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CRITICAL SUCCESS FACTORS FOR THE ADOPTION OF ACTIVITY STREAMS IN ENTERPRISE CONTEXT

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ABSTRACT

The deployment of social technology within the corporate sector is evolving and increasingly demonstrating its value for connecting people. At a time when social media's pervasiveness has shaped the business sector, it is important to explore new ways of optimizing its use and harness its benefits to their fullest extent, to engage the employees and the customers as well as to increase revenue. In the context of enterprises, the use of social media can profit from the organisation that activity streams offer. By grouping the actions of users in social media, an activity stream can offer a customized and organized visualization of events that can assist companies to make sense and manage their social media activities. This paper draws extensively from existing research on the application of information systems within enterprises to create a set of critical success factors for the implementation of activity streams. The critical success factors that this paper proposes were assessed through an online survey that was completed by 360 social networks' users. The survey analysis showed a complete acceptance of the factors by the majority of the respondents, with a particular focus on factors deriving from three categories: effective communication, processes and activities, and strategy and purpose.

KEYWORDS

Activity Streams, Enterprise Social Networking, Social Networks, Collaboration, Knowledge Management, Information Systems, Critical Success Factors

1. INTRODUCTION

Social networks are structured or non-structured connections between people or organizations that interact through common values and objectives. This assumes that people know how to interact with each other (Jalal and Zaidieh, 2012). Our society, friends and family are examples of social networks. Although this concept is not new, technology has improved the process of connection between people. Social networking has become one of the most

important communication tools (Jalal and Zaidieh, 2012) with growing adoption rates by enterprises. Eurostat (2016) reported that 39% of EU enterprises have employed at least one type of social media platform, in 2015, which represents an increase from 30%. in 2013. Also, in 2015 social networks continued to be the preferred form of social media within the context of EU enterprises, with 36% of adoption (28%, in 2013), followed by websites of content-sharing services (13% in 2015 and 11% in 2013). According to Bughin (2015) this adoption is providing considerable returns depending on the levels of penetration. Enterprises with a 25% of penetration level reported an increase of 0.6% in added value; with 50% that increase rises to 1.7%; with 75% is grows 3.4%; and with 100% of penetration level the increase is 5.8%.

Social networking platforms such as Facebook, Twitter, LinkedIn, MySpace, and Google+ have revolutionized the web by implementing a new concept called real-time web. The real-time web is characterized by highly intensive streams of updates and news (Guy et al., 2012). Users share their interests and make various shared files, photos and videos available to the members of these networks, create blogs, send messages and conduct real-time conversations. The connectivity between users is the main purpose of these new web tools. These updated messages are called activity streams. Leading social media sites publish activity streams that include millions of activities per day, generated by millions of users who write their status updates, share links and photos, join groups, comment, and "like" others' activities. Each stream comprises an actor, a verb and an object. After their success on the Web, social networking applications have also emerged within enterprises, promoting communication and information sharing among their employees. This paper intends to propose a set of Critical Success Factors (CSFs) that can assist companies to effectively employ activity streams to manage their social media activity.

This paper begins by introducing the concept of activity streams and its importance and by proposing a set of CSFs for its implementation within corporate settings. It then proceeds to describe the methods that guided the design, administration and analysis of the survey that was used to validate the CSFs. The paper concludes with a section that presents and analyses the main findings of the empirical research.

2. ACTIVITY STREAMS

An Enterprise Social Network (ESN) consists of a set of applications that promote relationships between enterprise collaborators. According to Butler et al. (2010), communication, collaboration and knowledge sharing are the purposes for which an organization can use a social network. Turban et al. (2011) have identified six major applications and related activities for social networking in an enterprise context: communication, collaboration and innovation, knowledge management, training and learning, management activities and problem solving, and finally information dissemination and sharing. All of these applications are related to various enterprise departments and activities.

Li (2012) identified six similar elements shared by public and enterprise social networks. These elements are: people profiles, object profiles, updates and activity streams, notifications, relationships, and permissions and privacy. Table 1 summarizes the matching elements of Public Social Networks (PSN) and ESNs.

