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## Introduction of Enterprise Collaboration Systems: In-depth Studies Show That Laissez-faire Does Not Work

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### Abstract

*Inspired by the perceived success of the Social Media, an increasing number of companies have started to introduce social-media-like software systems (Enterprise Collaboration Systems). In order to study the issues and challenges that such introduction projects bring about, we selected a sample of companies and conducted interviews with managers, IT experts and users. The analysis of the responses shows that the experiences among the companies and among people in the same roles in these companies are very similar. All case companies used an approach that could be described as experiential, or laissez-faire, meaning that they installed the system and invited their staff to use it – without clear instructions or management controls. This led to a certain degree of insecurity and the adoption rate was lower than expected. We argue that the laissez-faire approach did not stimulate (the full potential of) project success. The findings also show that the introduction of social software brings about cultural rather than technical challenges. These cultural challenges can be anticipated and should be managed ex ante, not ad hoc.*

Keywords: Enterprise 2.0, Social Software, CSCW, Implementation, Adoption

## 1 Introduction

This article investigates the introduction of Social Software in organisations. Recent years have seen a plethora of articles about the use of Social-Media-like tools (McAfee, 2006; Bughin, 2008; IP et al., 2008; Chui et al., 2009; Richter and Riemer, 2009; Kiron et al., 2012) but there are only a few studies on the introduction of professional integrated software solutions (e.g. Miles, 2011; Chui et al., 2012; Kiron et al., 2012). Many studies refer to the

use of specific Web 2.0 tools known from private use. Examples are platforms for social profiles and personal pinboards (e.g. Facebook), chat (e.g. Skype), microblogging (e.g. Twitter, Yammer) or file sharing tools (e.g. Dropbox, Slideshare, Flickr). These platforms have in common that they provide useful features and successful collaboration patterns for many business settings (Koch, 2008). However, organisations should exercise caution when using these public platforms because of the general terms of use, which include a transfer of ownership of the content to the platform provider and insufficient protection of confidential company information.

Although we investigate Social-Media-like features, we are not discussing the presentation of a company on such platforms, an aspect of corporate communications and PR addressed by a number of publications (e.g. Mangold and Faulds, 2009; Owyang, 2009; McAfee, 2011). Instead, we discuss functionality of communication and sharing of information *within* business settings, the classical field of Computer Supported Cooperative Work (groupware). This type of software has also been referred to as Social Business Software (e.g. Miller et al., 2012) or Enterprise Social Networks (e.g. Boyd and Ellison, 2007); we refer to this type of software as Enterprise Collaboration Systems (ECS). Recent publications on ECS examine the organizational context of Enterprise 2.0 and ECS initiatives (e.g. Williams and Schubert, 2011; Kiron et al., 2012; Stocker et al., 2012; Diehl and Schubert, 2012; Diehl and Kuettner, 2012) and serve as a point of departure for our research.

We apply a qualitative research approach to amplify our understanding of ECS implementation and adoption in different industry sectors, company sizes and roles. Our research objectives are:

1. to study companies in their implementation process of an ECS solution

and more specifically

2. to identify the methods they are using to support the introduction and adoption of the software.

## **2 Research Approach and Method**

Figure 1 shows the research design of our qualitative study. We followed an in-depth case study research approach applying principles of case study research as described by Yin (2009) and Eisenhardt (1989). We organised our research in three phases: design, data collection and analysis (as shown in Figure 1).

