

Research Report

Contribution of Awareness Information in Virtual Communities – The Case of a Financial Institution

IN DISTRIBUTED WORK ENVIRONMENTS, IT IS A CHALLENGING ISSUE FOR ORGANIZATIONS TO SUPPORT THEIR EMPLOYEES IN STAYING AWARE OF ALL IMPORTANT DEVELOPMENTS IN THEIR WORK ENVIRONMENT. ACCORDINGLY, IN THIS STUDY WE DEVELOP AND EMPICALLY TEST A CONCEPTUAL MODEL TO ENHANCE OUR UNDERSTANDING OF THE INDIVIDUALS' CONTRIBUTION BEHAVIOR OF AWARENESS INFORMATION. WE PROVIDE GUIDANCE FOR THE DESIGN AND EVALUATION OF INFORMATION SYSTEMS TO SUPPORT THE CREATION OF SITUATION AWARENESS.

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Introduction

In order to stay competitive in the market, organizations are increasingly forced to reduce costs and decrease time-to-market through the introduction of distributed work in which physically dispersed individuals collaborate across different locations and time zones. The emergence of innovative communication technologies has accelerated this trend. Thus, especially the financial services industry with its information-driven business processes and globally-oriented business models are reaping the benefits of such work settings today.

However, as work becomes more global and distributed, it has proven to be difficult for

workers to stay aware of all relevant information in their work environment. Specifically, it has been shown that individuals often lack what has been labeled situation awareness (SA) which in turn may lead to inferior work performance. In brief, SA has been defined as an individual's knowledge about what is going on in its immediate environment (Endsley and Garland, 2000). For example, workers need to be aware about their colleagues' emotional state or whom to ask regarding a specific issue for working together efficiently.

Since the development of SA depends on the individual's ability to extract relevant information from the work environment – subsequently

referred to as awareness information (AwI) – specific information systems (IS) are necessary to improve workers' access to such information, particularly in distributed work settings (Hinds and Bailey, 2003). In this regard, virtual community (VC) enabling technologies, such as enterprise social media platforms, seem to be a promising solution. Such platforms foster rich interaction between distributed individuals and improve interaction transparency as well as peoples' perception of others. Hence, individuals might be able to extract a large amount of AwI by engaging in and observing other community member's social interactions online. This may

then lead to higher SA and more effective collaboration between distributed workers. However, since participation in VCs is typically voluntary, the availability of AwI and hence the benefits of VCs for improving individuals' SA is fundamentally based on other VC members' motivation to contribute AwI to others. Thus, it is important to develop a deeper understanding of the factors that influence individuals' willingness to contribute AwI in VCs.

Accordingly, we aim at explaining individuals' AwI contribution behavior in VCs. Therefore, we take into account that collaborating individuals

