic is crucial especially because crowdsourcing connects customer knowledge and ideas to the companies new product development processes. Hence, the topic of risks and risk management in crowdsourcing would be interesting for further research.

## CONCLUSION

Generally, crowdsourcing should be used when a company is not able to solve a task on its own and when it is difficult to select an appropriate contractor. But especially in the context of B2B legal factors, intellectual property rights, and security issues limit crowdsourcing. In the use of crowdsourcing a company has to be aware of the formation of its crowd and that the involved parties have full access to the content shared via the crowdsourcing platform. Competitors could subscribe to crowdsourcing platforms to screen the ideas and use the customer insights for their new product development process.

In all, Amit and Zott's (2001) model of value creation in e-business, which was created for B2C companies, is also useful to utilize value drivers for crowdsourcing in the context of B2B. The framework was used to analyze the sources of value creation for the different crowdsourcing modes. The developed model supports companies to choose the appropriate ways to do business with crowdsourcing, i.e. helps to identify the business model for crowdsourcing.

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## KEY TERMS AND DEFINITIONS

**Business Model:** Describes to value creation logic of a company and it is usually opened up through different elements.

**Business-to-Business:** Describes a situation where two companies are forming the buyer-seller relationship, differentiates from consumer markets.

**Crowdsourcing:** Type of participative online activity in which an individual, an institution, a non-profit organization, or company proposes to a group of individuals of varying knowledge, heterogeneity, and number, via a flexible open call, the voluntary undertaking of a task.

**Value Creation:** Refers to the trade-off of benefits and sacrifices in regard to certain business relationship or product/service, can be both monetary and non-monetary.

# Factors Contributing to Success in B2B E-Marketplaces

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## INTRODUCTION

The globalization of economic activity and the emergence of the Internet have led to the appearance of a new model of business-to-business (B2B) known as the electronic B2B market or e-marketplace which facilitates the establishment of marketing relationships between buyers and sellers. When e-marketplaces first emerged, it was expected that they would improve the effectiveness and efficiency of inter-firm business, radically changing traditional procurement strategies, and restructuring the firms themselves, their supply chains, and the industries they belong to. After this phase of euphoria, however, which lasted into the second half of the year 2000, many international e-marketplaces have failed, and their effectiveness in general has been called into question. For these new e-marketplaces to be viable, clients have to perceive them as effective and efficient.

One of the first objectives in the present chapter will be to review the conceptual definition of e-marketplaces, to clarify what are the principal motivations for the participation of buyers and sellers, and to describe the different types of the e-marketplaces and their trading mechanisms. Other objective explores and identifies key underlying dimensions in service quality provided by an e-marketplace to its user. Finally, the main antecedents of customer loyalty are reviewed and identified, a model that provides insight into the relationships between these antecedents in the context of B2B e-marketplaces is proposed and those factors the users consider of most importance for their loyalty to be gained and maintained are identified.

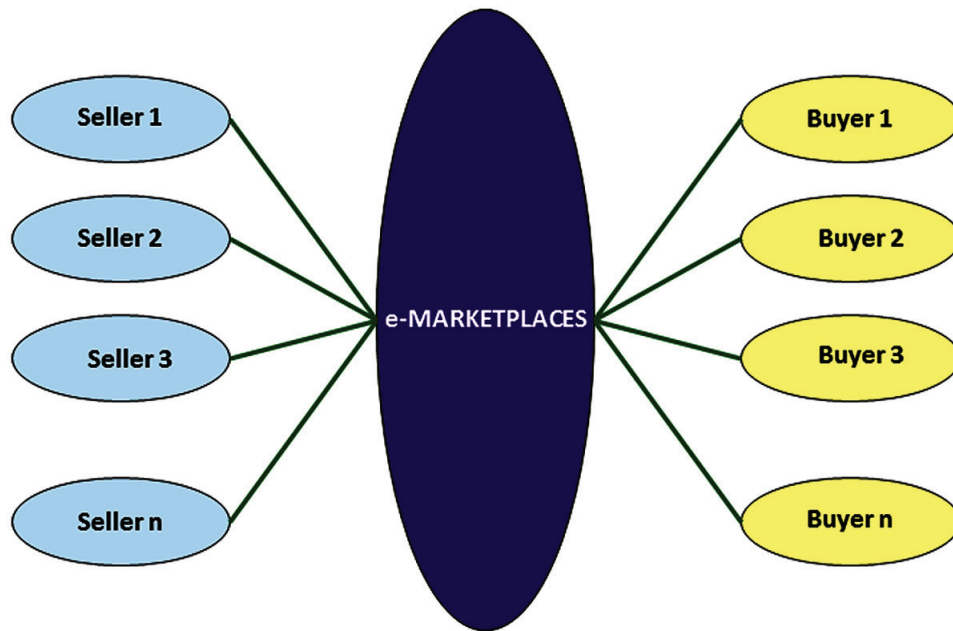
## UNDERSTANDING B2B E-MARKETPLACE: DEFINING AND CHARACTERIZING B2B E-MARKETPLACE