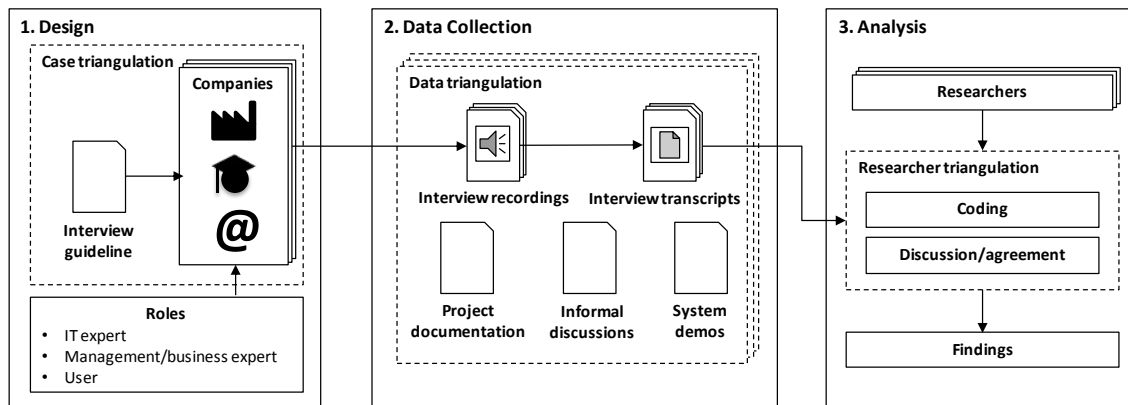


Figure 1: Phases of the research process

In the *design phase*, we identified a sample of three companies from different industries that were willing to talk to us and who had implemented the same integrated Enterprise Collaboration System in the last two years. We developed an interview guideline to guide us through a series of interviews. The interview guideline was structured following the recommendations of Porst (2007). We decided to talk to employees in three different roles (IT experts, management, users) and established a core set of questions for each participant regardless of role. Some selected questions in the second part were role-specific.

We collected additional demographic information and referred to Schubert and Williams (2011) for the definition of questions concerning project success and the benefits derived from the projects. After a series of feedback rounds the final interview guideline structure was agreed upon. It contains four sections:

1. Motivation and expectations
2. Introduction and implementation
3. Collaborative scenarios and benefits derived
4. Project outlook

In the *data collection phase*, we conducted nine interviews in person and on-site. All interviews were fully recorded and transcribed. The information about each company was enriched by complementary project documentation, informal discussions with (additional) project participants and demonstrations of the actual use of the software by the participants.

In the *analysis phase* the data was partially coded by the researchers in the software ATLAS.ti using CAQDAS techniques as suggested by Miles and Huberman (1994). An example screenshot of our coding results is shown in Figure 2. In a final intercoder meeting results were discussed and full inter-coder agreement was achieved.

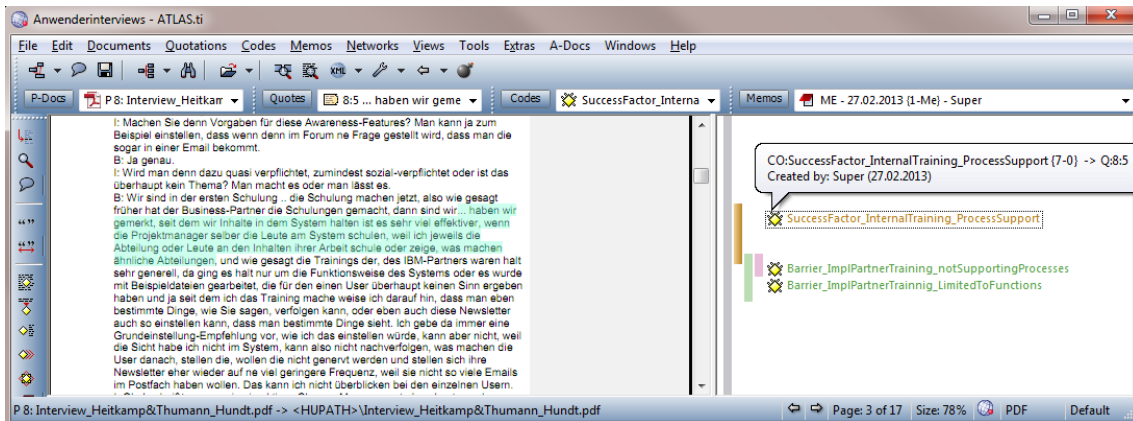


Figure 2: Screenshot of a coded interview transcript in ATLAS.ti

As this work is part of a long-term research project, we used a coding scheme for success factors developed in a prior study (Diehl and Kuettner, 2012). These success factors had been specifically identified for Enterprise 2.0 initiatives (E2.0). The classification scheme led to better inter-coder reliability and easier comparison of the findings. The list of success factors has been used to summarize our findings during data analysis and is presented in Table 3, Chapter 3.4.7 below.

### 3 Data Analysis and Findings

This chapter describes the findings from our case analysis. In the first part, we present the background and the characteristics of the cases. We then discuss similarities and differences regarding the role of the respondent and the perceptions in the early introduction phase. In the third part we discuss whether success factors for E2.0 implementation projects were observed by the project participants.