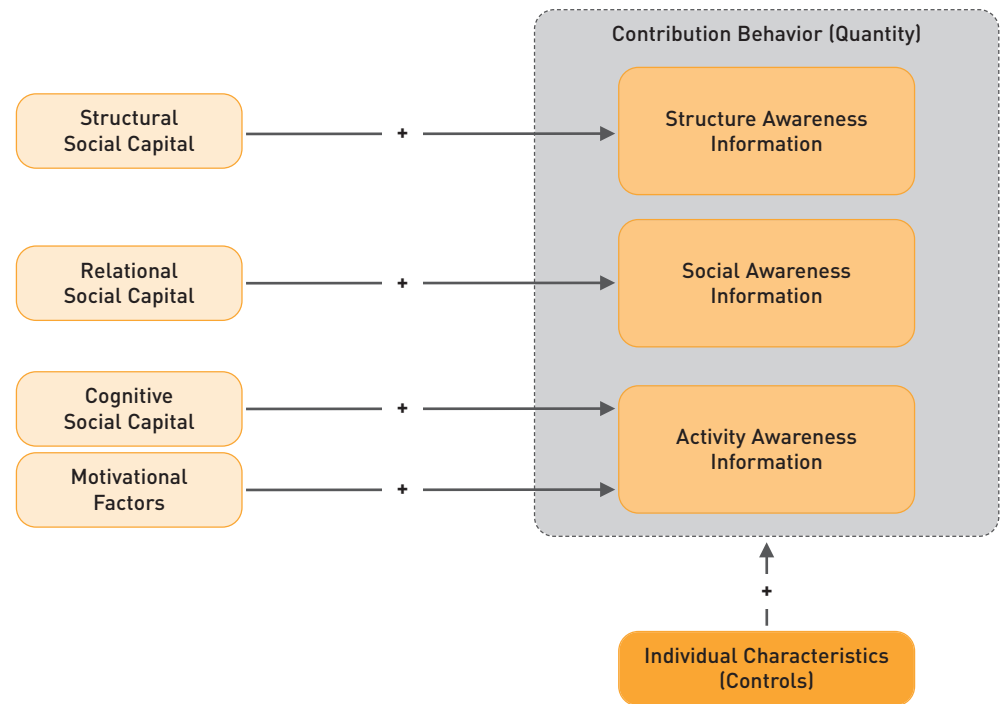


Figure 1: Research Model – Awareness Information Contribution

generally need three different types of Awl for developing SA: activity Awl, structure Awl, and social Awl (Seebach et al., 2011). The first type, activity Awl, includes information that is related to activities needed to achieve a common goal. Structure Awl, as the second type, is defined as an aggregation of all information related to knowledge about informal and formal structures at work. And finally, social Awl comprises information that is related to social interactions between collaborating individuals.

In particular, we analyze how social capital affects individuals' willingness to contribute these specific types of information needed to develop SA.

Research Model

Based on the theory of situation awareness, virtual communities as well as social capital, we propose a research model to investigate how individuals' Awl contribution behavior (i.e., the quantity of Awl individuals contribute) depends on VC members' social capital. In particular, we argue, that an individual's structural, relational, and cognitive social capital impacts the willingness to contribute activity, structural, and social Awl (Nahapiet and Ghoshal, 1998). Additionally, we take into consideration motivational factors and control variables which have been found to affect contribution behavior in VCs by previous studies (Wasko and Faraj, 2005).

For empirically testing the research model depicted in Figure 1, data was collected from a large international financial institution, which had established an enterprise microblogging

(EMB) based internal VC to improve communication and collaboration capabilities. In particular, most employees were located in UK, USA, Germany and India. The data set contains more than 15,000 messages sent by almost 1,200 VC members during the second half of 2010. As depicted in Figure 2, the EMB posts contain a high amount of Awl. Specifically, 4,706 mes-

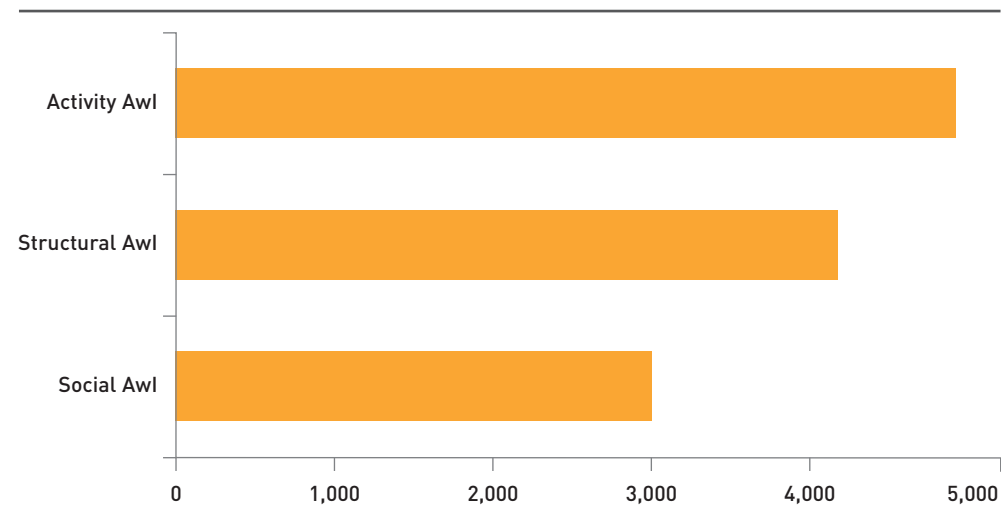


Figure 2: Amount of Messages containing Awareness Information

sages include activity Awl, 4,244 posts contain structural Awl, and 3,020 of the contributed posts comprise information that helps to improve social interaction between individuals (social Awl). Furthermore, the dataset contains meta-data regarding social network structures, VC member profiles, and userspecific settings that were used to derive measures for the explanatory variables. For testing the research model empirically, multiple negative binominal regressions were applied.

Discussion of the Results

The results of our descriptive analysis show that the messages exchanged via the EMB platform are a rich source of awareness information. More than 50% of the analyzed posts contain at least one of the three categories of awareness information. Specifically, more than 28% of the messages support users with activity Awl. However,

improves model fit and increases the explained portion of the total variance significantly. Structural social capital factors, e.g., the number of contacts an individual has, exhibits a positive and significant effect on structure Awl contributions and the quantity of activity Awl. Moreover, the empirical results show that the influence of relational social capital (e.g., the strength of relationships between individuals) on social Awl quantity is the strongest. Cognitive social capital such as shared vision and goals among individuals only exhibit a positive and significant influence on the quantity of activity Awl. On the other hand, motivational factors such as reputation expectations in addition to the positive influence on activity Awl quantity also positively affects the amount of structural Awl provided by the members of the VC.

