

# Happy Users, Grumpy Bosses: Current Community Engagement Literature and the Impact of Support Engagement in a B2B Setting on User and Upper Management Satisfaction

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## INTRODUCTION

Co-creating value is a widely acknowledged concept on how firms and customers work together to create value. Beyond creating products and solutions that might be more tailored to specific customer needs, it may also increase the engagement of customers. Researchers have acknowledged that customer co-creation is a specific element of customer engagement (i.e., “the customer’s behavioral manifestations that have a brand of firm

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focus, beyond purchase, resulting from motivational drivers”, Van Doorn et al. 2010, p. 254). Customers may not only co-create value in the product or service delivery but may also be engaged in the after-sales support specifically through online support communities. In these support communities, customers not only receive support service from other customers but they also engage with others in an effort to solve other community member problems (Wiertz and de Ruyter 2007). This type of community engagement takes over the service functions traditionally provided by the host firm, often times with little cost to the firm (Bone et al. 2015).

Offering support services is a critical component of successful business relationships (e.g., El Sawy and Bowles 1997; Karpen et al. 2015). In line with marketing literature, we define service support as customer assistance in learning about the product and its usage opportunities and solving product-related issues (e.g., Das 2003; Dholakia et al. 2009). Given technological advancements, delivering customer support is evolving from traditional one-to-one support *service requests* (i.e., logging a formal service demand on a one-to-one basis, for instance, through phone consults) toward one-to-many web-based support services, which can be both passive *online knowledge consultation* (i.e., consulting a static online knowledge repository, such as a frequently asked questions section) and *active community support* (i.e., participating in an interactive online support community, for instance, by posting questions) (Dholakia et al. 2009; Nambisan 2002).

Managerial interest in organizing and facilitating web-based support services, online communities in particular, to deliver support is thriving (Nambisan and Baron 2010), triggered by the possibility to invest in customer relationships and to obtain cost advantages (Algesheimer et al. 2005). Recent research suggests that online community support is cheaper to deliver than traditional support (Dholakia et al. 2009; Rosenbaum 2008), and also reduces the usage of more costly traditional support through service requests (Bone et al. 2015). Also, community usage is documented to lead to stronger customer relationships, such as increased likelihood to recommend (Gruen et al. 2006). While set in a brand community, Bruhn et al. (2013) demonstrate that the quality of customer-to-customer (C2C) interactions in B2B brand communities positively impacts the functional, experiential, and symbolic brand community benefits. Online communities tailored to customer support but, also in general, are heavily studied recently.

In this chapter we contribute to the literature by providing an overview of community research. From this overview we conclude that online community research is a mature field and studies cover a wide range of

settings (e.g., B2B as well as B2C) and phenomena (e.g., brand-building communities as well as sharing communities). Nonetheless, we notice that all current studies are always investigated at the level of the individual user, even in B2B settings (e.g., Bone et al. 2015). However, we argue that for engagement to have an impact in a B2B setting, it is important that decision-makers are incorporated into the model. Therefore, we conducted an empirical illustrative study to investigate whether there is value to look beyond the individual users when studying online communities. B2B organizations have multiple organizational layers, as the individual who uses the support services (which is not necessarily the individual who uses the functional product for which support is requested) is often distinct from the individual(s) responsible for purchase decisions. Therefore, for support usage in a B2B setting to have an effect on beneficial and lasting corporate relationships, the benefits of obtained support (e.g., increased knowledge or efficient problem solving) and/or awareness of benefits must transfer from the individual support user to the decision-maker within the customer organization. This is illustrated by quotes from the business press documenting that in order to reach engagement in B2B settings, you must know your audience and reach multiple individuals within an account (Gletcher 2016). In additional, popular press quotes that it is imperative to understand that users need to do their job and as community owner, you must “think about how you can make them look like rockstars in front of their peers and managers” (Mashable 2011). Accordingly, our second contribution to literature is to take service support research beyond the individual user<sup>1</sup> by investigating the effect of different types of service activity (i.e., service requests, consulting online knowledge database, and active community support) on the customer satisfaction of users as well as its influence on upper management decision-makers.

## LITERATURE OVERVIEW

In Table 7.1 we provide an overview of selected and exemplary literature on community. We do not claim that our overview is exhaustive (given the contemporary interest in online communities as a research topic such an overview would be virtually impossible to provide), yet we included the most-cited exemplary papers within the domain, and we complemented these key papers with some of the most recent work. We classified the study based on the type of community that is investigated, which setting is investigated, and the unit of analysis. We also show the main findings of

**Table 7.1** Exemplary overview of community literature

<i>Study</i>	<i>Type of community</i>	<i>Setting</i>	<i>Unit of analysis</i>	<i>Main finding</i>
	<i>Brand advocacy (social)</i>	<i>B2C</i>	<i>Individual user</i>	
	<i>Product support (informative)</i>		<i>Upper management decision-maker</i>	
Algesheimer et al. (2005)	✓	✓	✓	Community engagement, on the positive side, leads to participation, continuation, and recommendation intentions. But on the negative side community engagement leads to normative pressure and ultimately reactance
Algesheimer et al. (2010)	✓	✓	✓	Community usage makes customers more efficient and conservative; they, for instance, spend less money
Bagozzi and Dholakia (2006)	✓	✓	✓	Participation in online support community leads to intentions of additional positive behaviors (e.g., spending money, co-creation) toward the company
Bone et al. (2015)	✓	✓	✓	Usage of online community support decreases usage of the more costly traditional offline customer support
Brodie et al. (2013)	✓	✓	✓	Customer engagement leads to connection and emotional bonding, customer empowerment, customer loyalty and satisfaction, trust, and commitment
Bruhn et al. (2013)	✓	✓	✓	Brand trust positively impacts brand community trust

