THE VALUE OF SOCIAL MEDIA: TOWARD MEASURING SOCIAL MEDIA STRATEGIES

Completed Research Paper

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Abstract

Embodying a new gestalt in firm-customer communication, social media is a nascent yet critical concern for researchers and practitioners alike. Organizations lack valid and reliable measures for social media effects, without which they remain unable to align their social media initiatives with organizational goals and ultimately create business value. This essay presents a "social media ecosystem" framework, explicating the social-media-enabled relationships among stakeholder groups and suggesting how future researchers can address research questions based on this model. Focusing on the customer/firm segment entitled the "B@C Social Media Dyad," the article deconstructs the phenomenon of social media into multiple layers of firm-initiated and customer-initiated actions and provides a theoretical understanding of what firms and customers accomplish using social media. It sets the stage for developing measures of those firm/customer social media activities with a critical bearing on firm performance.

Keywords: social media, firm performance, measurement, collaboration, word of mouth, customer service, brand community

The Social Media Measurement Dilemma

The measurement of social media effects is an increasing concern for organizations (Hoffman and Fodor 2010). Without the ability to define and measure the consequences of social media strategies, it is difficult for firms to align their social media initiatives with organizational goals and ultimately create business value (Culnan et al. 2010). This concern is especially salient given the explosive growth in the number of organizations interacting with customers through social media interfaces and the diversity of such channels for reaching customers (Boyd and Ellison 2008). As information systems researchers, this quest for measurement warrants our attention because measuring a phenomenon, be it social media or otherwise, is an act of information creation that necessitates subsequent information recording and processing. The particular technological phenomenon of social media, furthermore, is recognized by top IS journals as a ubiquitous facilitator of communication and collaboration embedded in humans' lives (Aakhus et al. 2011). The resultant combination of measurement of human behavior facilitated by an underlying information technology thus brings social media analytics to the forefront of IS interest.

Consumers are increasingly aware of corporate social media outlets, coming to expect such forums (Cone 2008) the way they grew to expect public-facing corporate websites a generation ago and e-commerce capability over the past decade. A 2010 study counted 23 percent of Fortune 500 companies with public-facing blogs, 60 percent with corporate Twitter accounts, and 56 percent with corporate profiles on Facebook (Barnes 2010). As customer expectations of such brand-support communities compel organizations to implement these initiatives, they become the norm for both customers and organizations. Competitive pressures also induce companies to jump on the "social media bandwagon" to avoid the impression of being outdated or out of touch with innovative technologies compared to their peers and competitors (Sterne 2010). Additionally, corporations are able to purchase information about their customers from some externally hosted social media sites, thus providing a wealth of minable data. Driven by such pressures to engage in social media initiatives, organizations are correspondingly increasing social media expenditures. Forrester expects social media marketing in the U.S. to grow at an annual rate of 34 percent from 2010 to 2014 (300 percent over five years), reaching an estimated worth of USD 3.1 billion (VanBoskirk 2009). This rate doubles the expected growth of all other online marketing combined. The results is that organizations are investing time and money in a new phenomenon that practitioners and researchers alike know very little about, and the consequences of which they understand even less.

As an antecedent to the theorization of effective metrics for corporate social media use, it is critical to identify how social media change traditional customer-firm interactions and what new objectives they introduce into the relationship. For example, once customers become social media participants, they transcend the role of mere information consumers. Instead of approaching the web as a mode of locating information and receiving marketing messages controlled and disseminated by brand managers, they now employ it as a medium for generatively co-creating a wide array of informational objects ranging from product designs to advertising campaigns to organizational processes (Berthon et al. 2008; Etgar 2007; Fournier and Avery 2011). As such, traditional measures like hit counts may capture far less germane intelligence than some level of qualitative analysis of generated content. These new processes require different measures because they are motivated by different goals, often aim at different outcomes, and may achieve existing outcomes through novel means. For example, instead of relying on customer-initiated complaints to trigger service solutions, firms are now empowered to patrol customer-generated content for instances where the firm can initiate customer service and obviate incoming customer complaints. This gives companies a new mechanism for meeting and even surpassing customer expectations. To illustrate the importance of filling the social media measurement gap in the organizational context, we have only to imagine a firm whose strategic focus maps to the objective of providing superior customer service. Without understanding how social media change the process of providing customer service, the wrong things are likely to be looked at and measured, in general. A metric that ties service ratings to the number of successfully-resolved incoming complaints, for example, would completely fail to capture the value created by preventing complaints from ever coming in. So without metrics derived from a theoretical understanding of the underlying processes and objectives, this hypothetical firm has no way to substantiate (or disconfirm) the success of its social media efforts or the possible links to desirable and/or undesirable company outcomes.

The quest to measure social media effects necessitates that we first define social media. Despite extensive treatment by the popular press, social science research has been slow to integrate social media extensively into its theorization (Webster 2010); within the academic literature, discussions of social media are sparse (though growing). However, a review of articles across disciplines indicates a tentative agreement on the critical characteristics of social media, if not an exact definition. Often referred to interchangeably as "consumer-generated media" (Mangold and Faulds 2009), "Web 2.0" (Wattal et al. 2010), and "user-generated information systems" (Desautels 2011), the label "social media" tends to describe those Internet-based applications predicated on the creation and exchange of user-generated content (Kaplan and Haenlein 2010) across communities of networked individuals. We propose an expansion of these concepts to provide a definition of social media that supports the theorization developed in this paper and that is sufficiently expansive to capture the spirit of the phenomenon yet able to exclude technologies or information systems not recognized as social media tools. As such, we define social media to be the set of connectivity-enabled applications that facilitate interaction and the co-creation, exchange, and publication of information among firms and their *networked* communities of customers.

Given the delineation between firms and consumers inherent in our definition of social media, we draw on extant literature at the nexus of net-enabled organizational and IS research streams to assume a view of major stakeholders from the firm's information-oriented perspective (Watson and Straub 2007) as the platform for contextualizing our measures of social media outcomes. This benefits our theorization in two ways. First, this approach enables us to examine firm performance relative to each stakeholder (Watson and Straub 2007). Thus, firm goals relative to the customer entail 1) retaining customers, 2) improving customer service, and 3) increasing market share and share of a customer. For the investor, the firm's goal is to minimize the cost of capital. Second, by mapping onto this model (see **Figure 1**) the inter- and intra-group communications engendered by social media, we can begin the process of isolating the different layers of activities and outcomes that comingle to produce a very complex scenario. Ultimately, our goal in this stream of research is a measurement for change in performance (δP.) that incorporates multiple measures (j) describing multiple social media streams (i): $\delta P = \sum(a_{ij} x_{ij}) + \varepsilon$. However, before we can develop feasible, reliable, and valid measures of social media effects that will render meaningful (and comparable) observations of social-media-enabled relationships in practice, we must first untangle the myriad objectives being accomplished by the pertinent stakeholders, in this case the firm and its customers.

The purpose of establishing useful measures of social media effects is two-fold; from a practitioner standpoint, it addresses the adage, "you can't manage what you can't measure."[1] Supplying organizations with pragmatic, theory-driven metrics will enable managers to evaluate the consequences of social media campaigns in relation to overall business performance, allowing them to manage social media strategies from positions that are less reactionary and more grounded in established knowledge or theory. From an academic standpoint, in order for our accumulating knowledge in this emerging domain to advance from observation and description to theory development and testing for the purposes of explanation and prediction, we must have a foundation of theoretically justified measures. This paper lays the groundwork for the development of such outcomes by establishing an analytical model that dissects the phenomenon into components and then ties the conceptual underpinnings of those components to theory.

Our paper begins with a discussion of the scope of the social media landscape, through which we aim to convey the magnitude of complexity introduced into stakeholder interactions by social media technologies. We situate our current firm-centric study in the broader social media environment, specifying the stakeholders and interactions relevant to our current research questions of interest. Based on this discussion, we propose how researchers might go about developing a set of measures for social media effects, and conclude with a discussion of how such measures might apply to other relationships within the larger social media milieu.