An e-marketplace is “a form of doing business that uses Internet technology to bring together multiple vendor and customer firms at a single Web site or platform (see Figure 1), that provides a variety of mechanisms enabling the parties to straightforwardly conduct their business transactions, that is led by a third party who is either neutral and unconnected to the exchange that is to take place, or one of the two parties involved (buyers or sellers), and that offers several value-added services that improve the relationships between buyers and sellers” (Janita & Miranda, 2013).

The e-marketplaces can be classified according to their transactional content as vertical or horizontal (Barrat & Rosdahl, 2002). Vertical e-marketplaces offer goods and services directly related to the production process of a specific industrial sector, for example *OneAero* (for the aviation industry) or *Chemical1.com* (for the chemical industry). Horizontal e-marketplaces offer indirect goods and services common to all industrial sectors, and necessary although not strategic to firms’ activities in different sectors of



Figure 1. E-Marketplaces



industrial activity (Popovic, 2002), for example *Eventoplus.com* (it offers services and products related to events) or *Adquira* (it offers indirect goods and services such as: office supplies, cleaning and safety services, etc.).

A second classification of e-marketplaces is in terms of ownership (Kaplan & Sawhney, 2000; Ordanini & Pol, 2001). Partial or consortia e-marketplaces are those created and run by one of the participants (buyer or seller), for example *Obralia* (building and construction industry, created by buyers). Impartial e-markets are those created and run by a neutral third party uninvolved in the exchanges that take place, for example *Mundoacero* (acero industry).

One can distinguish two types of market mechanism—static or systematic, and dynamic or unsystematic (Kaplan & Sawhney, 2000). Static mechanisms are characterized by prices having been negotiated prior to the exchange, and dynamic mechanisms by prices being negotiated at the time of the exchange. The main static mechanisms are the catalogue aggregation model and the buyer aggregation model. Examples of catalogue aggregation model includes *PlasticNet.com* (plastic industry) and *EcoSpainB2B* (food and beverage industry). The main dynamic mechanisms are the call for quotations model, the auction model, and real-time exchanges model. An example of marketplaces than use the call for quotations is *Mercatrans* (for the transportation industry), the auction model is used by *Aquanima* (for the multiples sectors) and real-time exchanges is used by *Agromaquinaria* (for the agriculture sector).

## CONCEPTUALIZATION OF E-SERVICE QUALITY AND DIMENSIONS

One finds the first definition of e-service quality (e-SQ) in Zeithaml et al. (2000, p.11): “e-SQ can be defined as the extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services.” Academic interest has been mainly directed to measuring the quality of e-services. Indeed, the quality of e-services has become a key factor in differentiating the services offered and in building a competitive advantage (Santos, 2003).

From a review of the literature on e-service quality, it is concluded that there is unanimity among researchers about its multidimensionality (Kim & Stoel, 2004; Fassnacht & Koese, 2006). Zeithaml et al. (2000, p.15) state: “consumers use basically similar dimensions in evaluating e-SQ (e-service quality) regardless of the type of product or service being evaluated on the Internet.” The critical question that arises, therefore, is what dimensions are the most important for the evaluation of service quality in e-commerce.

In that follows e-SQ in B2B has been grouped into six dimensions including information, efficiency, reliability, security, communication and value-added services is.