Chan et al. (2015)	✓	✓	✓	If customers submitted ideas in a community before their interaction with the company, operating the community becomes more important and interaction with other customers becomes less important
De Almeida et al. (2014)	✓	✓	✓	Community diversity facilitates learning and hinders social identification, whereas freedom of expression only facilitates learning
De Válek et al. (2009)	✓	✓	✓	Virtual communities among others serve as reference groups that have a more heterogeneous character than traditional reference groups
Dholakia et al. (2009)	✓	✓	✓	Functional and social benefits can be derived from community participation
Homburg et al. (2015)	✓	✓	✓	Consumers respond with diminishing returns to active firm engagement in an online community, in particular for conversations addressing functional needs
Khansa et al. (2015)	✓	✓	✓	Community participation is determined by incentives, membership characteristics, and past behavior
Krush et al. (2015)	✓	✓	✓	Sharing in online communities is a form of positive marketing. Sharing can occur without feelings of caring and without individual-level reciprocity
Leal et al. (2014)	✓	✓	✓	Communities can act as a strong reference group

(continued)

**Table 7.1** (continued)

<i>Study</i>	<i>Type of community</i>		<i>Setting</i>		<i>Unit of analysis</i>		<i>Main finding</i>
	<i>Brand advocacy (social)</i>	<i>Product support (informative)</i>	<i>B2C</i>	<i>B2B</i>	<i>Individual user</i>	<i>Upper management decision-maker</i>	
Lee and Van Dolen (2015)	✓		✓			✓	Community company owner's management style influences collective sentiment in the community. Counterintuitively, growing positive sentiment decreases future participation, whereas growing negative sentiment increases it
Manchanda et al. (2015)	✓		✓			✓	Customers that are active within communities spend more, especially those customers that contribute content by posting and those with more social ties in the community
Mathwick et al. (2008)		✓	✓			✓	Social capital determines the informational and social value is derived from a community, which in turn impacts community commitment
McAlexander et al. (2002)	✓		✓			✓	Brandfest participation positively impacts attitude toward the brand, the company, and fellow customers
Nambisan and Baron (2007)		✓				✓	Customers' interactions in communities (which can be both positive and negative) influence their perceptions of the firm
Porter and Donthu (2008)	✓		✓			✓	Fostering membership embeddedness is the most fruitful way for firms to operate a community, but this can be a double-edged sword

Schau et al. (2009)	✓	✓	✓	✓	Brand communities have 12 common practices through which value is created
Thompson and Sinha (2008)	✓	✓	✓	✓	Brand community participation decreases adoption of new products from competing brands
Zhou et al. (2012)	✓	✓	✓	✓	Brand attachment fully mediates the relationship between brand community commitment and brand commitment
Zhou et al. (2013)	✓	✓	✓	✓	Viewing community posts leads to community participation intention
Zhu et al. (2012)	✓	✓	✓	✓	Online community participants make riskier financial decisions than non-participants
<b>This Project</b>	✓	✓	✓	✓	

each study. We will not elaborate on each of the studies, but the overview table clearly shows strong attention for communities in marketing and that researchers have studied multiple processes and outcomes.

Based on Table 7.1 we can draw a number of conclusions regarding the current status of community engagement literature. The field is heavily studied, and therefore it is unsurprising that community engagement is investigated in various settings (in B2B as well as B2C environments) and the communities studied have various purposes (product support as well as brand communities). Studies show primarily positive, but somewhat mixed outcomes (e.g., social value, but also normative pressure). We also conclude that current outcomes of community engagement are always investigated at the level of the individual user, even in B2B settings (e.g., Bone et al. 2015).

However, we argue that for engagement to have an impact in a B2B setting, it is important that decision-makers are incorporated into the model. Therefore, we next conducted conceptual development (including hypotheses) and an empirical study to investigate whether there is value to look beyond the individual users when studying online communities.