Table 1. PSN and ESN elements (Adapted: Altimeter Group)

	Public Social Network (PSN)	Enterprise Social Network (ESN)
People Profiles	Who you are, where you went to school, interests.	Similar to public networks, but also lists work-related associations and expertise (training, projects, skills)
Object Profiles	Places and brands also have activity streams	Business objects (client accounts, documents, expense reports) also have activity streams associated with them.
Updates and Activity Streams	Created by the person. Can also include chats, video, group messaging and event planning.	Similar; created by people interacting with each other, as well as business objects and enterprise systems.
Notifications	People can completely control from whom they get updates.	Some updates may be mandatory because of work associations, e.g. updates from the CEO.
Relationships	Two-way relationships, as well as one-way following/subscribing, always controlled by the person.	Similar, but relationships may be predetermined because of work associations (departments, team, project, location).
Permissions and Privacy	The nature of relationships dictates permissions, so greater care must be taken to make sure that private information stays within the right circles.	Employees understand that all updates can be seen by their employer; hence privacy becomes less of an issue. Permissions become a greater concern in terms of who has permission to see what information.

The concept of activity streams derives from the idea of lifestream. A lifestream is a time-ordered stream of documents that functions as a diary of your electronic life; every document you create or receive from other people is stored in your lifestream (Freeman, 1997). The implementation of lifestream documents comes from the success of feeds such as RSS (Really Simple Syndication), a web feed format used to publish updated works (blog entries, news headlines, audio and video) in a standardized format. RSS is identified as the predecessor of the Activity Stream mechanism: a web feed format is a technology enabler for Activity Stream protocol, which aims to syndicate activities across social web applications (Soulier et al., 2012). An RSS protocol consists of a message including three mandatory fields: title, link and description. In 2005, a group of people created a better-specified syndication format called Atom. The Atom specification adds to RSS (title, link, summary) the author and when it was last changed (author, ID, updated) to give a unique way of identifying a feed entry. Technically, Atom should be considered as a more advanced syndication format than RSS. This new format was designed for syndicating articles into web portals. Years later, social media developers defined a new type of web feed format, called Activity Stream. The Activity Stream approach shifts the RSS-Atom focus from static content, documents and other temporary artefacts to the source of the energy, creativity and decision making, in a

people-centric approach where "activity" is at the beginning (Soulier et al., 2012). Activity Streams have been taken up in the social media development community as well, as both developers and users have noticed the potential for using them within and especially across various kinds of social media services. In 2008, Chris Messina, Jyri Engestrom and other social media developers launched the *activitystream.ms* project. The main goal of this project was to create standard specifications for social media services to implement shared protocols, allowing activity in a centralized service. According to the activitystream.ms wiki: *"The activity in ActivityStreams is a description of an action that was performed (the verb) at some instant in time by someone or something (the actor) against some kind of person, place, or thing (the object). There may also be a target (like a photo album or wishlist) involved."*

The Facebook news feed is the best example to demonstrate an activity streams' mechanism. This tool occupies the central part of a user's Facebook homepage, showing friends' recent activities, and including status updates, friend additions, group joining, page "liking", profile changes, and photo sharing or tagging (Guy and Ronen, 2011). These features provided by activity streams have also been implemented by ESN platforms. The basic idea of the Activity Stream concept is to take existing streams of content which represent all of the activities coming out of networks, websites, applications, repositories, emails and tweets (Soulier et al., 2012).

2.1 Applications and previous studies

Activity Streams provide a personalized, aggregated view of events, notifications and relevant action items across the range of enterprise systems, collaborative tools and social media (Guy et al., 2012). The goal of the Activity Stream is to provide a standards-based capability enabled by an aggregation service, which can be linked into any enterprise application.

There are many research studies into the implementation of activity streams, based on their capacity to help in collaborative work (Hart-davidson et al., 2012), or to search (Guy et al., 2012), collect, aggregate (Bernstein et al., 2010; Guy and Ronen, 2011) and organize data streams (Chen et al., 2010). Activity Streams may help weave together business processes, collaborative tasks and social networking, while retaining decentralization and individuality (Soulier et al., 2012). In brief, it can be concluded that:

- Activity Streams are emerging in enterprise social applications as a standard mechanism to publish real time and up-to-date messages;
- Data streams can be categorized on the basis of their complexity;
- Activity Streams can help in collaborative work;
- Search and Aggregation methods are the main challenges to implement and activity streams' mechanism.