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[1] A perhaps more immediately attributable quote is inscribed below the bay window of the Social Sciences Research Building at the University of Chicago (1929): "When you cannot measure · your knowledge is meager and unsatisfactory." —Lord Kelvin

Scope of the Problem: the Social Media Ecosystem

Theorizing about social media effects is an important, albeit nascent, concern for IS research. This technology-enabled phenomenon changes the nature of traditional relationships in an organizational context, a transformation that organizations must address in order to fully compete with rivals in an era of widespread social media communication. Historically, enterprises have achieved certain goals regarding their customers through unilateral, one-to-many channels such as print, radio, television, and more recently the Internet, broadcasting carefully-controlled messages of persuasion with limited opportunities for reciprocity (Berthon et al. 2008). However, the advent of social media technologies has altered this dynamic by enabling a high degree of two-way dialogue between the organization and its customers, as well as by providing a mechanism for customers to collaborate amongst themselves. Consumers can suddenly participate in the efforts to create and share knowledge about a company's products and services, a process that simultaneously conveys to the company potential risks such as negative word of mouth marketing (Fournier and Avery 2011) as well as opportunities such as gaining competitive advantages (Cook 2008) in the forms of collaboration-based productivity (Soriano et al. 2007) and customer-driven innovation (Tapscott and A. D. Williams 2008).

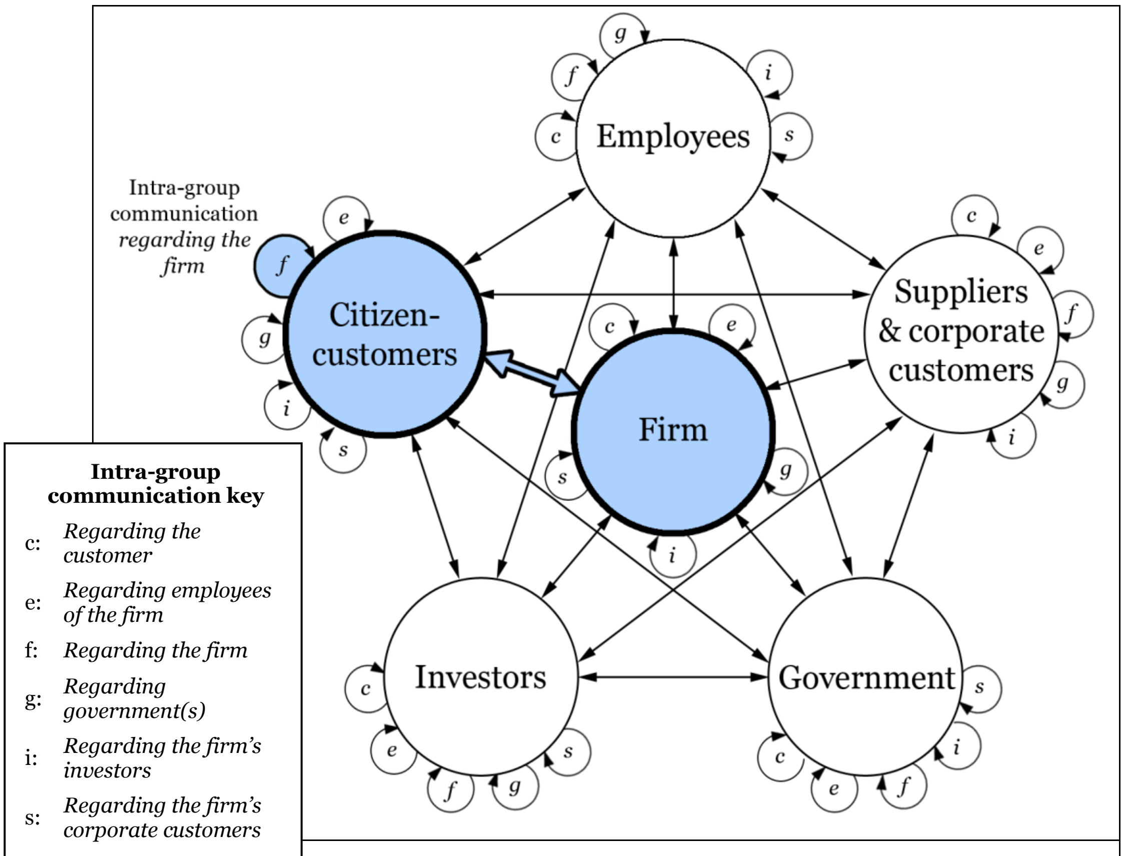

Figure 1. Social Media Ecosystem
(with shading to indicate the focal stakeholders and relationships of the current series of studies)

Our current study focuses on the stakeholder dyad of citizen-customers (which we will shorten to "customers" for the purposes of this paper) and the firm, seeking to understand, in order to measure, the effects of social media within a business-to-consumer (B2C) framework. While this portion of the social media ecosystem is the most relevant to us as scholars concerned with business systems, it is nonetheless important for us to call attention to the magnitude of the social media landscape as a whole (see **Figure 1**). **Figure 1** includes a map of all stakeholders (represented by large circles) from a firm's perspective that might interact via social media. In addition to inter-stakeholder communications (e.g., government-to-corporate supplier, employee-to-investor), members of each stakeholder group can also communicate with one another in what we call intra-group communication. While inter-group exchanges are easily understood as being initiated by one group and directed toward a recipient group, distinguishing among various possible intra-group exchanges is more difficult. As such, we opt to differentiate intra-group exchanges based on the subject of the exchange. For example, employee-to-employee discussions of a government mandate (i.e., intra-group employee communication *regarding the government*) are conceptually distinct from employee-to-employee discussions regarding investor relations (i.e., intra-group employee communication *regarding the investor*) according to our model.

Given these distinctions, among the six stakeholder entities specified in the model there are fifteen possible two-way inter-group interactions and thirty possible intra-group interactions (each focused on a different stakeholder object) that could combine to form at least 450 different communication configurations. While some of these configurations may not make practical sense, the framework is still available for a given researcher to determine which entities, and in what combination, might be worthy of investigation. Other researchers might derive useful knowledge regarding the role of social media by carving out other portions of the ecosystem to scrutinize. For example, political scientists might examine the function of social media in the 2011 Egyptian uprising by measuring citizen-to-citizen communication *regarding the government*. Various configurations of inter- and intra-group communications imply different ramifications for a range of policies—in the current study, our concern is firm-level social media strategy, but other reasonable outcomes might include social media campaign strategies for politicians (Wattal et al. 2010), health communication strategies for public health organizations (Chou et al. 2009), or management strategies for disclosing financial information to investors (Xu and Zhang 2009).

In the current study, our research interests pertain to how firms can measure the success of their social media efforts with respect to their customers. In addition to reciprocal exchanges between the firm and its customers, we also examine customer-to-customer interactions, restricting our focus to those communications *pertaining to the firm* in order to hone our model to a parsimonious yet predictive set of measurements. Defining this construct to include general mentions of the focal firm and its brands, products, and services, we conjecture that this set of intra-group customer exchanges will shed far more light on the ultimate dependent variable we seek to understand (firm performance) than intra-group customer exchanges regarding the firm's employees, investors, corporate suppliers/customers, or governing bodies. We do not exclude the possibility that intra-group customer conversations regarding these additional stakeholders could help predict some variance in firm performance in some situations; we simply believe the relative importance is low compared to communications pertaining to the firm.

Conversely, we also exclude firm-to-firm intra-group interaction *regarding the customer* as not germane to our study because it implies some form of inter-organizational relationship (IOR) among individual firms; while this may yield an interesting level of analysis for future related studies, our immediate concern is to understand the social media interactions between a focal organization and its human customers (as opposed to organizational customers) and figure out how best to relate those to firm performance. Although we exclude external firms from our focal dyad, we do include customer mentions of external firms—intra-group customer-to-customer communication *regarding competitive firms*—in our measurement schema for the logical reason that criticism or praise of a competitors' products or services is likely to inform a firm's competitor analysis, which in turn suggests probable ramifications for firm performance.

Given the definitional rationalizations presented here, we offer the caveat that future studies seeking to examine additional effects of social media interactions among other stakeholders in the ecosystem should carefully specify definitions of each group of interest, particularly when including the organizational-level entities of firm, supplier, or government. Restricting "firm" to represent a single firm versus allowing it to vary as a network of firms, deciding whether "government" will embody a singular governing body (e.g., local, state, national, or corporate) or multiple nested or networked administrations (e.g., national governments of all countries in which a multinational firm operates), and defining "suppliers and corporate customers" as a single partner, a specific industry, or all possible suppliers, are definitional decisions that will affect the external validity of results.