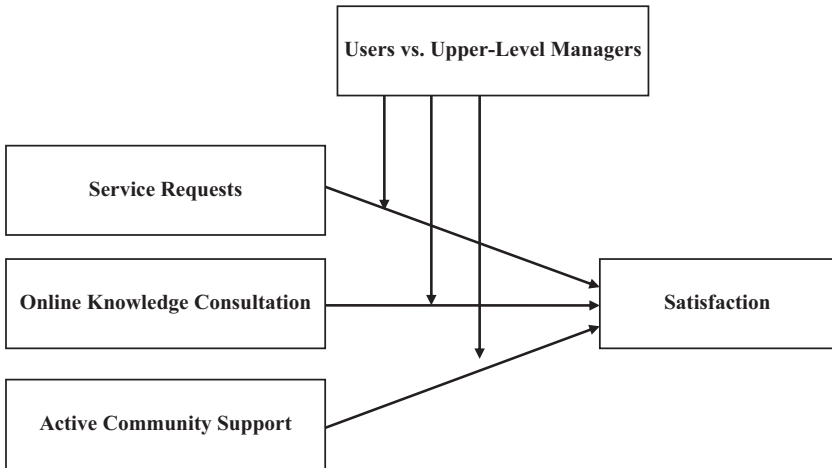
## CONCEPTUAL DEVELOPMENT AND HYPOTHESES

In our empirical part, we investigate support community engagement in a B2B community on user and upper management satisfaction. Next to the impact of active community support usage, we seek to understand the impact of traditional service requests and online knowledge consultation on customer satisfaction. Although customers might use alternative support channels (e.g., Google search), we focus our attention on the support channels which are directly under the control of the focal service provider. Thus, we relate three distinctive types of service activity (i.e., traditional service requests, online knowledge consultation, and active community support) to customer satisfaction and argue that these relationships vary across individuals working at the user versus management levels, influenced by job function relevance. See Fig. 7.1 for our conceptual framework.

### *Sources of Service Support*

*Service Requests* Traditionally, support has been delivered to customers on a one-to-one basis through service requests, in which the customer reports a problem to the company and a member of the company's support staff works together with the customer to solve this problem. A service request occurs when a customer contacts the service department of a service





**Fig. 7.1** Conceptual framework

supplier, thereby logging a formal service request. Typical methods to do so include calling the helpdesk and receiving phone consults, email support, and onsite visits (Wiertz and De Ruyter 2007). This labor-intensive way of delivering customer support is costly since there is a great deal of repetitiveness due to solutions being distributed on an individual basis (Bone et al. 2015) and obtained solutions still need to be disseminated further throughout the customer organization. On the other hand, from the receiving customer organization's perspective, more labor-intensive customer support might be yielding better service quality, due to involvement of support staff that understands the customer organization's nuances and thereby tailoring solutions (Rust and Huang 2012). Research has argued that support users will perceive the service provider's staff members (in comparison to peer customers) to be the highest experts and to provide the most reliable answers (Dholakia et al. 2009). However, research also documents that the mere act of having to log a service request is often not liked by customers, since it typically indicates a service failure (e.g., Bitner et al. 1994; Challagalla et al. 2009). The non-performance of a supplied product can lead to significant losses (Markeset and Kumar 2005); potential system downtime due to service failures leads to a significant reduction in B2B company revenues (CA Technologies 2011). Not surprisingly given the undesirable atmosphere they are in, customers typically have a

negative mind-set when (needing to) contacting the service provider (Challagalla et al. 2009) and thus evaluate the service requests negatively. This type of engagement takes the least effort on the customer's part, but still requires them to connect to the firm, clearly articulate their problem, and work with the firm to find a solution.

*Online Knowledge Consultation* Technological advancements have altered the traditional way support is delivered to customers (Rust and Huang 2012). Information technology made it possible to go from a one-to-one support model toward one-to-many web-based support services (Wiertz and De Ruyter 2007). Instead of on an individual basis, solutions are disseminated on a global basis by making them visible and accessible to other customers. Customers in turn can be passively or actively involved in one-to-many web-based support. On the passive side, they can go to the company's online knowledge base to solve their product issues. Instead of contacting a support employee, customers can browse a web-based support portal containing a static knowledge repository, which "can only be searched and accessed for support service but cannot be added to, changed, or altered" (Bone et al. 2015, p. 25) (e.g., searching for key terms, reading the frequently asked questions section of the service provider). As such, online knowledge consultation is a self-service channel in which customers can obtain service support without the service provider's direct interference (Negash, et al. 2003). From the service provider's perspective, this is a lower-cost support channel due to savings on support staff costs (Dholakia et al. 2009; Rosenbaum 2008). From the customer organization's perspective, this support channel has the potential to solve problems in a timely manner, since recurring problems do not have to be solved from scratch and/or individually by a staff member of the service provider (El Sawy and Bowles 1997). In addition, besides problem resolution, online knowledge consultation also enables learning about the product and its usage opportunities (Bone et al. 2015). Through static knowledge repositories, service providers can transfer knowledge and provide more timely dissemination of information to stakeholders (e.g., their customers). In static knowledge repositories, solutions to previous problems are ubiquitous, so that support users can access them again and hence gain in flexibility of solution implementation (Piccoli et al. 2001) and do not require much internal information dissemination throughout the customer organization. Also, the customer organization can learn about and prevent new unanticipated issues. Therefore, consulting online knowledge does not necessarily mean

that a customer organization already faces a service failure. Contrary to service request activity, online knowledge consultation offers faster problem resolution and learning opportunities (Bone et al. 2015), which make customers likely more positive toward online knowledge consultation. However, there are also some innate drawbacks to this support model. For instance, solutions might not be fine-tuned to the customer's situation, may be out-of-date, difficult to navigate, or may take considerable time investments to search for the correct solution (Bone et al. 2015). Further, more complex problems often found in B2B situations are not easily solved via simple online knowledge repositories.