3. CRITICAL SUCCESS FACTORS FOR THE IMPLEMENTATION OF ACTIVITY STREAMS

In the context of information systems research, much attention has been given to measuring the success of their implementation (DeLone and McLean, 1992). For this reason, identifying which factors are critical for the success of information systems' implementation is a mandatory task for information systems managers. The CSF approach has been popularized by

Rockart (1978) and other researchers such as Leidecker and Bruno (1984) and it is being increasingly used by information systems departments and by consultants, as an aid to information systems strategic planning (Esteves, 2004). The CSFs that this study proposes for the implementation of an activity streams project derive from a literature review on the implementation of several types of information systems within enterprises. The CSFs from studies on ERP (Enterprise Resource Planning) systems (Nah et al., 2001; Wong and Tein, 2003), knowledge management systems (Wong, 2005), enterprise-wide information systems (Sumner, 1999), social media (Zeiller and Schauer, 2011), agile software development (Chow and Cao, 2008) and enterprise social networking (Maan, 2012) were adapted to suit the characteristics of an activity streams project implementation in an organizational context (Table 2).

Table 2. Proposed CSFs to be implemented in enterprise activity streams projects

CSFs		References
Management leadership and Support		(Sumner, 1999; Wong and Tein, 2003; Wong, 2005)
MS1	Promoting executive involvement to implement activity streams.	
MS2	Achieving the support of senior management for accomplishing project goals and objectives.	
MS3	Managers to promote their own vision of using activity streams.	
Strategy and Purpose		(Maan, 2012; Nah et al., 2001; Sumner, 1999; Wong and Tein, 2003; Wong, 2005; Zeiller and Schauer, 2011)
SP1	Defining a clear and well-planned strategy to implement activity streams.	
SP2	Developing a business plan for this purpose.	
SP3	Aligning project goals and objectives with strategic business goals.	
Culture		(Wong, 2005)
C1	Implementing organizational culture based on social collaboration and sharing and promoted in social networking sites.	
IT		(Sumner, 1999) (Wong, 2005)
IT1	Obtaining IT top management support for the project.	
IT2	Obtaining professional development of the IT workforce.	
Effective Communication		(Wong and Tein, 2003; Wong, 2005)
EC1	Encouraging employees to share information.	
EC2	Empowering employees by giving them a voice within the company.	
EC3	Promoting better communication.	
Motivational factors for User acceptance		(Wong, 2005; Zeiller and Schauer, 2011)
MF1	Making the activity streams tool a necessary platform for the job.	
MF2	Making the activity streams tool easy and intuitive to use.	
MF3	Making relevant content available within the activity streams' platforms.	
MF4	Making available updated content.	
MF5	Working faster when using the activity streams' platforms.	

MF6	Working more easily when using the activity streams' platforms.	
MF7	Making the activity streams tool a centralized information platform.	
MF8	Defining new ways of information dissemination on the activity streams' platforms.	
MF9	Networking with partners.	
Processes and Activities		(Chow and Cao, 2008; Turban et al., 2011; Wong, 2005; Zeiller and Schauer, 2011)
PA1	Enabling integration in daily work-flow.	
PA2	Management support.	
PA3	Problem solving.	
PA4	Knowledge management.	
PA5	Providing innovation.	
PA6	Promoting information sharing.	
PA7	Enabling integration with core enterprise applications such as CRM, ERP, and sales information systems.	
PA8	Improving collaboration.	
PA9	Improving efficiency through better coordination.	
Training and Education		(Sumner, 1999) (Wong, 2005; Zeiller and Schauer, 2011)
TE1	Improving effective user training and user support.	
TE2	Promoting workshops.	
Resources		(Wong, 2005)
R1	Emphasizing financial support for technological investment.	
R2	Defining a Human Resources plan to coordinate and manage the implementation process of activity streams.	
Measurement		(Wong, 2005)
M1	Collecting data that give useful information about a particular situation or activity to be measured.	
M2	Collecting data that demonstrate the value and worthiness of an activity streams initiative.	

This research project intends to evaluate the Activity Stream as a tool to support all of these applications. Rob Koplowitz stated that "Social activity streams are a bridge to enterprise social vision". They connect workers to each other and to information" (Koplowitz, 2012). Assuming social activity streams serve as a bridge for enterprise social vision, we need to understand the main critical factors for implementing these platforms in enterprises.

The following four research hypotheses were identified on the basis of the literature review:

- **H1.** Research on the adoption of information systems within enterprises, can assist the identification the CSFs for implementing the activity streams within enterprises
- **H2.** The activity streams mechanism helps and improves working activities.
- **H3.** Improvement in communication between collaborators is a key factor for implementing an activity streams project in organizations.
- **H4.** The IT department assumes the leadership for an activity streams implementation project in organizations.