### **Information Dimension**

Many researchers recognize the importance that the characteristics of the information provided has for the perception of service quality. In particular, the information needs to be trustworthy—how much can one trust in the information provided by the site—timely, relevant, easy to understand, with a high level of detail and depth, sufficient, and presented in a suitable format (e.g., Barnes & Vidgen, 2002; Chakraborty et al., 2005; Fassnacht & Koese, 2006;). For the client, it is important to be able to get adequate information about the product or service. The website should therefore provide the details that the client needs (Ranganathan & Ganapathy, 2002), including technical information in the B2B field (Chakraborty et al., 2005). Research has also shown the need to make available information about the firm, its history, its mission, its financial statements, etc. (Kim et al., 2006), as well as about the industrial sector it belongs to (Chakraborty et al., 2005).

### **Efficiency Dimension**

In this dimension one can consider three aspects. The first aspect is indicative of how straightforward it is for the user the access to the resources the website offers. Firms may not have total control of this dimension since the client’s own computer system or connection to Internet may affect this dimension.

The second aspect refers to the usability, defined by Collier and Bienstock (2006, p. 264) as “the ability of a customer to find information or enact a transaction with the least amount of effort.” This aspect is an essential element of online business, since many clients may find the online environment intimidating and complex (Parasuraman et al., 2005; Santouridis et al., 2012).

The third aspect is related to the website’s design. It should be structured and well organized, offering sufficient information for the client to be able to compare products and make a good choice (Cristobal et al., 2007).

### **Reliability Dimension**

Reliability means having items in stock and delivering them in the promised time (Parasuman et al., 2005). The orders must be processed according to the specifications of the customers and should be free from defects or damage (Collier & Bienstock, 2006). In addition, the product the client receives must match the description on the website (Wolfenbarger & Gilly, 2003). It is important to tell the truth in what is offered, and only to make promises that can be kept (Parasuraman et al., 2005).

Recent researchs on quality management in e-commerce show that clients consider reliability as one of the most critical dimensions determining their perception of the quality of a website’s services (Barnes and Vidgen, 2002; Santos, 2003; Wolfenbarger & Gilly, 2003).

## Privacy and Security Dimension

This aspect is considered of particular importance due to the absence of physical contact between the firm and its clients in the purchasing process. Parasuraman et al. (2005, p. 220) define E-S-QUAL privacy as: “The degree to which the site is safe and protects customer information.” This dimension therefore refers with the risk perceived when making a purchase online (Kim et al., 2006). Researchers such as Ranganathan & Ganapathy (2002) distinguish between two types of security in online sales: financial and non-financial. While financial security is related to the communication of information online (e.g, number of a bank credit card), non-financial security refers to the non-disclosure of personal information (e.g., telephone number).

## Communication Dimension

Communication is related with keeping clients properly informed, and communicating with them in a language they can understand. Communication in e-services consists of both online communications (e-mail or chat) and traditional communications (telephone, fax, and conventional mail). A quality website should offer many forms of contact (Santos, 2003).

There is no unanimity in the items included in this dimension. Some authors use the term empathy to refer to the means by which the website provides the customer with care, individualized information, and attention (Cao et al., 2005). Others, emphasize the need to provide quick responses to customer requests (Wolfenbarger & Gilly, 2003). Some studies note the importance of providing personalized service in order to achieve a closer relationship with the customer (Bauer et al. 2005). The traditional American school (Parasuraman et al., 2005; Zeithaml et al., 2002) defines a scale which measures the responsiveness, compensation, and contact focused on resolving problems and customer complaints.

## Value-Added Services Dimension

Value-added services complement the e-marketplace’s usual transactions, and facilitate the completion of those transactions by delivering the product to the buyer and channeling the corresponding cash flows to the seller (Barrat & Rosdahl, 2002; Turban et al., 2002). Particularly stand out the financial services, including payment services such as electronic cards or credit cards (Turban et al., 2002). Logistics services can also be included in this dimension. As indicated by Ordanini & Pol (2001), these can include such complementary transaction processes as transport, storage, insurance, etc., resources which positively affect the cost process, and facilitate quality, speed, and proper delivery. Other possibilities offered by some e-marketplaces are integrative or collaborative services. These make it possible to design new products in collaboration, to forecast demand, or to integrate information from the e-marketplace into the user firm’s internal management systems. With these collaborative or integrative services, e-marketplaces are changing the structure of the value chain, and are starting to build networks forming complete value chains (Popovic, 2002).