*Active Community Support Usage* To overcome some of the limitations associated with passive web support, customers can actively be involved in peer-to-peer problem solving communities. In such communities, they can ask questions and/or reply to questions of others. Similar to online knowledge consultation, active community support usage offers faster problem resolution. An online support community has the potential to offer real-time solutions for new problems (Dholakia et al. 2009). For instance, for novel problems other support channels might not be available or updated, yet community users could already be a few steps ahead in problem resolution. A support community enables users to tap into a large knowledge network (i.e., wisdom of the crowd) at any point in time (Bone et al. 2015). However, factors such as low response rate or contradictory answers could hamper this positive impact. In addition, community support not only allows learning opportunities but also goes a step further by allowing dynamic and interactive learning. A support community facilitates active exchange with the 'teacher' (be it a peer customer or a staff member of the service provider) (Piccoli et al. 2001). Contrary to static knowledge repositories, active involvement allows shared understanding and thereby greater insights (Porter et al. 2011), which is often necessary for effective learning with respect to problem resolution and prevention (Nambisan and Baron 2010). Because of this active involvement, support community usage goes beyond self-servicing toward customer co-creation in service support (Bone et al. 2015). In comparison to alternative means of obtaining support, customers have to perform more tasks on their own and thereby make more investments to obtain support (Wiertz and De Ruyter 2007). However, since customers co-create value with the company, they gain additional control over support and have the ability to improve the service offering (Chan et al. 2010). Furthermore, besides providing mere utilitarian

value, active community support allows participants, particularly in a high-involvement setting, to experience additional benefits from the co-creating experience, such as social status gains (e.g., Bruhn et al. 2013; Karpen et al. 2015). Such an exceptional service experience will positively impact customer retention (Bolton et al. 2006). Hence, active community support engagement offers even further increased efficiency of problem resolution, interactive learning opportunities, and a favorable service experience. Due to this favorable experience, customers likely evaluate active support community usage positively; recent research indicates a wide variety of positive effects of active community usage, such as increased recommendation likelihood (Gruen et al. 2006) and repurchase intentions (Bagozzi and Dholakia 2006).

### *Job Function Heterogeneity*

As apparent from our previous reasoning, each distinctive support channel operated by a focal service provider (i.e., service requests, online knowledge consultation, and active community support) has its own inherent benefits and drawbacks. In general, service requests are negatively evaluated, since they typically indicate a service failure (e.g., Challagalla et al. 2009). In contrast, online knowledge consultation and active community support usage are typically valued due to increased efficiency and, especially for community usage, the offering of a favorable service experience (e.g., Dholakia et al. 2009). As we will argue next, we expect that job function influences the evaluation of the distinctive benefits and drawbacks of various ways of obtaining support. Users need to solve their customer organization's support issues, whereas upper-level managers need to manage, supervise, and oversee their staff members' behavior (Eisenhardt 1989). Upper-level managers will primarily pursue the customer organization's interest, whereas their staff members (i.e., users) will primarily pursue their own (job function) interest.<sup>2</sup> Upper-level managers should make sure that the interests of the customer organization and the individual users are aligned. These job functions have implications regarding how both users and upper-level managers perceive the various ways of obtaining support, which we will discuss next.

*Users* User's core need is solving their customer organization's support needs fast and adequate (Van der Heijden et al. 2013). They thereby likely employ a short-term orientation toward support by focusing on day to day issues. Due to this short-term orientation, users may trade quality for

speed when dealing with their customer organization's support issues. They need to solve the actual issues and would like to do this quickly. Since increased efficiency of problem resolution is a prime benefit of web-based support (e.g., Nambisan and Baron 2010; Rust and Huang 2012), users will positively evaluate web-based support. In contrast, service request may yield higher perceived quality due to involvement of supplier support staff (Dholakia et al. 2009; Rust and Huang 2012), yet may be less efficient. Since users are the ones actually dealing with their organization's support issues, users will experience the negative mind-set associated with having to log a service request.

In addition, besides their core job task, individual users are also interested in their own personal values and needs, which can be considered non-task jobs (Webster and Wind 1972). In particular active community support yields the ability to satisfy the users' own personal values and needs, by providing the opportunity to obtain side benefits from customer support. Users have to invest resources (e.g., time, effort) in order to participate in and contribute to the community (e.g., by helping other customers), without this aiding them directly in their core job. However, in return for their community investments, users not only gain technological knowledge but also psychological (e.g., emotional) and/or social benefits (e.g., by gaining community status) (Hoyer et al. 2010). As such, active community usage not only delivers purely informational value but also a favorable service experience (Mathwick et al. 2008; Nambisan and Baron 2007). This benefits the individual user, but not necessarily the customer organization he or she is working for.

*Upper-level manager/s.* In contrast to users, upper management is typically not directly involved in daily and regular service support and problem resolution. Instead of directly experiencing the benefits of customer support, employees operating at higher levels simply need to know that support channels are helpful for his or her staff in order to assess whether investments are paying off, especially given the predominant contractual nature of B2B problem resolution (Bone et al. 2015). Given their different functions within the customer organization, the core benefits upper-level managers are looking for in support are different from the core benefits users are looking for. Whereas users might primarily want fast solutions, upper-level managers additionally also want solutions that are meeting future business needs at a profitable cost level, reflecting a tension between short-term (which are more likely pursued by users) and long-term (which are more likely pursued by upper management) goals (Katzenbach and Santamaria 1999).