Focus on the Customer-Firm Social Media Dyad

Isolating our model of interest (shaded sub-model, **Figure 1**) from the overarching social media ecosystem allows us to unpack the range of social-media-enabled activities transpiring between customers and the firm (to which will we refer henceforth as the customer/firm social media dyad, or "B@C" dyad, to denote the representation of B2C, C2B, and C2C interactions, for short). Expanded in **Figure 2**, each layer of stakeholder-initiated activity within the B@C dyad is driven by a different set of goals, and is thus potentially ascribable to different theoretical bases for the purpose of measurement. By decomposing the complex configuration of social media interactions into its constituent relationships, we are able to simplify it into a stratified system of measurable, manageable processes. It should be noted that arrows 1 - 3 in **Figure 2**, while appearing to visually denote unidirectional messages from one stakeholder to the other, each imply an initial message (cause) as well as some type of response (effect), be it a literal response such as a message back to the initiator or a set of behavioral reactions such as a visit to a web site, a refund or product replacement, a blog posting, a purchase, etc.

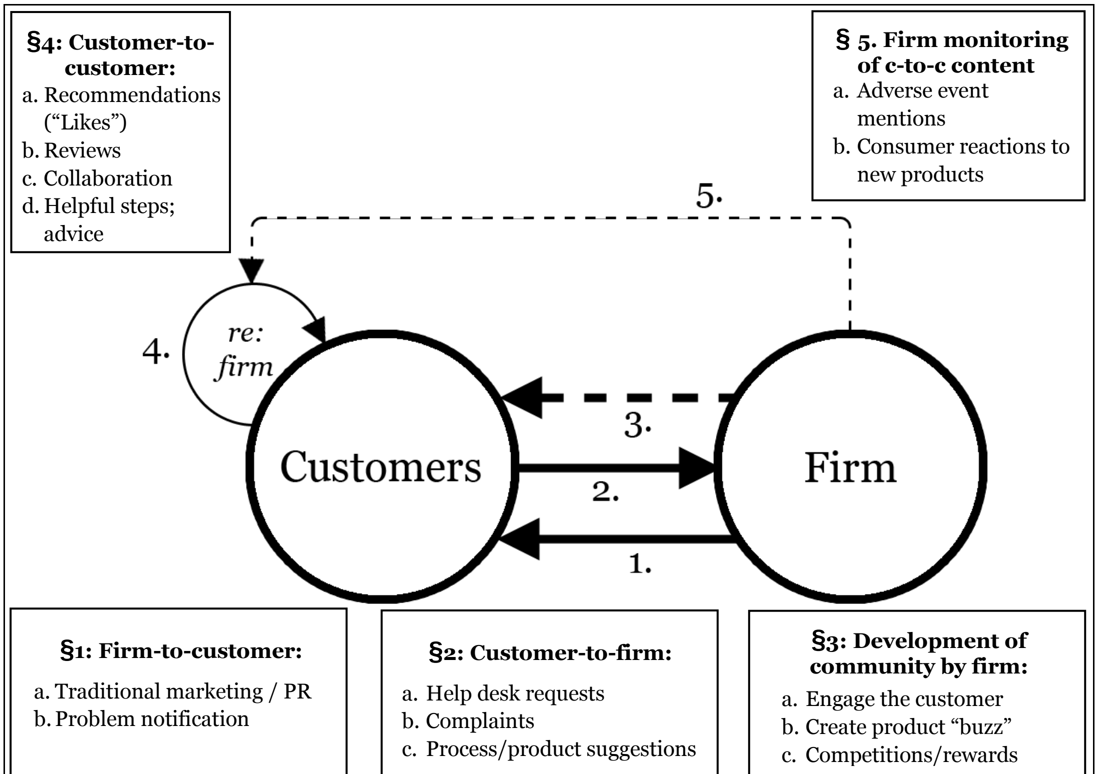

Figure 2. Firm/Customer Social Media Dyad

Examining the layer of firm-initiated interactions with the customer (**Figure 2**, §1), further isolation of the exchange into two unidirectional paths (meaning we do not look at reciprocity but focus strictly on messages in one direction and then the other) results in pathways that suggest a traditional Internet marketing model, whereby firms efficiently channel advertisements and persuasive promotional messages to their customers via the Web (Hoffman and Novak 1996), and customers respond by following the firm's suggestion to visit an e-commerce site (or brick-and-mortar location, when appropriate). The types of tasks initiated in this firm-to-customer layer include advertising new products to customers, flash-promoting time-sensitive discounts or limited-availability goods, and otherwise targeting customers with specific messages of tailored interest, a practice shown to increase profits by increasing differentiation in the market and eliminating extraneous advertisement to unsuited consumers (Iyer et al. 2005). As such, we are able to map some "firm-to-customer" initiatives (§1.a) to traditional web-based marketing and PR activities, allowing us to refer to the existing literature in these traditions for suitable measurements for assessing this component of the social media landscape. The role of the web-mediated advertising is well established in the IS and marketing literatures, with strong theoretical foundations and time-tested measurements (e.g., Berthon et al. 1996). Encapsulated by this same layer (§1.b), firms may also initiate pursuits toward the customer intended to achieve some aspects of customer service. The type of activity serving this objective concerns customer notification—e.g., notifying patrons about potential problems (as in urgent safety-related recalls) or impending service interruptions.

A complementary layer of the B@C dyad that further harkens to the province of customer service is the reverse-oriented set of customer-initiated service requests directed toward the firm (**Figure 2**, §2). Firms have long employed a variety of digital systems supplemented by human service to enable customers to seek product or service support (Ba et al. 2010); such structures include call centers, web-based self-service systems, and email correspondence (Featherman et al. 2006). Whether initiated by the firm or by the consumer, customer support facilitated by social media IS can be appropriately described and measured by looking to scales within the comprehensive body of customer service and quality work. While the focal IS medium of interest may present a novel mode for communicating and certainly implicates a complex mesh of goals, activities, and participants, once the customer-service oriented tasks are isolated from the overall phenomenon we find a set of interchanges that can be understood from the conventional perspective of IS-enabled customer service.

The combined set of firm-initiated and customer-initiated service requests depicted in **Figure 2** can be understood by returning to the stream of literature launched decades ago in which customer service has been acknowledged as a strategic imperative for most firms (Parasuraman et al. 1985), the most critical factor in the quest for customer satisfaction (Ray et al. 2005), and a fundamental driver of IS priorities (El Sawy and Bowles 1997). Customer service measurements have been established in a variety of contexts, a recent study linking IS-driven customer service to improved firm performance applying especially neatly to the context at hand (Ray et al. 2005). The Ray et al. manuscript observes social complexity of IS capability as a critical explanatory factor of performance, informing our notion of social media-enabled customer service as a mechanism that firms may exploit in the quest for improving their bottom line.

Having categorized the first two segments of B@C activity as sets of tasks well understood and measured in the IS and marketing literatures, we turn our attention to three additional layers that embody social media's novel contribution to the B@C relationship. Our goal in the following section is to shed light on the implications and opportunities that these contributions convey to both firms and consumers. The ultimate goal of deriving useful theory-based measurements of social media effects that predict changes in firm performance hinges on thoroughly understanding the novel modes of interaction that social media propagates and comprehending the variety of natures and drivers for these interactions.

Measuring Layers of Social Media-enabled B@C Activity

The granular layers of B@C social media activity include actions that can be understood either as events or processes, the latter of which have intermediary as well as ultimate effects that should be monitored (and thus measured) by the firm. For example, firm-initiated community building through which the firm attempts to influence customer-to-customer exchange is actually a series of events and outcomes (see **Figure 3**). As customers interact with one another, the firm is able to monitor and derive from these exchanges useful knowledge as the process unfolds, while the end result of the series of exchanges is also another measurable outcome. The crux of the social media measurement problem as we see it is deciding what aspects of customer/firm social media interaction ultimately relate to firm performance, and which have no bearing on firm performance and so do not need to be monitored. The following subsections lay out the activities that should be considered for measurement but that are not conveniently described or operationalized in extant literature.