#### 3.1 Case profiles

The company profiles vary in terms of size, type and industry sector. All three have implemented the same ECS during the last two years: a professional software system that is highly integrated with their internal IT environment (IBM Connections 3.x). Characteristics of the cases are summarized in Table 1.

EDU is a small research group in a faculty of Informatics at a German University. The annual turnover refers to the additional research funding that the group has in their work with industry partners (on top of basic government funding). MANU is a manufacturer of precision-formed components in both metal and plastic. ITSERV is a large provider of IT services in the banking industry. In contrast to both MANU and ITSERV, which are engaged in business-to-business (B2B) activities, EDU's business model of providing education and conducting research is categorized as administration-to-citizen (A2C). All three organisations had prior experiences with groupware products (Lotus Notes/Domino). The names EDU,

MANU and ITSERV are derived from the corresponding industries and will be used in our analysis.

Case	Employees	Annual Turnover	Business Model	Industry	Observed roles
EDU	13	150.000 €	A2C	Education	IT experts, management, users
MANU	1800	350 Mio. €	B2B	Manufacturing	IT experts, management, users
ITSERV	2500	648 Mio. €	B2B	IT Services	IT experts, management, users

Table 1: Case demographics

### 3.2 Findings depending on ROLE

To study organizational effects during the implementation and adoption phase of ECS, we included three different participant roles: *Managers and internal business experts (MGMT)* were asked for the measures they took to control the project, their approach for introduction and for an estimate of the project success that they felt they had achieved so far. Responsible representatives from the *IT department (ITEXP)* were asked about implementation and integration efforts, security issues and outlook on future development of the system. *Users (USER)* were interviewed regarding their experiences with adoption and usage patterns. Questions that were identical for all three roles were used to contrast the perceptions between management, IT and users. The interviewed *Users* had not been part of the core project team in charge of the implementation, but solely end users.

In the findings section we use the abbreviations to label the source of a finding. Role and company are linked with an underscore to refer to a specific interview, e.g. ITSERV\_MGMT refers to the interview conducted with a *management representative* in the case study *ITSERV* (IT service provider).

#### 3.2.1 Management

The *managers* underlined the *bottom-up character* of the implementation project in all cases. They pointed out that the actual use of the platform was based on the personal motivation of the users (MANU\_MGMT). Participation was deliberate and the introduction process was not tightly managed. Statements reached from “unstructured project” (ITSERV\_MGMT) to “learning-by-doing approach” (EDU\_MGMT). Additionally, there was a lack of clear project goals (EDU\_MGMT, ITSERV\_MGMT). Managers were not concerned or worried about the technical implementation. In all cases, an implementation partner had been in charge of the actual installation of the software (ITSERV\_MGMT, MANU\_MGMT).

#### 3.2.2 IT department

The *respondents from IT* raised compliance concerns. They mentioned that rules about confidential or private information were missing (e.g. MANU\_ITEXP). Also, a lack of general rules for usage of the system was criticized: “A set of rules for the usage of the system is necessary” (ITSERV\_ITEXP). Looking ahead in the life cycle of the system,

planning of new releases has certain implications: “We planned [...] for Release 4, rescheduled the release [...] and] the implementation partner is currently trying to fix technical issues.” (ITSERV\_ITEXP) All of them were concerned with negative future implications for their work, e.g. “I see a lot of administrative tasks coming my way.” (EDU\_ITEXP)

### 3.2.3 Users

*Users* valued being able “to contribute to the implementation and adoption of the system” with their expertise (e.g. EDU\_USER), but they also called for basic rules and guidelines. After the implementation “there have been temporary uncertainties” (EDU\_USER) or “no decision has been made where to store certain information” (ITSERV\_USER). Users were missing active change management to “speed up the process” and “support a more frequent tool usage” (e.g. EDU\_USER, ITSERV\_USER). This view is congruent with the responses of managers and IT staff.

### 3.2.4 Summary of findings for “role”

The responses of the employees in the same roles were very similar in all three organisations. This suggests that the industry sector might not play an important role in the introduction of social software in companies. All cases are characterised by a *laissez-faire* approach. There was no clear management of the introduction process and participation was voluntary. All cases showed a lack of rules and guidance. Uncertainty was high. Overall, the respondents felt that the project had not been a full success yet.