## HIGHLIGHTS FOR CUSTOMER LOYALTY

The client loyalty is crucial to a firm’s survival, especially in the context of e-commerce. This loyalty is not achieved simply with technology, but also requires improving the customer’s experience.

The theoretical model, shown in Figure 2, identifies the quality, the image of e-marketplaces, the satisfaction and the value perceived by the customer, as antecedents of its loyalty in the context of B2B electronic marketplaces.

### **The Factor Corporate Image**

Corporate image is a perception of how an organization is held in the consumer's memory, and works as a filter that influences how the firm's operations are perceived (Grönroos, 1988). A positive experience over time will lead to a positive image (Ostrowski et al., 1993).

The different definitions of corporate image in the literature (Barich & Kotler, 1991; Bloemer & Ruyter, 1998; Nguyen & Leblanc, 2002; Spyropoulou, Skarmas & Katsikeas, 2010; etc.) present a common component –the idea of the representation, impression, thinking, perception, or mental meaning that the organization's public and its different stakeholders have about it.

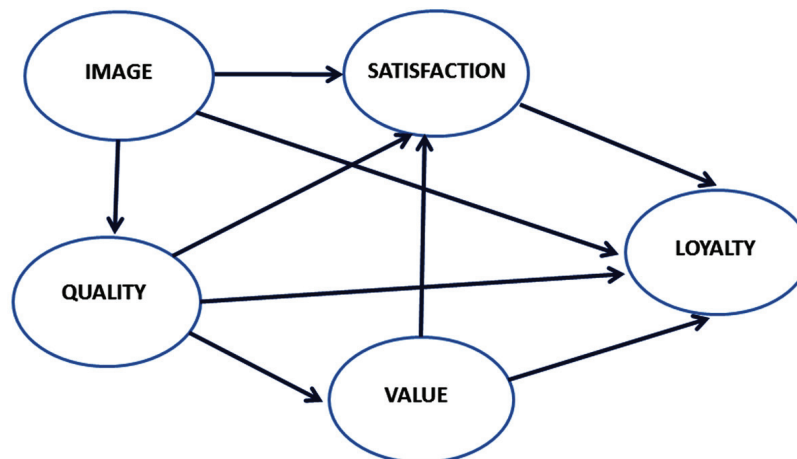
In the context of B2B e-commerce however, we could find no study examining the influence of image on other constructs such as quality, satisfaction or loyalty.

### **The Customer Satisfaction**

In the online environment, research on the parameters which influence consumer satisfaction when using the Internet is still in its early stages (Flavián et al, 2006). To go into any depth in examining customer satisfaction requires the concept to be clearly defined (Yi, 1990). Giese & Cote (2000) review twenty definitions proposed in the marketing literature and find that they include three essential components: an immediate response of variable intensity; a focus on the choice of a product, a purchase, or a consumable; and that the duration is usually limited.

There has been little research on this topic in the industrial context (Patterson & Spreng, 1997). Parasuraman (1998) notes that, to measure the satisfaction of industrial customers one needs to make the evaluation at different purchasing centres. In this sense Chumpitaz and Papararoidamis (2004, p.237) defines satisfaction industrial as “an overall evaluation of the total purchase, use and relationships experience with a product or service over time, as expressed by members of the buying decision centre”.

*Figure 2. Antecedents of customer loyalty*



## The Value Provided by the E-Marketplace

One of the most cited definitions of value is that of Zeithaml (1988, p. 14): “value is the consumer’s overall assessment of the utility of a product based on perceptions of what is received and what is given.” Although what they receive varies from one consumer to another (e.g., some may want quantity, others high quality, and others convenience) as also does what they hand over (e.g., some just spend money, others time and effort), value represents the exchange between what is given and what is obtained. In this same line Flint et al. (2002, p. 103), define as “judgements or evaluations of what the customer perceives he has received from the seller.”