I. Firm-to-customer community building

Due to the collaborative functionalities enabled by the multitude of social media applications and technologies embraced by consumers, the ability now exists for firms to influence consumer behavior in unheralded ways. By engaging customers in a "social" experience revolving around the brand, firms are able to develop brand-centric communities in such a way that ties customers to their products (**Figure 2**, §3). The marketing literature cites brand communities as not only a driver of loyalty and a factor that increases a consumer's likelihood of adopting a new product from the preferred brand, but also as a basis for oppositional loyalty against competitors' products (Thompson and Sinha 2008). The array of firm innovation in this domain is expansive; companies are continually inventing novel approaches to creating "buzz" about events and services, conducting competitions, and facilitating reward systems.

Of course, organizations have been seeking the "Holy Grail" of brand loyalty through the development of communities for decades (McAlexander et al. 2002), long before the advent of social media. Defined by the commonality of its members and the relationships among them, a community is a network of social relations; a *brand* community is a specialized social group organized around a particular brand that exhibits shared consciousness, rituals and traditions, and a sense of moral responsibility (Muñiz Jr. and O'Guinn 2001). Brand community has evolved from being conceptualized as a customer-to-brand relationship (e.g., Aaker 1997) to a customer-brand-customer triad (Muñiz Jr. and O'Guinn 2001) to a network of relationships including customer-to-brand, firm-to-customer, and intra-customer interactions (McAlexander et al. 2002), a configuration that strongly resonates with the makeup of the social media ecosystem.

Reinvigorated by two-way conversations with customers, the ability to collect in-depth records of consumer preferences, and the power to "micro-target" or address customized messages to individuals—all tasks that have been simplified by the existence of social media technologies—firms are now turning to social media outlets as leverage for shaping brand-centric communities in ways previously unrealistic with traditional mass media (Fournier and Avery 2011). The existence of brand communities draws on one of the most basic human motivations, the desire to belong to a larger collection of likeminded peers, to fit in, to be accepted; with brand consumption serving as the basis for coalescence and social media facilitating the connectivity, firms have an unprecedented platform for exploiting consumers' basic drives (e.g., to "belong") in such a way that benefits the brand or product (Fournier and Avery 2011). Considering the chain of influence linking brand communities in the retention of consumers via the mechanism of increased brand loyalty, which in turn positively impacts a firm's bottom line (see **Figure 3**), firms need measurements to help them monitor their community-building efforts. A valid system of measurement for firm-directed social media efforts must account for all crucial relationships determined to comprise the construct of brand community from a customer-experiential perspective: relationships between the customer and the brand, the customer and the firm, the customer and the product, and intra-group customer-to-customer relationships (McAlexander et al. 2002).

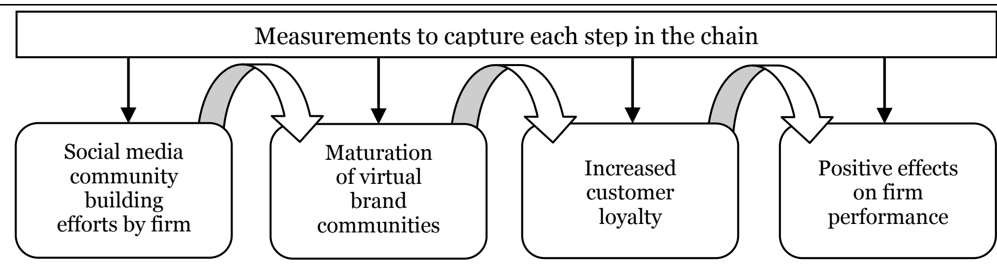

Figure 3. Community-building-to-firm-performance chain of constructs

Given the building of brand communities as a possible vehicle for driving firm value from social media, firms must thus mindfully choose community-building strategies that resonate with their social media capabilities and overall goals. Whether a laissez-faire approach in which the firm preemptively renounces designs on steering the social media behavior of its consumer base out of respect for its autonomy, an appropriative approach whereby the firm waits to take its cues from its consumer base and then jumps in to take advantage of the content created by the participants, or a dominating approach where from the outset the firm actively attempts to mold the social collective of its consumer base by orchestrating calculated campaigns, a range of consequences may ensue. The literature points to the pros and cons of each of these routes, ranging from the benefit of preserving authenticity of fan-created content by remaining hands-off according to the first approach, to the risk of inviting caustic parodies from hyper-critical consumers despite attempts to heavily guard against such possibilities, according to the last approach.

On one end of the spectrum it has been suggested that the successful firms (at least in terms of reaping the benefits of social media) are the ones that cede jurisdiction to consumers despite the difficulties inherent in relinquishing control. This may be attributable in part to the respect this relinquishment signals to consumers' regarding their autonomy and influence over user-generated content. On the other hand, extremely clever marketers have managed to design campaigns that clandestinely enable spoofs, identified by particularly savvy firms as desirable due to the high viral currency and ultimate cultural resonance such "hits" often indirectly effect (Ferguson 2008; Fournier and Avery 2011). Although viral tactics have been accused of merely resulting in short-term attention, it may be possible for firms to leverage such messages in building customer loyalty by launching (or covertly instigating) campaigns that ultimately beget consumer identification with other like minds and promote "sticky" dialogue (Ferguson 2008).

However successful companies may be at instigating such marketing campaigns, viral as well as word of mouth marketers face the same problem in measuring the effects of their campaigns. Researchers know that these types of advertisement build brand awareness, but they are unsure how to calculate the effect on market share (Ferguson 2008). Expanding awareness into loyalty via the development of brand/product/service communities is a critical driver for this segment of the B@C Social media dyad given the ultimate ties of this activity to firm performance. Beyond the measurement of community building efforts by firms, accounting for additional variations introduced by the existence of viral messages is especially difficult, especially given the lack of understanding by practitioners and academics alike as to how one might successfully foment an effective, positive viral campaign. Until such elusive antecedents are more thoroughly accounted for, it is likely that community building efforts will be measured in terms of more conventional components. This is not to say that viral or word of mouth effects cannot or should not be ascertained; we simply conclude that *efforts to produce* such effects should not be included in community building measures.

II. Customer-to-customer exchange

Once a product or service enters the marketplace, it is ripe for inclusion in customer-to-customer social media interaction. This may take the form of a consumer commenting on or reviewing a product, service, or event within the comments section of a blog for the perusal and reaction of other consumers, clicking the "recommend" button on product's page within any number of e-commerce sites with integrated social media functionality, "tweeting" about an experience to a network of "followers," or staking a claim on a product within Facebook or similar social media networking application by "liking" it, thus joining the ranks of that product's "fans." Customers may focus messages directly at one another, contribute to collaborative social media sites such as Wikipedia (a collective online encyclopedia), Kaboodle (a forum for compiling public shopping lists), or IMDB (an actor/movie information database), or broadcast helpful information through a variety of online product/business review (e.g., Epinions, Yelp) or news recommendation (Fark, Yahoo! Buzz) sites.

In fact, it is irrelevant whether a firm actively sponsors a social media community or not; once a product is accessible to consumers to purchase or experience, it in turn becomes a viable candidate for customer-to-customer discussion. Firms may become implicated in online word-of-mouth "advertising" whether or not they have designed a corresponding strategy or ever intended to enter that realm in the first place. As a corollary, firms do not have the luxury of opting out of the customer-to-customer information market; the choice becomes whether to actively plan to influence how and where some of the "conversations" occur by building social media communities to supplement existing outlets, or to completely relinquish control and let customers fully determine the context in which the firm's product and services are critiqued or recommended. Even if a firm opts for the former and creates a blog or competition site to attract customers, all the usual suspects of third-party social media outlets remain, for the most part, outside of the firm's control. As such, the "portfolio" of social media outlets pertaining to a given product or service will include a wide range of non-firm-controlled entities supplemented with whatever internally-directed channels the firm opts to host, suggesting that the overall set of customer-to-customer interactions will remain outside the control of the firm.

Although firms largely lack power to regulate the customer-driven content within social media applications, they gain an enormous wealth of public, monitorable, analyzable data. We propose the capability of firms to monitor intra-group customer exchanges to be one of the biggest sources of benefit to firms introduced by social media, and a driver of the need for measurements of customer-to-customer exchanges. While a desirable system of measurement of such exchanges would certainly account for simpler characteristics like counts of awareness (e.g., number of "likes" and "recommendations" of a product or service promulgated throughout the network of social media instantiations), more complex analytical capabilities should also be incorporated. Some type of semantic differentiation mechanism—i.e., analysis of positive comments versus negative comments—and, ostensibly, some form of deeper interpretation, capable, for example, of detecting sarcasm, spoofing, or other types of behavior likely indiscernible by more simplistic modes of analysis should also contribute to measurements adopted by firms.