## 3.3 Findings regarding the ADOPTION PHASE

An important part of the questions in the interview guideline was concerned with the *adoption phase of the ECS implementation project* (i.e. the early phase after the go-live) and the underlying user expectations. Findings across all cases indicate problems, especially the prevalence of uncertainties in different management areas. The respondents reported that a number of unresolved questions had not been appropriately addressed and solved before or while implementing the software. Our findings are in line with the challenges reported in Social Media studies (e.g. Kaplan and Haenlein, 2010; Andriole, 2010). Table 2 lists questions and uncertainties that were faced and the respective management area.

All three organisations had to tackle questions and uncertainties after the initial adoption phase. There was a general agreement that management had to play a more active role in the definition of guidelines. With “[...] top management realising this trend” (MANU\_MGMT) internal service providers for collaboration support had been put in place to identify possible solutions (EDU, MANU, ITSERV).

<b>Recurring questions and uncertainties</b>	<b>Areas of (mis)management</b>
Who is in charge? Who owns this information? (e.g. ITSERV_ITEXP, MANU_MGMT)	Lack of communication of responsibilities and ownership
Where can I find the necessary document? (e.g. EDU_MGMT, ITSERV_ITEXP, MANU_MGMT)	Missing guidelines for the storing of files (document management)
How should we manage our ideas? (e.g. MANU_ITEXP)	Innovation management
What information is hidden in my employees' inboxes? (e.g. ITSERV_MGMT, EDU_USER)	Information management
Who is working on the project right now? (e.g. MANU_ITEXP, ITSERV_ITEXP)	Coordination and awareness
Who has expertise on topic X? Who can help? (e.g. MANU_ITEXP)	Organization department
How do we engage our experts in sharing their knowledge? (e.g. MANU_MGMT, MANU_ITEXP, ITSERV_ITEXP)	Knowledge management
How can organizational boundaries be reduced? (e.g. ITSERV_MGMT, MANU_ITEXP)	Organization department

Table 2: Recurring user uncertainties and identified problem areas

### **3.4 Were known success factors observed by the case companies?**

This section contains the analysis of success factors across the cases. We used previously identified factors explained in detail in Diehl and Kuettner (2012): top management support, project team competence, interdepartmental communication and cooperation, goals and objectives, project management and training of new processes.

#### **3.4.1 Top management support**

In the two cases EDU and ITSERV the ECS “implementation was a top-level priority” for management throughout the whole project (EDU\_USER, ITSERV\_MGMT) although there had been “no defined goals” (EDU\_MGMT) or just “vague goals communicated” (ITSERV\_MGMT). MANU, on the other hand, followed a more explicit approach, which was explained to have its roots in the “traditional company culture” (MANU\_MGMT). “Formal goals were defined and a scope document was created”, as “the top management was aware of that trend [of companywide social software usage]” (MANU\_MGMT). During the implementation and adoption phase, however, “the management and top management was barely active within the system” and “top-down support was lacking” (MANU\_MGMT). “The group holding was [...] relatively uninvolved.” (MANU\_ITEXP)



### **3.4.2 Project team competence**

Project team competence was mainly established by “normal” users and internal business experts forming small project teams (e.g. ITSERV\_MGMT, EDU\_MGMT, EDU\_USER, MANU\_MGMT). “Key users were selected by the project leaders.” (e.g. MANU\_MGMT, ITSERV\_MGMT) Hence, the majority of team members “had no IT background, rather a business background” (MANU\_MGMT). ITSERV and MANU used the help of a specialized implementation partner and of third party expertise such as consultants and universities.

### **3.4.3 Interdepartmental communication and cooperation**

“Key enthusiasts/players/users were identified” (e.g. MANU\_MGMT, ITSERV\_MGMT) and from time to time “informed that [motivating] action is expected” (ITSERV\_MGMT). Internal training events were organized to motivate users and to train them in the use of the system (MANU\_MGMT). Also, companywide marketing was initiated to motivate the users to use the system: “[...] at our executive meeting intense marketing activities took place [...]. The board of executives acknowledged: We want this, we will participate [...]”.