4. METHODOLOGY

In order to validate previous research hypotheses, a survey was created containing questions based on ESN applications and features with major relevance to the activity streams mechanism. The survey includes the CSFs identified in Table 2, to be assessed by the survey's respondents through a Likert scale. Despite the research challenges that non-probability sampling represents, in this study the participants were identified by the snowball sampling method. This method was chosen due to its applicability over the internet and the fact that it can be valuable in the study of social networks (Isaias et al., 2012). The survey was distributed through social networking sites (using posts, groups in Facebook and LinkedIn) and by email. The people to whom the email sent was identified as: employees from organizations which have ESN tools implemented; employees from IT organizations in Europe; professionals of social media and social networking platforms; users of social networking platforms; individuals invited by other individuals to answer the survey. This dissemination of the survey didn't allow a specific account of the number of subjects that were referred by others.

5. RESULTS AND DISCUSSION

The survey has received 360 responses. The male respondents correspond to 64% of the sample, while the female respondents correspond to 39%. The majority of the participants are from Portugal (71%), but the sample covered ten more countries, namely Austria, Germany, United States and United Kingdom. With regards to their working experience 35% had been working for less than 5 years, 23% had been working for 5-9 years, another 23% for 10-19 years and 19% had been working for 20 year or more. Finally, the sample covered employees from enterprises from various sectors, such as IT and Services (28%), computer software (15%), banking (6%), and telecommunications (3%); and from several job functions, namely it (16%), consulting (12%), management (9%), engineering (8%) and marketing (5%).

Following the demographic questions, the participants were asked about their use of SNSs and ESNs (Figure 1).

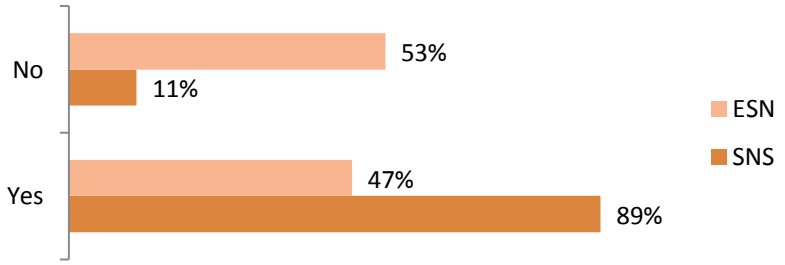

Figure 1. SNS users versus ESN users

The majority of the respondents use SNS for their personal communications (89%) but only 47% of the respondents use social networking platforms in their organizations, which is expected of an emerging technology in the corporate sector. According to Zeiller and Schauer

(2011) there are four main characteristics which define ESN tools: *reliability*, *usefulness*, *effectiveness* and platform *ease of use*. ESN users were invited to evaluate those characteristics about their enterprise social software. Figure 2 shows the results obtained through the survey.

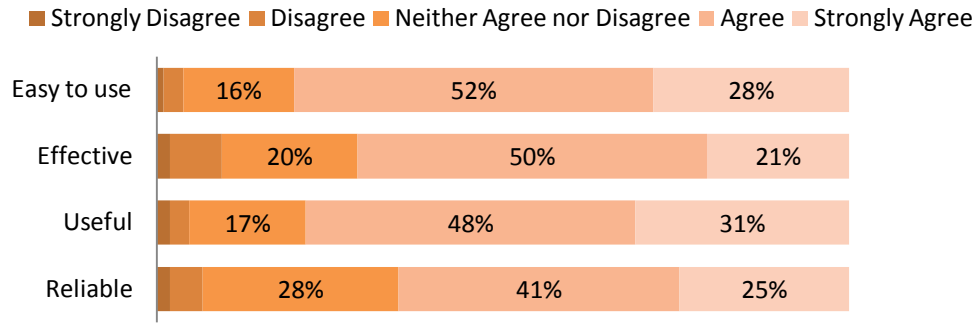

Figure 2. Characteristics of an ESN platform

An expressive majority of the respondents agrees or totally agrees that the enterprise social software implemented in their organization is easy to use, effective, useful and reliable. In an effort to understand which are the most significant, descriptive statistics have been measured for each characteristic. According to the Likert scale used in this study, Strongly Disagree corresponds to 1 and Strongly Agree to 5. The characteristic easy to use had the highest mean value, followed by the characteristic useful.