In keeping with our model's scope, including the specification that customer-to-customer communication *regarding the firm* should include mentions of competitive firms and their products when appropriate, a useful system of measurement should account for as many of these factors in relation to competitive firms or products as possible. For the most part, all of the data available about the monitoring firm should also be harvestable about competing firms, since the bulk of consumer-generated content is available freely on social media sites across the Internet; the only data possibly obscured from collection would be comments and collaborations facilitated within the sphere of a competitor's internally hosted social media site. For example, a blog or virtual community that is password protected and mediated by a human approver may contain content that is unobtainable to scraping scripts or other mechanisms; such locked-down data would simply excluded from measurement (though, a firm's own internally-hosted data would likewise be unavailable to its competitors who might attempt to gain the same form of competitive intelligence).

III. Firm monitoring of customer-to-customer exchange

The unique opportunity conferred to firms by the ability to monitor customer-to-customer exchange is not limited to analyzing huge streams of data, although that is an enormous source of potential advantage. Monitoring customer-to-customer streams also imparts to firms the capacity to interject customer service into negative exchanges, thus influencing customer satisfaction and opinions and derailing potential public relations problems. Companies ranging from Comcast to Jet Blue monitor outlets like Twitter for any mention of their company, searching for opportunities to provide information to needy customers or correct misinformation subject to inadvertent propagation by members of their consumer bases (King 2008).

An interesting risk factor arises in the B@C social media dyad in the form of non-social media. Traditional or "legacy" media outlets that existed prior to the advent of the Internet, including public broadcasting, newspapers, magazines, and network newscasts, perform a unique function in the social media landscape. Specifically, traditional media outlets serve as an amplification mechanism, especially (but not strictly) within the customer-to-customer segment. It is not uncommon for a news outlet to become aware of customer-firm discord unfolding in a social media setting, often available for general consumption when dissatisfied customers broadcast their service problems to other consumers in the pursuit of a) making peers aware of potential problems with certain brands or services and b) garnering peer support in the fight against whatever the focal complaint may be. Whereas such a complaint may or may not attract mass attention within the social media context, once it is detected and amplified outside of the social media arena, it becomes available for true mass consumption. Studies indicate that consumers multi-task in their media consumption, simultaneously participating in online and traditional modes of information intake (Russell 2010); whereas customer service complaints may not reach viral mass within social media, one it becomes supplementarily available to through traditional news, an amplificatory effect is likely. Participants can turn to their social media outlets to expand. Conversely, while firms must guard against the risk of a negative message becoming amplified, this mechanism can always work in a firm's favor when the message being amplified favors the firm, essentially serving as free PR.

However, probably the most important characteristic of the B@C social media dyad that lends itself to firm exploitation is the colossal stream of real-time customer-to-customer interchanges that are publicly facilitated by the myriad social media applications in operation daily. These data, which firms can ostensibly interpret to acquire clues about customer likes and dislikes, trends in the marketplace, changes in technology use—the list of derivable intelligence is constrained only by firms' imaginations—is out there in the ether to be analyzed. The literature suggests that this intra-group dialogue can yield customer insight as well market intelligence (Gallaugher and Ransbotham 2010); what academics and researchers alike lack is the foundation of measurements that can derive useful meaning from trends over hundreds of thousands or millions of these data points. While a single person or team can monitor for possible negative mentions of a brand or firm, firms invite peril when they give too much credence to extreme positive or negative feedback from a vocal but small faction of overall customers (Fournier and Avery 2011). Being swayed by extremes does not entail the reliability inherent in detecting patterns across the comprehensive base of customers communicating via social media. This ultimate objective remains to be established, and motivates our proposal to suggest how available data can be analyzed in its entirety.

IV. The role of digital data generation

A unique antecedent to the processes that contribute to social media's value to the firm, the ability to monitor and measure is facilitated by the generation of digital data. As social media interactions are computer-mediated and occur within the infrastructure of the Internet, firms are able to compile stores of all interactions for the purposes profiting from customer data (Piccoli and Watson 2008), in this case in the form of customer-to-customer and firm/customer interactions with the ultimate goal of increasing firm performance. Comparable to the capture of customer transactions, firms are able to record six critical details about each interaction: when the interaction occurs (i.e., time/date stamp), where (i.e., within which particular social media application), the nature of the interaction (i.e., is it a persuasive customer-to-firm message?), how it was executed (i.e., Facebook "like" button click, wall posting, or personal message?), who initiated the interchange and to whom it was directed (i.e., firm-initiated toward the customer, customer-initiated toward the firm or to other customers), and the outcome (i.e., strengthened brand community, alerting customers about a potential problem with a particular product) (Piccoli and Watson 2008).

Whereas manual versions of these processes are laborious, time-consuming, and thus expensive to execute or analyze (e.g., transcribing customer complaint calls, printing and distributing paper-based advertisements), when these processes are accomplished digitally they become immediately available, cheap to analyze, and abundant sources of intelligence. The low cost and high analyzability of data makes it available and valuable to customers and firms, factors particularly germane to the context of social media. For example, digital video recorders and editing software are very inexpensive and accessible to a wide range of amateurs who would have found creating, editing, and broadcasting video prohibitively costly and cumbersome just a few decades ago; further, channels over which to broadcast video were not accessible to the masses the way the Internet is today. But the ease with which anyone can record and publicly circulate video messages (or any other type of electronic signal) via social media today means that the flow of digital information is enormous and ripe for the picking.

Once social media interactions are recorded as data, firms are then in a position to turn streams of these data into information through measurement techniques; the trick is to determine which aspects of these data should be analyzed and compared, and how that might be accomplished. We approach this decision by examining stakeholder goals driving social media activities; from this understanding we can a) know which areas of research to look to for theoretically-justifiable measures, and b) start to ascertain which activities are important for firms to monitor and which are irrelevant to the ultimate end of firm performance.

Outcomes across Layers

A complementary angle for approaching the task of fully explicating the B@C social media dyad is to examine the underlying outcomes that motivate the events and processes within each layer. Returning to the advertising/marketing/PR literatures, two very important effects include the traditional factors of 1) increased awareness and 2) subsequent persuasion (e.g., Keller 1993), both of which map to the uses of social media. Firms have been able to jump right into the social media scene to achieve these objectives because financial and technical barriers are low. However, while awareness and persuasion are important antecedents of market share, and certainly describe a variety of both firms' and consumers' social media uses, they do not tell the whole story. The additional function of "collaboration" is a third distinguishing characteristic of a large percentage of consumer-to-consumer and consumer/firm interactions that do not fulfill the purposes of persuasion or simply increasing awareness. Falling outside the scope of most traditional marketing models, "collaboration" introduces a whole new set of considerations that must be factored into the development of an accurate and useful social media measurement system.

We briefly discuss these three pervasive outcomes to which we refer as "Motivating Consequences" and present in tabular format (see **Table 1**) these three outcomes crossed with the five layers of social media activity previously mapped out in **Figure 2** (i.e., firm-to-customer, customer-to-firm, and customer-to-customer interactions, plus the additional firm pursuits of community building and customer-to-customer monitoring). We populate the table with descriptions of the activities occurring at each intersection of outcome × initiator, then map to each cell relevant areas of literature (see **Table 2**) in order to frame each activity in terms of academic conversations that can inform our understanding of each segment of activity. Drawing on extant bodies of established work in these theoretical realms serves us twofold; first, it allows

		Table 1: Focal Dyad Activities According to Consequence				
		Activity Initiator				
		Firm (community building)	**Customer** (to customer)	**Firm** (to customer)	**Customer** (to firm)	**Firm** (monitors customer-to-customer)
Motivating Consequence	Awareness	Ω Firms promote virtual brand communities in order to increase customer knowledge about the brand.	□ Customers make one another aware of products and services, an important antecedent of market share complicated by the moderating role of sentiment.	+ Firms alert customers about new products and services. ‡ Firms alert customers about potential problems.	‡ Customers make firms aware of product flaws.	‡ Firms become aware of consumer dissatisfaction and adverse events by monitoring customer-to-customer interactions.
	Persuasion	Ω Brand communities facilitate "sense of belonging;" this supports brand loyalty which in turn advances customers' propensity to repeat purchase.	□ User-generated reviews of products and services sway subsequent consumer purchases. Negative persuasion is a possibility here.	+ Firms market products and services to customers persuasively.	‡ Customers directly campaign the firm for product updates or changes.	‡ Customer-to-customer interactions change firm behavior when firms intercept conversations conveying the need for intervention.
	Collaboration	Ω In an effort to advance identification with a particular brand community, firms collaborate with customers.	◇ To achieve entertainment and bonding, social media participants collaborate with one another.	Δ Firms engage customers in collaborative projects from which both parties gain value.	Δ Customers initiate collaboration with firm to create knowledge, for the satisfaction of co-creating products or knowledge.	Δ Firms monitor customer-to-customer collaborations for opportunities to derive value and potentially adopt collaborative end products.