### **3.4.4 Goals and objectives**

Again, MANU with their “traditional” culture developed “a set of guidelines that was made available” (MANU\_ITEXP) to their users. For EDU, “collaboration scenarios were developed and the proper use of the system and procedures for storing content were agreed upon” (EDU\_USER). ITSERV\_ITEXP reported that “a set of rules [...] is necessary”, but not yet implemented for ITSERV.

### **3.4.5 Project management**

Lean project teams, “inter-departmental, with affinity to Web and collaboration technologies” (e.g. ITSERV\_MGMT, MANU\_ITEXP, EDU\_MGMT) were implemented in all cases “instead of large-scale project organizations” (e.g. ITSERV\_USER).

### **3.4.6 Training of new processes**

“The [observed] procedure model for the system adoption can be referred to as a learning-by-doing approach” (e.g. EDU\_MGMT) that was guided by “informal support of key users” (e.g. MANU\_MGMT) and “internal seminars and workshops focusing on the support of daily work” (e.g. ITSERV\_MGMT, MANU\_MGMT). Surprisingly, “the involvement of implementation partners was limited to initial trainings for the demonstration of basic functionality” (e.g. MANU\_MGMT). Another common theme for the motivation to use and the demonstration of daily tool usage was the leading-by-example of employees in charge for the project (e.g. EDU\_USER, ITSERV\_MGMT, ITSERV\_USER).

### 3.4.7 Overview of the results

Table 3 has been adapted from prior work (Diehl and Kuettner, 2012) and shows an overview of the results. We attributed check marks for the success factors that were fully or partially observed. The crosses show the cases where these factors were ignored.

Success factors of ECS implementation	EDU	MANU	ITSERV
<b>Top management support</b> (Setting objectives, communicating strategy, developing an understanding of opportunities and limitations of the IT system)	✓	✗	✓
<b>Project team competence</b> (Lean project teams, users as project team, low degree of specialization)	✓	✓	✓ (partial)
<b>Interdepartmental communication and cooperation</b> (Promotion-focused, use-inspiring)	n.a.	✓ (partial)	✓ (partial)
<b>Clear goals and objectives</b> (Implementation-focused, set of rules)	✗	✗	✗
<b>Project management</b> (Lean project teams)	✓	✓	✓
<b>Training of new business processes</b> (Inspire to use, lean training or learning-by-doing)	✓ (partial)	✓ (partial)	✓ (partial)

Table 3: Observation of known success factors for the implementation of E2.0 in case companies

## 4 Discussion

In this study, we investigated the ECS implementation process by conducting three in-depth case studies. The comparison between the responses of project participants in different organisations shows surprisingly homogeneous results for roles, size and industry sector. In the following paragraphs we discuss our findings in the context of our research objectives.

Concerning the *implementation process*, we found the studied companies paid little attention to the activities in the traditional pre-implementation phase, such as requirements gathering and project planning. The lack of a defined set of requirements made it impossible for the companies to compare the ECS offerings of different vendors. For system selection, they followed recommendations given by their existing external service providers. Surprisingly, in a time of severe budget restrictions across all areas, their investment decisions were based on word-of-mouth, and driven by a few knowledgeable individuals, rather than by formal IT decision committees. The employees in charge of the ECS introduction were aiming for complementary effects (cf. Gulati, 1995) by selecting ECS offerings from their existing IT vendors and implementation partners in order to ensure technical integration with their existing systems. Across all cases, we observed this “buy-in strategy” in the selection of vendors and implementation partners, which also included acquiring “resources to meet a temporary need”, such as consultants and programmers (Lacity et al., 1996). This approach involved risk mitigation by selecting the market leader in the *Social Platform market* as observed by IDC’s competitive analysis in 2011 (Traudt, 2011).

Apart from considering the ECS's technical and functional characteristics, the companies did not conduct any formal fit analysis (Goodhue and Thompson, 1995). Notably, they did not define criteria for implementation success, nor did they specify the value they expected to derive from the introduced ECS (cf. e.g. Shang and Seddon, 2002).

This exploratory, improvised pilot project approach persisted in later stages of the implementation process. In particular, none of the cases reported an ex-post return-on-investment analysis, nor did they develop a set of key performance indicators. Moreover, their continued use of the system remained *laissez-faire*: Although the companies used employees to act as evangelists for the new system, their activities were individual, improvised and predominantly reactive in nature. None of the companies had developed a roadmap or a comprehensive project plan to manage the ongoing system usage.