As stated before, within the typical trade-off between automated and fast support on the one hand, and high-quality support on the other hand (Rust and Huang 2012; Van der Heijden et al. 2013), community support leans toward the former, rather than the latter (Dholakia et al. 2009). In contrast, traditional service requests might be more time-consuming, yet yield higher perceived quality of support, due to the involvement of supplier support staff understanding the customer organization's particularities, sensitivities, and future needs (Dholakia et al. 2009; Rust and Huang 2012). Since upper-level managers are typically not the ones solving their organization's actual support issues, they will not personally experience the negativities and frustration of having to deal with service request issues. They are therefore neutral toward this aspect of service requests, yet their quality perceptions may be lowered. Although we think that upper-level managers will evaluate service requests less negatively, we do not think this goes as far as upper-level managers evaluating service requests positively. The general principle, however, still holds that service requests typically are surrounded by negative connotations and are thought of as service failures (e.g., Bitner et al. 1994; Challagalla et al. 2009), such that upper-level managers will still evaluate service requests negatively.

With respect to active community usage, since upper-level managers do not personally experience additional (psychological and social) benefits from customer support, they are likely attaching less value to these benefits. In fact, upper-level managers might even perceive potential dark sides of active support community usage. First, their staff members (i.e., users) invest valuable company resources (e.g., their time) in order to obtain side benefits of community support, while these investments have no direct or tangible payoffs for the customer organization. Since the job of upper management is to oversee the customer organization's interest (e.g., Eisenhardt 1989), upper-level managers will attach less or even negative value to citizenship behavior in the support community. While a manager may see value in their employees receiving support from the community, they may not see value in their employees engaging in helping behavior for those in the community but not likely from the firm. From a rational customer organization perspective, such behavior has a negative cost-benefit trade-off, due to potential knowledge leakage, waste of time, and even leakage of human capital. Upper management may treat their knowledge as proprietary goods (i.e., intellectual capital) and therefore be reluctant to knowledge spoilage in web-based support (Wasko and Faraj 2000). In addition, upper management may, correctly or not, regard their employees'

community activity as “socializing and detracting from work” (Wasko and Faraj 2000, p. 171) and believe that time spent taking up additional service roles could be better spent on more important tasks for the customer organization (Van der Heijden et al. 2013). Also, in extreme cases, highly qualified staff members may reveal their qualifications and may become susceptible to competitive job offers.

*Hypotheses*

To recap, given their different job functions and reflecting a classic principal-agent tension, users and upper-level managers employ different perspectives on customer support. In light of the above arguments, we hypothesize the following (see Table 7.2 for an overview of types of support, their definition, and anticipated effects):

- H1a:** *The effect of service request activity on satisfaction is negative for users.*
- H1b:** *The effect of service request activity on satisfaction is negative for upper-level managers.*
- H2a:** *The effect of online knowledge consultation on satisfaction is positive for users.*

**Table 7.2** Overview of types of support and anticipated effects

<i>Kind of support</i>	<i>Definition</i>	<i>Hypothesized effect on users/reasoning</i>	<i>Hypothesized effect on upper-level managers/reasoning</i>
Service requests	Logging a formal service demand on a one-to-one basis, for instance, through phone consults	- / Service requests are typically indications of service failure and other negativities	- / Service requests are typically indications of service failure and other negativities
Online knowledge consultation	Consulting a static online knowledge repository, such as a frequently asked questions section	+ / Problems can be solved quickly	- / Obtained solutions might be of lesser quality
Active community support usage	Participating in an interactive online support community, for instance, by posting questions	+ / Problems can be solved quickly and side benefits (such as status gains) can be obtained	- / Obtained solutions might be of lesser quality and side benefits benefit the entire firm

- H2a:** *The effect of online knowledge consultation on satisfaction is negative for upper-level managers.*
- H3a:** *The effect of active community support usage on satisfaction is positive for users.*
- H3b:** *The effect of active community support usage on satisfaction is negative for upper-level managers.*

## AN ILLUSTRATIVE EXAMPLE

We conducted an empirical study to test our hypotheses and present it here as an illustrative example of how both users and upper management value the various ways their organization obtains customer support. We use the overall customer organization as the unit of analysis and relate, through multiple regression equations, a customer organization's support usage to satisfaction outcomes of employees operating at various corporate levels within the organizational hierarchy of the customer organization (i.e., individual users and upper-level managers).

### *Data and Sample*

Data were collected in partnership with a large Fortune 100 supplier of high-tech services and merged from multiple sources over a longitudinal period of time. The data covers a representative group of 7865 customer organizations, all with access to each distinct support channel offered by the Fortune 100 high-tech service company, operating in a wide variety of industries and using various products and services offered by the Fortune 100 company. Data include behavioral activities, aggregated over all individuals working within the same customer company, regarding the support activity of these customer organizations and survey data regarding their satisfaction. Using a common identifier, we merged service request logs (captured from the service provider's log files), the customer organizations' online knowledge consultation (captured from clickstream data), the customer organizations' active support community usage (also captured from clickstream data), and a customer relationship survey. Since we relate support behavioral data to survey outcomes, we preclude common method bias problems.

The customer relationship survey, which contains our dependent variable, is targeted at employees operating at various corporate levels performing various job roles within the organizational hierarchy of the customer organization. We classified those who self-reported their job level as individual contributor (i.e., functional and technical users) or as manager (who



at least used support themselves once) as users and those who indicated their job level as director or as manager (but did not use support themselves at least once) as upper-level managers. Discussions with the Fortune 100 high-tech service company revealed that respondents who classify themselves as managers can be either lower-level managers seeking service or community support themselves or upper-level managers who do not do so. We therefore distinguished between managers that used or did not use support at least once. In addition, we excluded those who indicated their job level as executive (they are, according to the Fortune 100 high-tech service company, too far removed from daily operations) from our sample. Although the Fortune 100 company administers the customer relationship survey on a biquarterly basis, their basic sampling policy is to survey one job role per customer organization and to survey each customer organization only once, in order to reduce burden on their customers. Therefore, to ensure a representative and substantial sample, we pooled multiple time periods by relating support activity of 2–3-month time frames (Q3 2011 or Q1 2012) to satisfaction outcomes measured in the succeeding 3-month time frame (Q4 2011 or Q2 2012). These time periods were selected on the basis of the start of the online community. Note that in order to test causal relationships, we measured support activity in one time period ( $t_1$ ) and measured satisfaction outcomes in a subsequent time period ( $t_2$ ).