The participants were asked to rank the priority of the main objectives of an ESN tool, where rank 1 corresponded to top priority and rank 5 to the lowest priority (Figure 3).

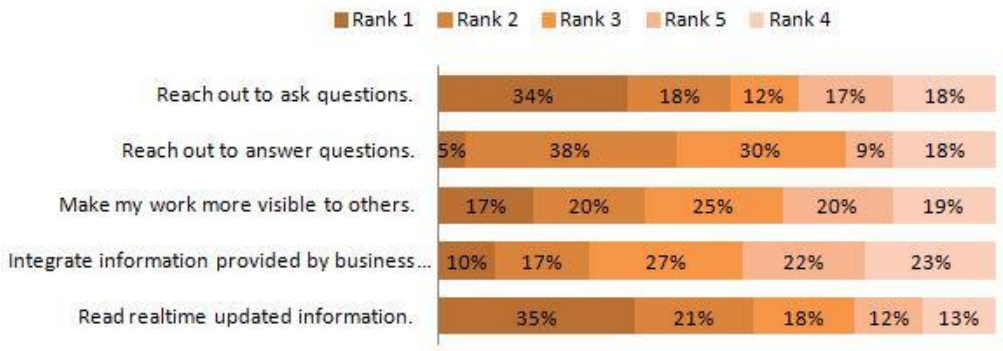

Figure 3. ESN main objectives

The respondents highlighted Reach out to ask questions and Read real time updated information as the objectives with the highest priority, followed by Reach out to answer questions, which was attributed to rank 2, by 38% of the participants. The descriptive statistics of the ESN's showed that Read real time updated information, which had the highest mean (3.55), is the most important objective of an ESN. This result helps to illustrate the importance of studying activity streams as the main mechanism for publishing real time messages in ESN platforms. Also, the objective *Reach out to ask/answer questions* had a mean of 3.44.

With concern with the CSFs for the adoption of Activity Streams in an enterprise context, the participants were asked to assess the proposed CSF (in Table 2) using a five-point Likert scale (from 1 - Strongly Disagree to 5-Strongly Agree. The mean of each CSF was considered in order to rank the CSFs (Table 3).

Table 3. CSFs analysis of mean

Position	CSF	N	Mean	Std. Dev.	Position	CSF	N	Mean	Std. Dev.
1	**EC3**	181	4.34	0.78	19	MF4	185	4.01	0.79
2	**EC1**	183	4.33	0.79	20	IT1	184	3.99	0.81
3	**EC2**	183	4.28	0.78	21	PA2	182	3.99	0.72
4	PA6	181	4.24	0.71	22	M2	184	3.98	0.71
5	PA8	184	4.22	0.71	23	SP2	185	3.97	0.90
6	SP3	181	4.19	0.79	24	M1	184	3.97	0.69
7	PA4	181	4.14	0.72	25	MF9	184	3.95	0.78
8	SP1	185	4.13	0.77	26	PA7	183	3.92	0.80
9	PA9	184	4.11	0.80	27	MF6	184	3.91	0.79
10	PA3	183	4.10	0.76	28	TE2	179	3.90	0.70
11	MF2	184	4.10	0.72	29	IT2	184	3.90	0.85
12	MF3	185	4.10	0.72	30	MF8	185	3.87	0.68
13	MS2	187	4.07	0.78	31	MF7	185	3.87	0.86
14	C1	182	4.07	0.87	32	MS3	187	3.83	0.78
15	TE1	181	4.06	0.68	33	MF5	184	3.82	0.90
16	MS1	186	4.05	0.75	34	R2	183	3.79	0.83
17	PA5	182	4.03	0.79	35	R1	184	3.78	0.74
18	PA1	184	4.03	0.69	36	MF1	184	3.67	0.85