In total, the results of our study provide strong support for the hypothesized relationships in our research model. Thus, the study provides empirical evidence for the propositions that individuals who have gained more structural social capital contribute more structure Awl. Further, higher relational social capital increases the amount of social Awl, and more cognitive social capital as well as motivational factors lead to more activity Awl contributions. In addition to the proposed relations, the empirical results also reveal some further interesting findings. In this respect, the role of relational social capital is in particular remarkable. Specifically, the results show a positive and highly significant effect of relational social capital on the provision of each of the three types of Awl, indicating that relational

with a share of more than 30% for structural Awl and 22% for social Awl, the other two types are well represented in the messages also.

Coming to the analytical investigation, our empirical results clearly indicate that individuals' characteristics (control variables) account for a significant amount of variation in social Awl quantity. Adding the explanatory factors (structural, relational, and cognitive social capital, as well as motivational factors) to the model further

social capital overall has a positive impact on individuals' awareness contribution behavior. This may be attributed to the argumentation that stronger relationships are associated with a mutual emotional attachment, which facilitates individuals' willingness to put forth more time and effort on behalf of each other. Since the contribution of any kind of information is time consuming, it is no surprise that relational social capital positively influences individuals' contribution behavior with respect to structural Awl and activity Awl as well.

Interestingly, the findings also reveal strong and positive influence of motivational factors on the amount of structural Awl. This finding can be explained by the behavior that members of VCs try to impress others with their knowledge about work processes and organizational structures.

Finally, the empirical results provide evidence for structural social capital influencing the willingness to contribute activity Awl. This might be justified by the argumentation of Nahapiet and Ghoshal (1998), who defined social ties as potential channels for information flows. In this regard, it is reasonable to assume that individuals with a higher amount of such information channels are also better informed about their colleagues' activities and information needs.

Conclusion

Our analysis of the EMB platform illustrates how an enterprise social media platform in general supports the creation and maintenance of SA within a corporate context through facilitating the exchange of different types of

Awl between dispersed coworkers. In doing so, our research contributes to the current academic understanding on SA and individuals' contribution behavior in VCs. Therefore, this study proposes and empirically analyzes a theoretical model that explains individuals' Awl contribution behavior in VCs. As a result, we were able to provide first empirical evidence that social capital is important for our understanding of individual's contribution behavior with respect to the different types of Awl. In particular, the empirical results confirm the importance of structural, relational and cognitive social capital on individuals' contributions in VCs enabled through enterprise social media platforms. Beyond this general implication, our empirical investigation in addition suggests that the extent to which the different social capital dimensions influence individuals' contribution behavior strongly varies with respect to the type of Awl.

In addition, our research provides several managerial implications. Because the findings of our study suggest that individual social capital significantly affect users' Awl contribution behavior, managers and system designers should focus their development efforts on those factors that have a strong impact on individuals' motivation to contribute Awl. This may enhance effective communication and collaboration among employees.

For example, our finding that strong social ties positively influence individuals' contribution behavior provides further insights on how to facilitate the distribution of Awl through VCs in a

corporate context. Consequently, features should be implemented that support trust and interpersonal connections, specifically between workers that are not collocated. In this regard, the follower feature – as it was implemented on the investigated EMB platform – might be a promising means for this purpose. Such features can be utilized to improve interaction transparency and provide individuals with the opportunity to build up strong relationships with coworkers who are distributed across different locations around the globe.

By highlighting the key role of individual's reputation and individuals' personal identity on providing Awl in VCs, this study further suggests that appropriate technologies should offer effective features for self-presentation. Moreover, such platforms should reward individuals' contribution efforts by leveraging features that help to uncover an individual's reputation.

In summary, our empirical findings substantiate the value of enterprise social media platforms for organizations with regard to the creation and maintenance of SA within a corporate context. For instance, the investigated EMB platform, as an example of enterprise social media, already contains the aforementioned functions – such as the follower feature, user profiles or reputation mechanisms – and may thus be a promising solution for facilitating the distribution of Awl in organizations and for improving SA. Since SA is an important prerequisite for successful collaboration, we conclude that social media platforms can play a crucial role to generate business value from

improved exchange of Awl among employees. In this regard, our findings contribute toward a better understanding on the use and value of enterprise social media platforms in an organizational context.

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