### *Measures*

*Dependent Variable* Our dependent variable is customer satisfaction (with the firm). Customer satisfaction is measured with a survey item on a 10-point scale. Since customer satisfaction is a straightforward construct, we used a single-item survey measure (cf. Rossiter 2002).

*Independent Variables* Our independent variables are captured with behavioral data and reflect the various ways of obtaining customer support. We measured *service requests* with a single-item measure: the total number of opened and closed service requests. We measured *online knowledge consultation* with three items (which we combined into factor scores): the number of search queries, the number of community logins, and the number of note reads. We also used a multi-item scale to measure *active community support*. This scale contained the following items (we also combined these items into factor scores): number of threads started in the support community, number of questions asked in the support community, and number of replies given in the support community.

**Table 7.3** Summary of measures

<i>Construct</i>	<i>Measure</i>	<i>Time period</i>	<i>Level</i>
Satisfaction	Survey item (“Overall, how satisfied are you with company X as a provider?”) on a 10-point scale	Q4 of 2011 and Q2 of 2012	Upper-level managers
Service request	Number of opened and closed service requests (log-transformed)	Q3 of 2011 and Q1 of 2012	Customer organization
Online knowledge consultation	Number of search queries (log-transformed)	Q3 of 2011 and Q1 of 2012	Customer organization
	Number of note reads (log-transformed)	Q3 of 2011 and Q1 of 2012	Customer organization
	Number of community logins (log-transformed)	Q3 of 2011 and Q1 of 2012	Customer organization
Active community support	Number of threads started (log-transformed)	Q3 of 2011 and Q1 of 2012	Customer organization
	Number of replies given (log-transformed)	Q3 of 2011 and Q1 of 2012	Customer organization
	Number of questions asked (log-transformed)	Q3 of 2011 and Q1 of 2012	Customer organization

We log-transformed all behavioral items, since they were non-normally distributed (we do this for means of normality, which is amongst others a requirement for the factor analysis we perform later on; Byrne 2001).<sup>3</sup> An overview of all measures and associated data sources appears in Table 7.3; the overview of the descriptive statistics and correlations of variables is in Table 7.4.

### *Modeling Approach*

To test our hypotheses, we make use of a three-step approach. First, we use factor analysis using oblique rotation to develop and verify a multi-item scale for online knowledge consultation and a multi-item scale for active community usage.<sup>4</sup> Second, we estimate a pooled regression equation relating a customer organization’s service request activity, online knowledge consultation, and active community support usage to customer satisfaction. Third, after determining using a Chow test that it is not justified to pool over job levels, we estimate two separate regression equations for the two job level groups: one regression for the user group (with a sample size of 4323 customer organizations) in which we relate a customer

**Table 7.4** Descriptive statistics and correlation matrix

	<i>Mean</i>	<i>SD</i>	<i>1.</i>	<i>2.</i>	<i>3.</i>	<i>4.</i>
1. Satisfaction	6.83	1.86	1.00			
2. Service request	-1.20	4.76	-0.10***	1.00		
3. Online knowledge consultation	0.00	1.00	-0.09***	0.83***	1.00	
4. Active community support	0.00	1.00	0.01	0.19***	0.17***	1.00

The mean and standard deviation for online knowledge consultation and active community support usage are 0 and 1, respectively, since these scales are based on *Z*-scores

\*\*\* $p < 0.01$

organization's support usage to their users' satisfaction and another regression for the upper-level manager group (with a sample size of 3542 customer organizations) in which we relate a customer organization's support usage to their upper-level managers' satisfaction.

## RESULTS

### *Factor Analysis*

By means of a factor analysis with oblimin rotation, we reduced the dimensionality of our online knowledge consultation and active community usage scales. The factor analysis with good Kaiser-Meyer-Olkin (KMO) scores confirmed our scales; all items loaded substantially on their target factor (average factor loading 0.97, minimum factor loading 0.89) and did not load on their nontarget factor (all cross-factor loadings below 0.30) (see Table 7.5). Cronbach's  $\alpha$  indicates that our scales are "excellent" (Cronbach's  $\alpha_{\text{online knowledge consultation}} = 0.99$ ; Cronbach's  $\alpha_{\text{active community usage}} = 0.94$ ). We used factor scores for online knowledge consultation and active community usage in our subsequent analyses.