The analysis of the mean values of the CSFs shows that *Effective Communication (EC)* is the most important category of CSFs for the survey respondents. This category comprises three CSFs: promoting better communication (EC3); empowering employees by giving them a voice within the company (EC2) and encouraging employees to share information (EC1). The top ten of the CSFs is completed by factors from the Processes and Activities (PA) and Strategy and Purpose (SP) categories: promoting information sharing (PA6); collaboration (PA8); aligning project goals and objectives with strategic business goals (SP3); knowledge management (PA4); better coordination (PA9); clear strategy (SP1); and finally problem solving (PA3). Although the effective communication (EC) category had only a modest support from previous studies (Wong and Tein, 2003; Wong, 2005), Processes and Activities (PA) and Strategy and Purpose (SP) were the categories that had a more significant support from the literature (Chow and Cao, 2008; Turban et al., 2011; Wong, 2005; Zeiller and Schauer, 2011); (Maan, 2012; Nah et al., 2001; Sumner, 1999; Wong and Tein, 2003; Wong, 2005; Zeiller and Schauer, 2011). Also, the mean value was greater than 3.6 for all of the CSFs analyzed. Overall, the entirety of the CSFs that were identified through the literature were considered relevant by the majority of the respondents.

5.1 Relationships between CSFs using Factor Analysis

In order to analyze the relationships between CSFs, a factor analysis was performed. Each of the 36 CSFs identified in Table 2 represents one factor analysis variable to study. In total, 186 responses for the set of questions related to CSFs were collected. After incomplete responses had been rejected, 152 valid responses for this statistical test were identified. To guarantee the success of this analysis it is mandatory to verify the correlation levels between variables. For this purpose, both Bartlett's test of sphericity and the Kaiser-Meyer-Olkin (KMO) test were performed. For the Bartlett's test of sphericity (Figure 4) the sig (P) value for this test analysis (0.000010) is less than 0.05. Based on this result, the null hypothesis was rejected and it can be concluded that there are correlations between CSFs identified in Table 2. Also, the KMO test result (Figure 4) is 0.90533 and it can be concluded that factor analysis is appropriate for this statistical test.

ADEQUACY OF THE CORRELATION MATRIX
Determinant of the matrix = 0.000000000005649
Bartlett's statistic = 3578.5 (df = 630; P = 0.000010)
Kaiser-Meyer-Olkin (KMO) test = 0.90533 (very good)

Figure 4. Bartlett's statistic and KMO test

To perform the factor analysis, first, the *eigenvalues* were determined, representing the variability of each component and the percentage of variance. The number of factors in this analysis was defined using the determination method based on eigenvalues. In this approach, only factors with eigenvalues greater than 1.0 are retained (Malhotra, 2009). To minimize the number of variables with high loadings on a factor, thereby enhancing the interpretability of the factors, the *varimax* procedure was used. All the factors identified can be interpreted in terms of the variables that load on it. To identify the most significant variables for each factor, variables with a loading value greater than 0.5 were considered. The variables with the highest coefficients are more strongly correlated with the factor (Mingoti, 2005). Table 4 summarizes the factors and correlated variables.

Table 4. Factors identified by the factor analysis test

Factor 1 – Workplace Improvements	
MF5	Working faster when using the activity streams' platforms.
MF3	Making relevant content available within the activity streams' platforms.
MF6	Working more easily when using the activity streams' platforms.
MF4	Making available updated content.
MF7	Making the activity streams tool a centralized information platform.
MF2	Making the activity streams tool easy and intuitive to use.
PA3	Problem solving.
PA4	Knowledge management.
PA5	Providing innovation.
MF1	Making the activity streams tool a necessary platform for the job.
PA6	Promoting information sharing.
PA8	Improving collaboration.
PA2	Management support.
Factor 2 – Organizational Support	
M1	Collecting data that give useful information about a particular situation or activity to be measured.
R1	Emphasizing financial support for technological investment.
R2	Defining a Human Resources plan to coordinate and manage the implementation process of activity streams.
M2	Collecting data that demonstrate the value and worthiness of an activity streams initiative.
PA7	Enabling integration with core enterprise applications such as CRM, ERP, and sales information systems.
Factor 3 – Management Support and Strategy	
MS2	Achieving the support of senior management for accomplishing project goals and objectives.
SP3	Aligning project goals and objectives with strategic business goals.
MS1	Promoting executive involvement to implement activity streams.
MS3	Managers to promote their own vision of using activity streams.
SP1	Defining a clear and well-planned strategy to implement activity streams.
Factor 4 – Communication Improvements	
EC2	Empowering employees by giving them a voice within the company.
EC3	Promoting better communication.
EC1	Encouraging employees to share information.