Table 2: Areas of Applicable Literature with Example Citations					
Online word of mouth advertising (□)	Online marketing and PR (+)	Web-delivered customer service (‡)	Customer loyalty, brand community (Ω)	Entertainment, bonding (◇)	Co-creation of value (Δ)
Godes and Mayzlin 2004; 2009; Kozinets et al. 2010	Chatterjee et al. 2003; Stewart et al. 2001	Shankar et al. 2003; Zeithaml et al. 2001	Algesheimer et al. 2005; McAlexander et al. 2002; Muñiz Jr. et al. 2001	Ko et al. 2009; Whitty et al. 2007	Berthon et al. 2008; Etgar 2007; Lewis et al. 2010

us to capitalize on decades of accumulated scholarly knowledge in our attempt to understand, explain, and measure aspects of the social media phenomenon; reciprocally, it allows us to contribute to organizational science by expanding the reach of established theory to the novel, yet pervasive and evidently irrevocable, IS environment of social media.

Our set of activities, which we consider comprehensive if not exhaustive, derives from a review of social media literature augmented by informal discussions with social media marketing practitioners. We suggest that as a whole, the objectives underlying social media activities can be understood within the contexts of online word of mouth advertising (Godes and Mayzlin 2004, 2009; Kozinets et al. 2010), online marketing and PR (Chatterjee et al. 2003; Stewart and Pavlou 2001), web-delivered customer service (Shankar et al. 2003; Zeithaml et al. 2001), customer loyalty/ brand community (Algesheimer et al. 2005; McAlexander et al. 2002; Muñiz Jr. and O'Guinn 2001), entertainment and bonding (Ko and Kuo 2009; Whitty and McLaughlin 2007), and co-creation of value (Berthon et al. 2008; Etgar 2007; Lewis et al. 2010). The following sub-sections review these conversations in the academic literature and argues applicability of each to the corresponding layers as proposed.

I. Awareness

A variety of social-media-based activities achieve the goal of increasing awareness, whether of the firm (by the customer), the customer (by the firm), or peers (by other customers). Stakeholders may become aware of a new product, service, or event or of an existing or potential problem, Awareness may be accomplished directly (by express contact with one stakeholder by another) or indirectly (via monitoring customer activity).

Within the process of community building, awareness is a first step for firms to take toward developing customer loyalty. Within the context of customers making one another aware of products, services, etc., we see online word-of-mouth effects occur. When firms use social media to make customers aware of new products or services, we can understand this as traditional online marketing. From the customer's perspective, it is useful to employ social media as an expedient route for making firms aware of product flaws; this accomplishes customer service, especially benefitting the firm (and other customers) in cases where it is necessary to act quickly to diffuse a potential large-scale problem. Through the mechanism of monitoring customer-to-customer interactions, firms are also able to make themselves aware of consumer dissatisfaction and adverse events, subsequently enabling them to take appropriate action anticipatorily.

II. Persuasion

Traditionally the main purview of advertising and marketing efforts, attempts to persuade customers to purchase a given product or service are undoubtedly augmented by social media campaigns. Given the caveat that social media is far more than just another conduit for broadcasting one-way messages at consumers, the functionality enabled by social media allows firms to persuade customers, customers to influence firms, and customers to sway one another's opinions and behaviors. The bi-directional communication that characterizes social media interaction is a crucial aspect of the type of relationship-based marketing expected to be a necessary component of future marketing strategies (Andersen 2005).

In addition to traditional conceptualizations of persuasion inherent in the notion of marketing or advertising products and services, customers also now wield a substantial leverage in the relationship back to the firm. Consumers are more easily able to engage firms in conversations as they lobby for changes in products or supplemental services. This can benefit the organization due to the additional value that suggested improvements generate for the firm (Nambisan and Baron 2009), although a firm may not always immediately embrace a customer's desire for product change implementation. As such, in some cases social media further enables persuasion when it facilitates the assembly of groups of customers who can then wield their strength in numbers (Fournier and Avery 2011).

Customers may also unwittingly influence a firm's decisions to implement changes; as firms monitor customer-to-customer conversations across social media applications, the firm may unilaterally decide to make certain adjustments based on the intelligence gleaned from such monitoring. This is a particular facet of the social media world instigating a clear need for measurements to ensure strategies born of analyzable data; the threat to firms making decisions based on gathered intelligence is that their sample may be biased, incomplete, or unreliable. Whether targeted directly by consumers or induced into change due to assessments of customer-to-customer exchanges, firms must ensure that they are not simply giving in to what they mistakenly perceive to be the collective's desires, especially considering the self-interest inherent in such a collective that may be completely unaligned with the best interests of the firm or its brands (Fournier and Avery 2011).

III. Collaboration

Although historically conceptualized as external to the firm, the evolving view of customers as co-creators has brought the customer directly into consideration as firm value generators (Nambisan and Baron 2009); such value might include the benefits of augmented innovation processes and competitive strategies, or direct product or marketing development (Schau et al. 2009). Customers also derive value from collaborating with the firm, although the benefits are of a different, individual nature—it is suggested that customers co-create value with firms in order to derive personal enjoyment, self-promote, and as an outlet for activism (Berthon et al. 2008).

While a social media measurement system needs to account for collaborative activity, this is arguably one of the more complex aspects to capture due to the fact that it is infeasible to break this objective down into asynchronous "cause and effect" paths the way we are able to understand awareness- and persuasion-based activities transpiring at the firm-to-customer and customer-to-firm levels. Furthermore, it involves one of the least explored areas of research listed in **Table 2** as our major bases for describing social media activity. The co-creation of value is one of the most difficult for which to suggest measures, although it is arguably an extremely important aspect of B@C social media activity for which firms must plan to account.

The Measurement Problem

The lack of established metrics in the literature tying social media advertising (or other types of persuasive campaigning) to actual performance speaks to both the need for reliable and valid definitions and measurements of social media, and the difficulty of coming up with such measurements on the fly. In their 2010 analysis of the impact of Web 2.0 on the 2008 presidential campaign, Wattal et al turned to Gallup poll standings as a function of traditional media, Web 1.0 (traditional web sites), and Web 2.0 (YouTube, MySpace, blogs), based on mentions of the candidate via each medium the month prior. The decision to lag polling data by a month to connect Internet use to the following month's Gallup poll numbers introduces a possible disconnect between cause and effect in our social media research—this maps to the problem that IS researchers to date have had no empirically derived guidelines on which to rely, exacerbated by long feedback loops. Without basing such measurement decisions on theory or precedent, internal validity may be difficult to prove. It may be questionable, for example, whether polls a month in the future will accurately convey opinions developed today, especially when opinions are formed in response to information mediated by dynamic social systems that provide instantaneous as well as interactive communication.

Additional questions arise regarding the attribution of performance to, in this case, the number of monitored blogs that mention the focal product or person; this particular operationalization may not reveal a great deal of variance across candidates or about the relationship between particular social media strategies and the resulting dependent variable of choice. We reason that counting the number of blogs in a finite set that mention a particular product (or candidate) over a given period of time, especially a duration as great as a month, is unlikely to convey the insight we might glean from some alternate choices. For example, percentage breakdown of total blog coverage per candidate, absolute counts of the number of individual mentions (or discussions) of each candidate across all blogs, and gauges of sentiment of mentions may all represent more fruitful avenues for assessing impact of social media. The number of *blogs* that mention product X in a single month may be equivalent to the number of blogs that mention product Y in a single month, while the number of *conversations* about product X could far exceed the number of conversations about product Y, indicating that the level of analysis must be considered carefully in terms of measurement. This essentially equates to the difference between the amount of useful information we can derive from a multivariate, over a univariate, analysis.