### *Regression Results*

We pooled our sample over users and upper-level managers and estimated a pooled regression equation relating a customer organization's service request activity, online knowledge consultation, and active community support usage to customer satisfaction. Results in Table 7.6 indicate that

**Table 7.5** Multi-item scale validity and factor loadings

<i>Scale (Cronbach's <math>\alpha</math>)</i>	<i>Items</i>	<i>Item loading</i>
Online knowledge consultation (Cronbach's $\alpha = 0.99$ )	Number of search queries (log-transformed)	0.99
	Number of note reads (log-transformed)	0.99
	Number of community logins (log-transformed)	0.98
Active community usage (Cronbach's $\alpha = 0.94$ )	Number of threads started (log-transformed)	0.98
	Number of replies given (log-transformed)	0.88
	Number of questions asked (log-transformed)	0.98

a customer organization's service request activity significantly decreases satisfaction ( $\beta = -0.04, p < 0.01$ ), a customer organization's online knowledge consultation does not significantly impact satisfaction ( $\beta = -0.02$ , n.s.), and a customer organization's active community support usage increases satisfaction ( $\beta = 0.06, p < 0.01$ ). A Chow test indicates that the effects of service request activity, online knowledge consultation, and active community support usage differ between users and upper-level managers (Chow  $F$  statistic (4, 7857) = 18.10  $p < 0.01$ ).

Therefore, we estimated separate regression equations for users and upper-level managers. As can be seen from Table 7.6, a customer organization's service request activity significantly decreases user satisfaction ( $\beta = -0.05, p < 0.01$ ), in support of  $H_{1a}$ . Supporting  $H_{1b}$ , service request activity also significantly decreases satisfaction of upper-level managers ( $\beta = -0.03, p < 0.05$ ). We also formally compared the coefficients of service request activity for users and upper-level managers by means of a  $\chi^2$ -difference test.<sup>5</sup> Results indicate that the satisfaction implications of service request activity do not differ significantly between users and upper-level managers ( $\Delta\chi^2(1) = 1.65$ , n.s.). With respect to online knowledge consultation, surprisingly, a customer organization's online knowledge consultation does not increase user satisfaction, although the coefficient is in the hypothesized direction ( $\beta = 0.03$ , n.s.) (contrary to  $H_{2a}$ ). However, online knowledge consultation significantly decreases upper management satisfaction ( $\beta = -0.13, p < 0.05$ ), in support of  $H_{2b}$ . Furthermore, users and upper-level managers

**Table 7.6** Impact of customer organization's support channel usage on satisfaction

	<i>Pooled sample</i>	<i>User group</i>	<i>Upper-level managers</i>
<b>Independent variables</b>			
Service request activity	-0.040 (0.008)***	-0.049 (0.010)***	-0.028 (0.012)**
Knowledge consultation	-0.021 (0.037)	0.031 (0.050)	-0.128 (0.056)**
Active community usage	0.064 (0.021)***	0.066 (0.028)**	0.069 (0.033)**
Intercept	6.783 (0.023)***	6.922 (0.030)***	6.601 (0.036)***
Number of observations	7865	4323	3542
R <sup>2</sup>	0.012	0.013	0.018
Adjusted R <sup>2</sup>	0.012	0.012	0.017
F-value	31.778***	18.620***	21.167***

Notes: Parameter estimates (standard errors). Two-sided tests are used for all effects. The dependent variable is customer satisfaction; for pooled sample this is overall satisfaction, for user group this is the satisfaction of users, and for upper-level managers group, this is the satisfaction of upper-level managers.

\* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

differ significantly in their reaction toward their customer organization's online knowledge consultation ( $\Delta\chi^2(1) = 4.23, p < 0.05$ ). Finally, as predicted in H<sub>3a</sub>, a customer organization's active support community usage significantly increases user satisfaction ( $\beta = 0.07, p < 0.05$ ). For upper management, active support community usage also increases upper management satisfaction, opposite to the direction predicted in H<sub>3b</sub> ( $\beta = 0.07, p < 0.05$ ). Users and upper-level managers do not differ significantly in their reaction toward their customer organization's service request activity ( $\Delta\chi^2(1) = 0.01, n.s.$ ).

### *Robustness Checks*

To add further robustness to our findings, we investigate alternative explanations of our findings and an alternative estimation method. By collecting additional data, we could not find evidence that age differences between upper-level managers and employees might explain our results. We also aimed to assess whether the sequence of usage of service channels would explain some of our findings. Based on some additional data collection, no evidence was found for that. Finally, we used structural equation modeling instead of regression analysis. The results are very similar. More details on these alternative explanations can be requested from the authors.

## DISCUSSION

Communities have become of great interest in marketing and are a very relevant topic within customer engagement. In this chapter we first documented the current status of online community literature and noticed that all studies take the individual user as unit of analysis. Next, we argued that to capture effects in a B2B setting also, upper management decision-makers should be taken into account. To see whether there is value in going beyond the individual user we present an illustrative example wherein we investigate how both users and upper management value various ways of obtaining customer support (i.e., through traditional service requests, online knowledge repositories, and active community support). The main insight of our research is that we show that when studying the effectiveness of various support channels within a B2B setting, it is imperative to not only look at implications for users (they that obtain the actual support) but also at the implications for upper-level managers (they that are primarily responsible for contract renewal, contract upgrading, and the like). Our key insight and results have important theoretical and managerial implications.