Factor 1 contains variables from two different areas: Motivational Factors and User Acceptance (MF) and Processes and Activities (PA). Variables associated with the MF area are related to the performance of activity streams in improving daily working and activities. This area also includes making relevant information and updated information available. The

second area, PA, shows processes and activities in an organization, such as problem solving, knowledge management, innovation, collaboration and management. Factor 1 should be interpreted as workplace improvements provided by the activity streams' platforms.

Factor 2 includes three groups of CSFs: Measurement (M), Resources (R) and Process and Activities (PA). The variables in this factor should be interpreted as organizational support, and include financial support (R1), human resources planning to implement an activity streams project (R2), data integration from other organizational applications (PA7) and initiative value that needs to be measured (M1 and M2).

Factor 3 should be interpreted as management support and strategy, and it is based on two areas of CSFs: Management Leadership and Support (MS) and Strategy and Purpose (SP). These variables put the activity streams project in the center of the organization's strategy (SP1), assuming that the promotion of this initiative should be a top management responsibility (MS1, MS2) and that it should be aligned with strategic business goals (SP3). Also, managers should promote their own vision of using activity streams in a top-down structure (MS3).

Factor 4 is related exclusively to communication improvements. These variables consider an activity streams initiative as a project to improve communication inside an organization. Hence, they regard social tools as instruments to promote better communication (EC3) and encourage employees to give their opinion (EC2) and share information (EC1) within the organization.

These results give information to test and validate the research hypotheses identified at the beginning of this research. It is possible to use research on the adoption of information systems, within enterprises, to identify the CSFs for implementing the activity streams mechanism. The analysis related to the ESN characteristics and objectives concluded that the study of the application of social tools for enterprises is valid. The analysis of the mean for each CSF combined with the factor analysis confirmed that it is possible to identify the CSFs for implementing the activity streams mechanism in an enterprise context. Consequently, H1 is tested and confirmed.

Regarding the factor analysis results, Factor 1 contains a set of variables related to working activities such as problem solving, knowledge management, collaboration, and management. This factor also includes variables which refer to workplace improvements such as MF5 – working faster, MF6 – working more easily and MF2 – easy and intuitive. This analysis confirmed that the activity streams mechanism helps and improves several activities in the workplace. H2 is thus tested and confirmed.

Communication improvements was one of the factors identified in factor analysis. Activity Streams projects promote communication as one of the main goals by sharing information and capacitating employees by giving them a voice within the company. The mean statistics for the CSFs also illustrates that communication is the most important factor according to survey respondents. Therefore, H3 is tested and confirmed.

The results of factor analysis do not include the IT area in the main factors identified. According to the results for Factor 3 – management support and strategy, Activity Stream projects should be a responsibility of top management. Managers should promote this initiative within their organization. Consequently, IT departments are not the owners of the implementation of activity streams; top managers should assume this role. H4 is, hence, tested but not confirmed.

6. CONCLUSIONS

The present research work aimed to analyze the CSFs for implementing activity streams mechanisms in an enterprise context. For that purpose, a survey was created and distributed through several channels. The survey also included some questions related to ESN platforms, and the main features of activity streams.

The most relevant results of this survey pertain to the validation of the CSFs for the implementation of activity streams in enterprises. The entirety of the 36 CSFs that were proposed were considered as being relevant by the majority of the participants, with an emphasis on the categories of Effective Communication (EC), Processes and Activities (PA) and Strategy and Purpose (SP). The factor analysis allowed four main areas of CSFs to emerge: workplace improvements, organizational support, management support and strategy, and improvements in communication. From the four hypotheses stated at the beginning of this research study, three were confirmed on the basis of the survey analysis. The hypotheses that were validated identified the CSFs and confirmed that the activity streams mechanism is helpful in daily activities and that it can improve communication between employees. However, the activity streams project should not be seen as an IT responsibility, as was initially probed in H4, top management should assume the project's leadership instead. Since there are no studies concerning this evaluation, these preliminary results can provide a platform to identify the problems and the needs of both employers and employees regarding this implementation. Moreover, they can be used to create a guiding framework to support an activity streams project implementation in an enterprise context.

This is an emerging area that requires more research to explore its full potential. Future research can focus on providing more evidence of the relevance of these CSFs and examine different geographical and organizational contexts. Also, an examination of how enterprises are using ESNs and activity streams could be a valuable contribution to existing research and to assist future implementations. Several enterprises have already adopted these social instruments and drawing from their experience could improve these initial results and serve as evidence of their importance.

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