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Impact of ESN implementation on communication and knowledge-sharing in a multi-national organization

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ABSTRACT

Organizations often focus on their employees' abilities to effectively communicate and share knowledge in online collaborative activities. Social media technologies facilitate that process in organizations, where they are known as Enterprise Social Networks (ESN). To increase potential benefits, organizations may run an implementation process to increase the ESN's acceptance and use. This study focused on one such platform, Yammer, which is making inroads into numerous industries. Specifically, we addressed Yammer's impact on communication and knowledge-sharing among organizational units in a multinational organization. This study unobtrusively assessed communication patterns before and after an ESN implementation process to measure impact. Data analysis performed on message interactions between employees on the Yammer platform suggested the implementation process had a positive impact on the number of messages, number of users, and weighted-degree SNA metric. This study also revealed that the implementation process positively impacted inter- and intra-organizational unit interactions.

1. Introduction

Widespread personal use of social network systems such as Facebook and LinkedIn (McHaney & Sachs, 2016; Valenzuela, Park, & Kee, 2009), has pressured corporate entities to adopt similar platforms to facilitate communication and knowledge-sharing. Recent research shows how social media impacts individuals. For instance, Shiau, Dwivedi, and Lai, (2018) determined aspects of Facebook's core knowledge including how it modifies user behavior; impacts privacy risk and interpersonal impression; and, its social impact. Research such as this emphasizes how computerized social networks can affect change but must be carefully understood to mitigate any unexpected difficulties in implementation from an organization perspective. In the corporate domain, these entities are called Enterprise Social Networks (ESN) (Treem & Leonardi, 2012). ESNs enable a new method of communication between colleagues, encouraging both personal and professional exchanges within the protected walls of a company intranet (DiMicco et al., 2008; Mäntymäki & Riemer, 2016). Whereas most information gathering and sharing in traditional enterprises is done via email (Bennett, 2012), the growing use of ESNs within organizations enables new forms of interaction (Subramaniam et al., 2013).

An ESN platform encourages employees or team members to share their thoughts, activities, and expertise (Janhonen & Johanson, 2011). Since an ESN collects and stores exchanges, employees' knowledge becomes available and searchable (Mäntymäki & Riemer, 2016). This reduces the need to interrupt colleagues with routine inquiries. If answers are not found, questions can be posted quickly in informal ways without causing disruptions (de Sousa, Wagner, Ormancey, & Grzywaczewski, 2015). For example, new employees deeply benefit from ESN platforms and use them to acquire corporate information at a rapid pace. Besides knowledge transfer and collaboration benefits, the use of ESNs results in large repositories of organizational data (Kane, 2017). These repositories include both structured data such as user details, messages, likes, and follows; and, unstructured data such as text message bodies, that can be analyzed by researchers or managers (Stieglitz, Dang-Xuan, Bruns, & Neuberger, 2014). As a result, ESNs are a source of important data used by researchers to evaluate opportunities for organizational improvement (Alimam, Bertin, & Crespi,

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2017).

In the current study, we investigated an ESN implementation process, and its impact on communication and interaction levels between employees of various units in an organization. Access to this organization's ESN data repository enabled us to base this study on actual communication data rather than data elicited from surveys or interviews. Specifically, we extracted data from a Yammer ESN platform implemented and used by employees of a multinational software company which develops and provides software systems and services for large companies and has more than 26,000 employees in different countries.

A main feature of this ESN was enterprise microblogging: the exchange of messages in conversation streams. This study analyzed extracted message data that covered a period of approximately 2 years and included more than 50,047 messages written by 5972 users. This time frame included the system implementation process. Quantitative data analysis and social network analysis techniques served to primarily investigate usage and establish relationships between employees of various organizational units in the company and allowed direct measures of implementation effectiveness. To do this, we first performed an analysis on the full data set. Next, to offer richer insights on the implementation process, we divided the data into six cumulative periods for analysis. These six periods represented key phases that enabled us to observe the implementation process impact as it progressed, and was consistent with theoretically grounded implementation lifecycles (Markus & Tanis, 2000).

2. Literature review

2.1. Enterprise social networks (ESN)

The success and popularity of social network tools such as Facebook and Twitter (Boyd & Ellison, 2007; Kaplan & Haenlein, 2010; Ngai, Tao, & Moon, 2015) have motivated many corporations to seek similar advantages with ESNs for their employees. ESNs refer to technologies that include foundational features associated with public social network sites, but are implemented within organizations, are sanctioned by management, have the ability to manage access permissions, and provide a means for accumulating organization data (Ellison, Gibbs, & Weber, 2015). An ESN platform enables interaction and information sharing among the employees (Aoun & Vatanasakdakul, 2012), and creates business value by allowing the users to form groups on specific topics or projects, post messages, conduct surveys and add announcements. In addition, ESNs can improve employee agility including proactivity, adaptability, and resilience (Cai, Huang, Liu, & Wang, 2018); and information management capabilities including knowledge sharing (Pee, 2018). Alimam et al. (2017) provide a comprehensive review of ESN research and offer future research directions in this growing area.