### *Theoretical Implications*

The effectiveness (in terms of customer satisfaction) of various types of customer support behavior varies significantly across employees operating at various corporate levels. Those in upper management become satisfied from active community support and dissatisfied from service support employees spending time and resources solving their problems in online knowledge databases or using traditional service requests. It seems that managers in general dislike that their customer organization has to use support, but that active community usage buffers this negative effect. The surprisingly positive effect for upper management satisfaction of active community usage could be because upper-level managers see upsides in networking with other customer organizations, benefitting from the wisdom of the crowd, and solution richness when obtaining advice from peer customers who can include context from using the product (e.g., Mathwick et al. 2008). Conversely, as predicted, those actually involved in support activity (i.e., users) appear to attach satisfaction to more engaged types of support (i.e., active community support) over traditional support (i.e., service requests). Therefore, we can conclude that “one size does not fit all”. We take service support research in a B2B setting beyond the individual user and show the relevance of investigating individuals operating at various job roles within the customer organization.

### *Managerial Implications*

We provide managers valuable insight in the performance implications of offering various support channels in a B2B context and the underlying processes. Our key findings point at the crucial role of understanding your audience in service support, especially since in typical B2B relationships and organizational buying centers, multiple individuals are involved taking up various roles and responsibilities (e.g., Anderson and Narus 1990).

Our findings can provide an answer to the following central question managers nowadays face (e.g., Wiertz and De Ruyter 2007): Can you (partially) delegate support to customers? Difference in the effectiveness of online knowledge consultation versus active community support allows us to provide an answer to this question. Our results show that self-service in customer support appears to not be accepted, since users do not become more satisfied from their customer organization's online knowledge consultation, while upper-level managers become less satisfied. In contrast, customer co-creation in support seems more appropriate, for both users and upper-level managers, since for both of them active support community usage has a positive effect on satisfaction. For the service provider, online support is a low-cost alternative to deliver support (Dholakia et al. 2009; Rosenbaum 2008), yet key players become less satisfied from solving problems through online knowledge databases (even in comparison to other types of support). Our results indicate that upper-level managers hold the insight that obtaining solutions through online knowledge consultation might not be exactly fine-tuned to the customer's individual situation and might highly dependent on the effectiveness of their staff members' search skills and the completeness of the knowledge database, whereas active support community usage allows customer organizations to have more control over support, gain the opportunity to improve the service offering they receive, and actively discuss problems with peer customers (Bone et al. 2015; Chan et al. 2010). Therefore, it appears that upper-level managers, within the emerging web-based support services, do not fear for a dark side of community rather they fear for a dark side of static knowledge consultation.

The above insights bring inherent channel guidance recommendations. Support service providers could create a win-win situation by steering away support users from traditional service requests. This traditional model is usually costly for the service provider (Bone et al. 2015), and our results show that both service users and upper-level managers become dissatisfied from using this support option. In addition, with respect to web-based support service, service providers should aim to activate customers

instead of having them only lurk in communities, since online knowledge consultation decreases upper management satisfaction and active community support usages increases upper management satisfaction. An alternative approach is that service providers could highlight the benefits of and aim to create leverage for passive web-based support services among upper-level managers. While upper-level managers may hold the view that in web-based support active engagement is a prerequisite (upper management might want solutions rather than just reading and browsing), service providers should inform them that mere lurking also provides value and is not a waste of company resources.

### *Further Research Opportunities*

While this study did take the unit of analysis past the individual level, there are a variety of other job functions in a firm that we did not examine. Future research should shed light on how other various job functions view and use online support communities. Given the field nature of our study, we were not able to identify any mediating or moderating factors in our study. It would be interesting if researchers could experimentally test these findings in order to identify some of the underlying mechanisms explaining our findings. Hereby one could consider the role of perceived benefits and costs, leakage of information, reduced on increased effectiveness and efficiency, and so on. Further, future research should study the net effect of operating web-based support, as called for by Libai et al. (2010). Finally, we emphasize that while our study provides an illustrative example of how different community support activities create satisfaction in a Fortune 500 company, more research is required with richer data.

## NOTES

1. To be concise throughout this manuscript, we use the term “user” to denote the customer support user. In a B2B setting, the support user is not necessarily the product user. It occurs that product users contact an internal support department within their customer organization, which in turn contacts (i.e., uses the support of) the service provider.
2. In practice both users and upper-level managers will (partially) pursue their organization’s interest and (partially) their own job function and career interest. Despite this communality the main insight here is that upper-level managers and users have different job functions bearing different responsibilities: an important part of upper-level managers’ job function is to have a long-term



strategic focus and make sure their staff members are acting in their organization's best interest. In contrast, an important part of the users' job function is to have a short-term, day-to-day orientation and solve daily support issues.

3. Since we log-transformed our independent variables we essentially estimated a level-log model. We also re-estimated our model after log-transforming our dependent variable and hence investigated a log-log model. Results of the log-log model are substantially very similar to the results of the reported level-log model.
4. We also estimated our model with an orthogonal rotation method. Results are similar, only exception is the diminished significance (from 5% to 10% significance level) of the effect of active community usage on upper management satisfaction.
5. We also compared whether the satisfaction implications of various support channels differ between users and upper-level managers by means of a pooled regression with interaction effects between job level and support channel. Results indicate that upper-level managers do not differ in their reaction towards service request activity ( $\beta_{\text{service requests} * \text{upper-level managers}} = 0.02, \text{ n.s.}$ ), become dissatisfied instead of satisfied from online knowledge consultation ( $\beta_{\text{online knowledge consultation} * \text{upper-level managers}} = -0.16, p < 0.05$ ), and do not differ in their reaction towards active community support usage ( $\beta_{\text{active community usage} * \text{upper-level managers}} = -0.04, \text{ n.s.}$ )

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