Instead of conducting project planning, they pursued an *ad hoc* approach in managing organizational change. Most of their activities were focused on the early adoption phase, when the ECS had already been installed.

Not surprisingly, the studied companies did not follow a formal *method* to support the ECS introduction and adoption, with the exception of activities concerning technical aspects. These technical issues were subject to the companies' IT standards and procedures and executed accordingly. Resulting from a project structure that was predominantly technical in nature, the ECS perspective shifted in the introduction phase: Whilst companies originally pursued motives of cultural and collaborative progress, their actual implementation process did not reflect these motives. This is expressed in various aspects, such as in the end user trainings, which were carried out by the business partner or vendor, and did not adequately consider appropriate collaboration scenarios for these companies. Thus, these trainings presented functionality and technical aspects from an outside-in perspective, rather than addressing organizational pain points.

The companies themselves were unaware that they would face barriers to usage and seemed content to provide a playground for their employees, expecting a quick adoption. Only *ex post* did they realize that they were involved in a cultural change scenario, in which the technical issues did not present the actual challenges. Moreover, the companies were not engaged in a cultural dialogue and lacked awareness of the specifics of their organizational culture. In particular, there was little understanding of dimensions of culture, such as the *ideas about isolation vs. collaboration/cooperation* and *ideas about control* (Detert et al., 2000). In the resulting climate of uncertainty, in one case (ITSERV), employees approached the works council to discuss their privacy concerns. Others directed questions at their line managers, inquiring whether ECS use was mandatory or voluntary (ITSERV, MANU). In some cases, this resulted in the duplication of documentation, to ensure the information would reach its addressees.

Overall, the *laissez-faire* approach manifests in a lack of planning and objective setting, which results in uncertainty and ambiguity regarding project success. This does not apply to qualitative aspects only, but also concerns the more rigid dimensions of project management, particularly budget and schedule. As a result, we found that success measurement was often *implicit*: Whilst the experts shared a common understanding of a general level of satisfaction

they could not refer to a measurement scale or a definition of this state but described a “gut feeling”. Table 4 contains an overview of the project success criteria, as well as their definition, measurement and status across the cases.

Dimension of project success	Case findings		
	Objectives	Measurement	Status
Budget	Undefined	Explicit	Satisfactory
Schedule	Implicit	Explicit	Unsatisfactory
Quality	Undefined	Implicit	Satisfactory
Appreciation by users	Undefined	Implicit	Active users: Satisfactory User base: Unsatisfactory
Appreciation by project team	Undefined	Implicit	Satisfactory
Appreciation by stakeholders	Undefined	Implicit	Satisfactory

Table 4: Project success criteria (adapted from Westerfeld, 2003)

Overall, however, the companies are satisfied with the new possibilities that came with the new Enterprise Collaboration System. Although these benefits are not measured in terms of monetary savings, the cases report significantly improved collaboration capabilities and a positive impact on motivation. Despite initial challenges, the involved employees appreciate the cultural change they experience. Notably, their account emphasizes a new cultural awareness and a process that they themselves shape as change agents.

Apart from the functional possibilities to enable collaboration, the aspect of inspiring positive cultural change can empower employees and may represent a significant source of benefits – if the companies succeed in promoting a wider spread of use of the ECS.

A first step towards successful projects should consist of thoroughly mapping customer requirements and vendor capabilities on several levels, from the strategic level to sub-processes and activities. Figure 3 shows an overview of the match between user requirements and software capabilities (the customer versus the vendor view) of an ECS.

Whilst the functional mapping seems to be pretty straightforward and is supported sufficiently by implementation partners and vendors, the implementation of collaboration scenarios turned out to be a challenging task in all observed projects. The mapping of daily work practices (sub-processes) to capabilities explicitly offered by product components (e.g. wikis, profiles, blogs) and beyond had to be supported and elaborated by internal business professionals to stimulate company-wide adoption on a strategic process level, by working out most valuable collaboration scenarios within their business context. This phenomenon has been referred to as appropriation within the context of CSCW (Dourish, 2003; Pipek, 2005).