As implied above, we contend that any attempts to measure social media use for purposes of predicting performance should factor in the valence of mentions or discussions regarding a particular product or service. Negative publicity has been found detrimental to a wide range of outcomes including product and brand evaluation (Tybout et al. 1981), consumer preference and purchase activity (Charlett et al. 1995; Sullivan 1990), and net present value at both the individual and the network level (Goldenberg et al. 2007). The impression formation literature is clear on the point that people place more weight on negative than positive information in forming overall evaluations of both people and products (Ahluwalia et al. 2000; Eagly and Chaiken 1993) and that dissatisfied customers discuss their experiences with a greater number of individuals than satisfied customers and thus yield more influence on fellow consumers as a whole (Charlett et al. 1995; Herr et al. 1991; Laczniak et al. 2001). Consequently, measuring the number of customer conversations about a product or service facilitated by a social medium without regard to content may lead researchers to draw erroneous conclusions about the relationships under scrutiny. In an organizational context, we cannot assume a positive linear relationship between the frequency of customers' social media use and the firm's desired outcomes with regard to its customers such as satisfaction because use may comprise negative or positive sentiments, implying opposing effects of asymmetrical magnitude.

A critical step in defining a social media analytics framework is to decipher, ultimately, which things actually matter to the firm, meaning which activities are worth a firm's time, efforts, and financial resources to bother monitoring.

Discussion and Implications for Future Research

Moving forward with this stream of research, our next imperative is to establish a system capable of accommodating a large scale analysis of data in order to identify overall trends and patterns. Desirable characteristics of a social media measurement system, we suggest, should include 1) accuracy, 2) actionability, meaning that firms can change their goals based on the information extracted from the measures, 3) ability to accommodate multivariate data, meaning it enables complex analyses of multiple variables in order to identify relationships, 4) economic feasibility, in that the cost of measurement is less than resulting benefits, and 5) high orthogonality of measures, meaning we want to avoid multiple measures that capture very similar information.

In **Table 2**, we identify the activities transpiring across the B@C dyad and map them to broad domains of research. The next step in the subsequent series of research efforts requires that we look at the activities in each cell and, referring to the respective research domains, decide how to best measure the particular exchanges. It should be noted that often, the activity captured in a given cell is part of a linear sequence of steps (see **Figure 3**), so a system of measurement should also record such linkages.

A firm is subject to multiple social media streams that can be described by multiple measures, and in turn, a given measure is likely to pertain to multiple social media. This second factor enables us to exploit economies of scale in our measurement efforts, meaning that a particular measurement may describe part of the functionality of several different types of social media outlets, and would thus pertain to the entire category instead of just a single technology. We propose the measurement of change in performance will take something of the following form:

$$\delta P = \sum \left(a_{ij} x_{ij}\right) + \varepsilon$$

which sums the effects of all media *i* per all measures *j* for a change in performance, δP.

The problems we face in measuring the effects of social media stem, in part, from the need for clearly defined objectives. To this end, it is critical that we craft a measurement system with respect to the context that defines our study. Without context, measurements of various effects lack meaning; without being tied to specific goals, metrics are likewise futile. Ultimately, we envision firm performance as the dependent variable of concern, since the focal stakeholder of our context is the firm. As organizational researchers, our concern with social media's contribution to firm performance is understandable; the purpose of this paper is, indeed, to move the field closer to the development of social media metrics that can be tied to this critical outcome. However, we acknowledge the myriad complications involved in attempting to isolate and measure variables that produce variations in performance (March and Sutton 1997). As noted in a variety of studies intended to predict firm performance, a fundamental problem in researching the effects of such variables as advertising is isolating them from competing or supplemental effects (Berthon et al. 1996). Distinguishing between the direct and indirect effects of such factors is difficult, a concern that extends to any attempt to tie social media-facilitated interaction to firm performance. As such, we theorize about firm performance at a disaggregate level, looking to a variety of proximal outcomes (e.g., increased customer satisfaction with customer service) that align with the various processes, activities, and goals that we identify in the layers of our model. A decade and a half ago Berthon et al. (1996) stressed the importance to firms of establishing specific communication objectives for their Web initiatives and identifying measurable means for establishing the success of such ventures; we co-opt that advice today as applicable to the realm of social media enterprise. Their observations regarding the ease with which Web-mediated efforts (or in this case social media effects) are measured, combined with a far shorter feedback loop than many other non-digital efforts, encourage our expectations for deriving valid, actionable, reliable measurements of social media that we can ultimately connect to firm performance.

References

Aakhus, M., Ågerfalk, P. J., Lyytinen, K., and Te'eni, D. 2011. "Call for Papers: MISQ Special Issue on Information Systems for Symbolic Action: Social Media and Beyond," *MIS Quarterly*.

Ahluwalia, R., Burnkrant, R. E., and Unnava, H. R. 2000. "Consumer Response to Negative Publicity: The Moderating Role of Commitment," *Journal of Marketing* (37:2), pp. 203-214.

Algesheimer, R., Dholakia, U. M., and Herrmann, A. 2005. "The Social Influence of Brand Community: from Evidence European Car Clubs," *Journal of Marketing* (69:3), pp. 19-34.

Andersen, P. H. 2005. "Relationship marketing and brand involvement of professionals through web-enhanced brand communities: the case of Coloplast," *Industrial Marketing Management* (34:3), pp. 285-297.

Ba, S., Stallaert, J., and Zhang, Z. 2010. "Balancing IT with the Human Touch: Optimal Investment in IT-Based Customer Service," *Information Systems Research* (21:3), pp. 423-442.

Barnes, N. G. 2010. *The Fortune 500 and Social Media: A Longitudinal Study of Blogging, Twitter and Facebook Usage by America's Largest Companies Marketing Research*.

Berthon, P., Pitt, L. F., and Campbell, C. 2008. "Ad lib: When Customers Create the Ad," *California Management Review* (50:4), pp. 6-30.

Berthon, P., Pitt, L. F., and Watson, R. T. 1996. "The World Wide Web as an Advertising Medium: Toward an Understanding of Conversion Efficiency," *Journal of Advertising Research* (34), pp. 43-54.

Boyd, D. M., and Ellison, N. B. 2008. "Social Network Sites: Definition, History, and Scholarship," *Journal of Computer-Mediated Communication* (13:1), pp. 210-230.

Charlett, D., Garland, R., and Marr, N. 1995. "How Damaging is Negative Word of Mouth?," *Marketing Bulletin* (6), pp. 42-50.

Chatterjee, P., Hoffman, D. L., and Novak, T. P. 2003. "Modeling the Clickstream: Implications for Web-based Advertising Efforts," *Marketing Science* (22:4), pp. 520-541.

Chou, W.-ying S., Hunt, Y. M., Beckjord, E. B., Moser, R. P., and Hesse, B. W. 2009. "Social Media Use in the United States: Implications for Health Communication.," *Journal of Medical Internet Research* (11:4), pp. e48.

Cone. 2008. *2008 Cone Business in Social Media Study Media*.

Cook, N. 2008. *Enterprise 2.0: How Social Software Will Change the Future of Work*, Gower Publishing, Ltd., pp. 164.

Culnan, M. J., Mchugh, P. J., and Zubillaga, J. I. 2010. "How Large U.S. Companies Can Use Twitter and Other Social Media to Gain Business Value," *MIS Quarterly Executive* (9:4), pp. 243-260.

Desautels, P. 2011. "UGIS: Understanding the Nature of User Generated Information Systems," *Business Horizons* (54:3), pp. 185-192.

Eagly, A. H., and Chaiken, S. 1993. *The Psychology of Attitudes*, Fort Worth, TX: Harcourt Brace Jovanovich.

El Sawy, O. A., and Bowles, G. 1997. "Redesigning the Customer Support Process for the Electronic Economy: Insights From Storage Dimensions," *MIS Quarterly* (21:4), pp. 457-483.