ESNs must be differentiated from general social media use by organizations. For instance, social media marketing (Alalwan, Rana, Dwivedi, & Algharabat, 2017; Aswani, Kar, Ilavarasan, & Dwivedi, 2018) and advertising with social media (Dwivedi, Kapoor, & Chen, 2015) entail an organization reaching out with social media to create recognition and enhance sales, customer contacts and so forth. Likewise, an organizational social media business profile as proposed by Chung, Andreev, Benyoucef, Duane, and O'Reilly, (2017) is different from typical ESN use. Shiau, Dwivedi, and Yang, (2017) provide a comprehensive analysis of extant literature on social networks.

Like social media used by individuals for personal networking, an ESN connects members of an enterprise through profiles, updates, and notifications; and develops a sense of community (Li, 2012). ESNs allow users to publish messages in an emerging, undirected message stream. Messages appear in chronological order in a combined view on the users' starting pages. Users may subscribe to other users' messages, join groups, or subscribe to keywords. This allows them to configure personalized message *activity streams*. Therefore, ESNs leverage the establishment of social relationships, interactive communication, and ad-hoc information sharing; and further put emphasis on user-generated content and preferences (Riemer, Scifleet, & Reddig, 2011).

While relationship building via *friends* in Facebook or *followers* in Twitter networks is at the heart of personal social networking (McHaney & Sachs, 2016), the main focus in ESNs is on messaging capability and knowledge sharing. However, as Kapoor et al. (2018) point out, a number of areas exist for research into social media use and implementation and these can be extended into ESNs. For instance: risks associated with use; the value created; and, negative stigma attached to social media within workplaces. Further, the use of social media for information sharing during critical events, seeking help and providing expertise are all areas where research has been conducted but opportunities for more work exists, particularly in the context of ESNs (Kapoor et al., 2018).

Interacting via messaging by posting work-related content, or by asking work-related questions, is considered among an ESN's main features for knowledge sharing between employees (Majchrzak, Faraj, Kane, & Azad, 2013). There are various ESN platforms available such as Yammer (Microsoft), Tibbr, Jive, Workplace (Facebook) and Connections (IBM). As enablers of social workflow, and by facilitating work-related communication and collaboration, ESNs comprise components such as message activity streams, wikis, microblogs, blogs, discussion forums, groups, recommendation engines, tagging and secure communities (McAfee, 2009; Stocker, Richter, Hoefler, & Tochtermann, 2012). The current study specifically investigated a Yammer implementation.

2.2. Yammer

Yammer launched in September 2008. In 2012, it was acquired by Microsoft and in 2017, published that over 85% of Fortune 500 companies utilized its services (Microsoft, 2017). The Yammer platform is organized on the concept of networks with one network representing one company (Riemer & Richter, 2012). An organization joining the Yammer platform creates a network for itself, and the company's users can register with their corporate email addresses (Riemer, Diederich, Richter, & Scifleet, 2011).

The Yammer front-end resembles Twitter's interface (McHaney & Sachs, 2016), with the posting stream as the main element. Like Twitter, Yammer is based on the *follower* principle where users choose which users to follow. When new users join a company network in Yammer, they initially subscribe to message streams of all users within that network (Riemer, Scifleet et al., 2011). The Yammer platform provides other Twitter-like functions, such as bookmarks of posts, tags, mentions, and replies (McHaney & Sachs, 2016). A primary Yammer feature is *groups*, like Facebook groups (Farrow & Yuan, 2011), which can contain different users within the network and can be created by a user according to specific requirements (e.g. for a topic area or project team). Users can choose whether to post their update to all followers, or to a group where only members can see the update.

2.3. ESN implementation

Encouraging employee use of an ESN platform is a primary challenge for organizations hoping to improve work-related communication, collaboration and knowledge-sharing (Krischkowsky, Fuchsberger, & Tscheligi, 2014). Although ESNs offer new possibilities, rules, and modes of communication (Ulmer & Pallud, 2014), effective deployment of an ESN platform in a formal organization is not straightforward. ESNs differ from conventional IT implementation in terms of content generation flexibility, voluntariness of use, many-to-many interactions, high intuitiveness, low degrees of governance, and unstructured quality assurance (Chin, Evans, & Choo, 2015; Steinhuser, Smolnik, & Hoppe, 2011). Past research suggests a good way to activate an ESN platform is with an implementation process intended to increase the platform's use—this will, in turn, help employees during the adoption process (Turban, Bolloju, & Liang, 2011). Organizations