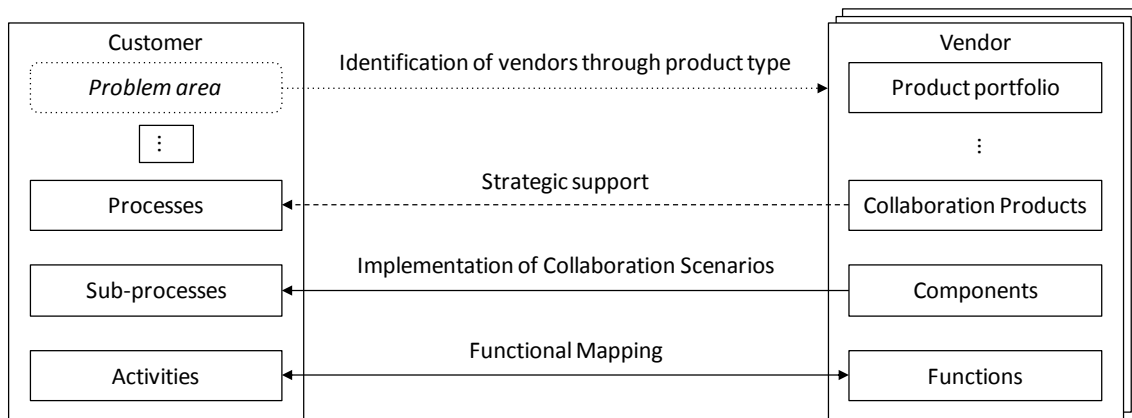


Figure 3: Matching requirements (customer view) with software capabilities (vendor view) of ECS

Another field of action lies in the cultural challenges as possible barriers to adoption. In order to successfully introduce Enterprise Collaboration Systems, companies need to develop cultural awareness and design strategies to overcome their individual challenges. The scope of these activities reaches beyond end user training and requires providing clarity on roles and responsibilities as well as developing the incentive structure to motivate knowledge sharing among a large number of employees.

In summary, our findings indicate:

- The adoption of Enterprise Collaboration Systems faces usage barriers, most prominently in the form of cultural challenges, which are less tangible and more intricate to deal with than the technical aspects. The nature of these challenges implies that ECS initiatives should be driven by executives in charge of strategy, not solely IT departments.
- Following traditional recipes for large-scale IT implementation poses problems of assuming an overly technical focus and not adequately considering the cultural dimensions of ECS introductions.
- A *laissez-faire* approach hinders project success in several ways: Firstly, missing clarity of requirements and objectives prevents identification of project success or failure. And secondly, cultural challenges can be anticipated and should be managed *ex ante*, not *ad hoc*.
- Introducing an ECS requires a *strategy*, including a definition of project success, expected benefits, as well as describing use cases and requirements and outlining ways to manage cultural change and usage barriers.

- Professional project management is required to avoid these challenges. ECS vendors should assist customers with implementation methods based on expertise and best practices.

## **5 Conclusions and Limitations**

The predisposition of a company to seamlessly adopt social software is dependent on the prevailing company culture. The more open and “sharing-oriented” a culture is, the more welcoming are staff members of a technology for sharing information, thoughts and ideas. From what we interpreted from the interviews the question is not “does social software work in certain industries?” but it is “does it work in certain company cultures?”

But even when the culture is not ready at the start, the introduction process and the adoption by a few first movers already induces a change in the company culture. The respondents clearly stated that there is no way back from the introduction of an Enterprise Collaboration System. Once in place people do not want to work without them anymore.

Further dilemmas that we identified in the interviews but could not discuss in our article are:

- Confidential vs. public information
- Young generation vs. old generation
- Company affiliation time (senior employees)
- Independence of age: “it’s more about thought patterns, attitudes to new technology and change, as well as power structures”

At the end of the day the perceived success of an ECS depends on the people and their attitudes towards the new software system and their willingness to embrace it or their resistance to change. In some companies it might just be a question of time – with the new generation the attitude towards social communication will change. This process needs time.

Our study faces the typical limitations of small qualitative samples. In particular, our findings do not support statistical generalization. Although we compare three in-depth case studies to achieve a comprehensive understanding of the cases and discuss them in context of our results from prior studies (16 cases), our findings would benefit from a broader study. Also further research should try to integrate existing knowledge from neighbouring disciplines and construct guidelines or frameworks to guide future work.

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