Etgar, M. 2007. "A Descriptive Model of the Consumer Co-production Process," *Journal of the Academy of Marketing Science* (36:1), pp. 97-108.

Featherman, M. S., Valacich, J. S., and Wells, J. D. 2006. "Is that Authentic or Artificial? Understanding Consumer Perceptions of Risk in E-service Encounters," *Information Systems Journal* (16:2), pp. 107-134.

Ferguson, R. 2008. "Word of Mouth and Viral Marketing: Taking the Temperature of the Hottest Trends in Marketing," *Journal of Consumer Marketing* (25:3), pp. 179-182.

Fournier, S., and Avery, J. 2011. "The Uninvited Brand," *Business Horizons* (54:3), pp. 193-207.

Gallaugher, J., and Ransbotham, S. 2010. "Social Media and Customer Dialog Management at Starbucks," *MIS Quarterly Executive* (9:4), pp. 1389-1404.

Godes, D., and Mayzlin, D. 2004. "Using Online Conversations to Study Word-of-Mouth Communication," *Marketing Science* (23:4), pp. 545-560.

Godes, D., and Mayzlin, D. 2009. "Firm-Created Word-of-Mouth Communication: Evidence from a Field Test," *Marketing Science* (28:4), pp. 721-739.

Goldenberg, J., Libai, B., Moldovan, S., and Muller, E. 2007. "The NPV of Bad News," *International Journal of Research in Marketing* (24:3) Elsevier, pp. 186-200.

Herr, P. M., Kardes, F. R., and Kim, J. 1991. "Effects of Word-of-Mouth and Product-Attribute Information on Persuasion: An Accessibility-Diagnosticity Perspective," *Journal of Consumer Research* (17:4), pp. 454-462.

Hoffman, D. L., and Fodor, M. 2010. "Can You Measure the ROI of Your Social Media Marketing?," *MIT Sloan Management Review* (52:1).

Hoffman, D. L., and Novak, T. P. 1996. "Marketing in Hypermedia Computer-Mediated Environments: Conceptual Foundations," *Journal of Marketing* (60:3), pp. 50-68.

Iyer, G., Soberman, D., and Villas-Boas, J. M. 2005. "The Targeting of Advertising," *Marketing Science* (24:3), pp. 461-476.

Kaplan, A. M., and Haenlein, M. 2010. "Users of the world, unite! The challenges and opportunities of Social Media," *Business Horizons* (53:1), pp. 59-68.

Keller, K. L. 1993. "Conceptualizing, Measuring, and Managing Customer-based Brand Equity," *Journal of Marketing* (57:1), pp. 1-22.

King, R. 2008. "How Companies Use Twitter to Bolster Their Brands," *BusinessWeek*.

Ko, H.-C., and Kuo, F.-Y. 2009. "Can Blogging Enhance Subjective Well-being Through Self-disclosure?," *Cyberpsychology & Behavior* (12:1), pp. 75-9.

Kozinets, R. V., Valck, K. de, Wojnicki, A. C., and Wilner, S. J. S. 2010. "Networked Narratives: Understanding Word-of-Mouth Marketing in Online Communities," *Journal of Marketing* (74:3), pp. 71-89.

Laczniak, R. N., Decarlo, T. E., and Ramaswami, S. N. 2001. "Consumers ' Responses to Negative Word-of-Mouth Communication: An Attribution Theory Perspective," *Journal of Consumer Psychology* (11:1), pp. 57-73.

Lewis, S., Pea, R., and Rosen, J. 2010. "Beyond Participation to Co-creation of Meaning: Mobile Social Media in Generative Learning Communities," *Social Science Information* (49:3), pp. 351-369.

Mangold, W. G., and Faulds, D. J. 2009. "Social Media: The New Hybrid Element of the Promotion Mix," *Business Horizons* (52:4), pp. 357-365.

March, J. G., and Sutton, R. I. 1997. "Organizational performance as a dependent variable," *Organization Science* (8:6) JSTOR, pp. 698–706.

McAlexander, J. H., Schouten, J. W., and Koenig, H. F. 2002. "Building Brand Community," *Journal of Marketing* (66:1), pp. 38-54.

Muñiz Jr., A. M., and O'Guinn, T. C. 2001. "Brand Community," *Journal of Consumer Research* (27:4), pp. 412-432.

Nambisan, S., and Baron, R. A. 2009. "Different Roles, Different Strokes: Organizing Virtual Customer Environments to Promote Two Types of Customer Contributions," *Organization Science* (21:2), pp. 554-572.

Parasuraman, A., Zeithaml, V. A., and Berry, L. L. 1985. "A Conceptual Model of Service Quality and Its Implications for Future Research," *Journal of Marketing* (49:4), pp. 41-50.

Piccoli, G., and Watson, R. T. 2008. "Profit from Customer Data by Identifying Strategic Opp ortunities and Adopting the 'Born Digital' Approach," *MIS Quarterly Executive* (7:3), pp. 113-122.

Ray, G., Muhanna, W. A., and Barney, J. B. 2005. "Information Technology and the Performance of the Customer-Service Process: A Resource-Based Analysis," *MIS Quarterly* (29:4), pp. 625-652.

Russell, M. G. 2010. "A Call for Creativity in New Metrics for Liquid Media," *Journal of Interactive Advertising* (9:2), pp. 44-61.

Schau, H. J., Muñiz, A. M., and Arnould, E. J. 2009. "How Brand Community Practices Create Value," *Journal of Marketing* (73:5), pp. 30-51.

Shankar, V., Smith, A. K., and Rangaswamy, A. 2003. "Customer Satisfaction and Loyalty in Online and Offline Environments," *International Journal of Research in Marketing* (20:2), pp. 153 - 175.

Soriano, J., Lizcano, D., Cañas, M. A., Reyes, M., and Hierro, J. J. 2007. "Fostering Innovation in a Mashup-oriented Enterprise 2.0 Collaboration Environment," *System and Information Sciences Notes* (1:1), pp. 62-68.

Sterne, J. 2010. *Social Media Metrics: How to Measure and Optimize Your Marketing Investment*, Wiley, pp. 272.

Stewart, D. W., and Pavlou, P. A. 2001. "From Consumer Response to Active Consumer: Measuring the Effectiveness of Interactive Media," *Journal of the Academy of Marketing Science* (30:4), pp. 376-396.

Sullivan, M. 1990. "Measuring Image Spillovers in Umbrella-branded Products," *Journal of Business* (63:3), pp. 309-329.

Tapscott, D., and Williams, A. D. 2008. *Wikinomics: how mass collaboration changes everything*, Portfolio, pp. 351.

Thompson, S. A., and Sinha, R. K. 2008. "Brand Communities and New Product Adoption:The Influence and Limits of Oppositional Loyalty," *Journal of Marketing* (72:6), pp. 65-80.

VanBoskirk, S. 2009. *US Interactive Marketing Forecast, 2009 To 2014* Cambridge, MA, pp. 1-20.

Watson, R. T., and Straub, D. W. 2007. "Future IS Research in Net-enabled Organizations," *ACM SIGMIS Database* (38:3), pp. 8.

Wattal, S., Schuff, D., Mandviwalla, M., and Williams, C. B. 2010. "Web 2.0 and Politics: The 2008 U.S. Presiential Election and an E-politics Research Agenda," *MIS Quarterly* (34:4), pp. 669-688.

Webster, J. G. 2010. "User Information Regimes: How Social Media Shape Patterns of Consumption," *Northwestern University Law Review* (104:2) Northwestern University School of Law Northwestern University Law ReviewNorthwestern University Law Review, pp. 593–787.

Whitty, M. T., and McLaughlin, D. 2007. "Online Recreation: The Relationship between Loneliness, Internet Self-efficacy and the Use of the Internet for Entertainment Purposes," *Computers in Human Behavior* (23:3), pp. 1435-1446.

Xu, S. X., and Zhang, X. (Michael). 2009. "How Do Social Media Shape the Information Environment in the Financial Market ?," in *ICIS 2009 Proceedings*.

Zeithaml, V. A., Parasuraman, A., and Malhotra, A. 2001. "Service Quality Delivery Through Web Sites: A Critical Review of Extant Knowledge," *Journal of the Academy of Marketing Science* (30:4), pp. 362-375.