The model, as shows in Figure 2, has been tested empirically with e-marketplaces in the Spanish construction industry in 2010. The instrument was measured on a 7-point Likert scale. The method used for the factor analysis was principal component extraction with varimax rotation using SPSS 15.0. The hypotheses were tested using a partial least squares (PLS) structural equations modeling (SEM) approach.

## SOLUTIONS AND RECOMMENDATIONS

Obviously it is no easy task for managers of e-marketplaces to attain a competitive advantage that will endure over time. Gaining customer loyalty is therefore a very important aspect for the future success of any one of them. This makes necessary to understand what are the guidelines or key factors that can lead to such loyalty.

One way for a B2B e-marketplace to achieve differentiation from the competition is to offer superior levels of quality. This strategy may become a motor to drive the firm to gaining and improving customer loyalty.

As a result of our research it is confirmed that in this context service quality is a multidimensional construct that consist of the following dimensions: reliability and security, usefulness of the information provided, value-added services, and efficiency.

In this sense, a crucial element for any improvement of the quality perceived is the “reliability and privacy” of the services provided by the e-marketplace. More specifically, a recommendation for e-marketplace managers would be to focus their effort on improving their users’ confidence. This is achieved by taking the appropriate steps to ensure that products are delivered on time, that they coincide with the description given on the website, and that they are in good condition. Also, users value that the market confirms the successful closure of transactions that have been undertaken via the market’s platform. In addition, the manager should create a client support area on the website through which any questions or problems that may arise for the user can be responded rapidly while, at the same time, the privacy of the users’ personal information is guaranteed.

The second element in order of importance to ensure the maintenance of long-term relationships with the user is the care of the e-marketplace’s image. Improvements to the image both contribute to ensuring the user’s loyalty and increase the user’s tendency to perceive greater service quality and satisfaction.

A third element that can ensure users return to the Web site to conduct their transactions is the added value they get from the services the site provides. Since a positive relationship between value and satisfaction was found, it can be concluded that value plays a mediatory role between quality and user satisfaction.

## **FUTURE RESEARCH DIRECTIONS**

The number of studies focus on the perceptions of e-marketplace users is very small. In our study we have only considered Spanish e-marketplaces from the construction sector. Looking ahead it would be interesting to extend this work to different industrial sectors and different cultures. It would also be interesting to analyze the perception of buyer users of electronic markets and analyze whether there are differences in the results considering the sociodemographic characteristics of the participating companies. Finally, it may be interesting to analyze the effect of the nature—vertical or horizontal, partial or impartial—of the e-marketplaces on the final results.

## **CONCLUSION**

With respect to the implications for e-marketplace managers, we suggest that one way to differentiate oneself from the competition is to develop strategies that are directed at improving the e-marketplace's image and to strive to offer superior levels of quality. Such efforts can be expected to directly foster user loyalty. With respect to quality in particular, the present study has identified four key factors that managers need to bear in mind to achieve and maintain high levels of quality – reliability and privacy, efficiency, added value, and information usefulness. Managers need to develop marketing strategies that contribute to building and consolidating relationships with their users, for example, facilitating the establishment of open lines of communication aimed at ensuring the quality of the services that are provided.

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## KEY TERMS AND DEFINITIONS

## E

**E-Loyalty:** A favourable attitude of the customer towards the e-business resulting from repeated purchasing behaviour.

**E-Marketplace:** A form of doing business that uses Internet technology to bring together multiple vendor and customer firms at a single Web site or platform in order to make trade.

**E-Service Quality:** The extent to which a website facilitates efficient and effective shopping, purchasing, and delivery of products and services.

**Horizontal E-Marketplace:** It is an e-marketplace that offer indirect goods and services common to all industrial sectors.

**Privacy and Security Web:** The degree to which the site is safe and protects customer financial and non-financial information.

**Reliability Web:** The extent to which the product the client receives matches the description on the website, and it is delivered in the promised time.

**Value-Added Services:** Any services that complement the e-marketplace's usual transactions, and facilitate the completion of those transactions by delivering the product to the buyer and channelling the corresponding cash flows to the seller.

**Vertical E-Marketplace:** It is an e-marketplace that offer goods and services directly related to the production process of a specific industrial sector.