

“DON’T PRESSURE ME!” EXPLORING THE ANATOMY OF VOLUNTARINESS IN THE ORGANIZATIONAL ADOPTION OF NETWORK TECHNOLOGIES

Completed Research Paper

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Abstract

The design and management of the roll-out of new IT in an organization comprises several managerial decisions, one of which is whether IT adoption should be mandatory. Voluntariness to adopt has mainly been researched as a variable in explaining individual IT acceptance, however with contradicting results. By drawing on a case study of a financial service company, we aim to expand our understanding of the notion of voluntariness. We distinguish between management’s claim that adoption is voluntary (espoused voluntariness) and the perception of this claim at the employee (perceived voluntariness) and team level. Moreover we elaborate on the changing role of voluntariness in the different stages of the roll-out process of a particular network technology. This allows us to observe a dilemma presented in the case: While voluntariness initial seems to be prerequisite for implementation and technology roll-out, it may act as an inhibitor to full diffusion in later stages.

Keywords: IT Adoption, Voluntariness, Real-Time Collaboration Technologies, Network Technologies, IT Roll-out Process

Introduction

When introducing a new network technology, such as social software or communication infrastructures into an existing organizational environment, management is faced with the challenges of designing and managing the roll-out and adoption process in an appropriate way (e.g. Klein et al. 2010). In the case that the introduction of the new network technology 1) aims to facilitate operational, companywide use and 2) requires adoption by entire groups in order to unfold its full potential (e.g. Mark and Poltrock 2004), making adoption and use mandatory appears to be a rational choice (e.g. Wang and Butler 2007). However, under certain circumstances prescribing adoption as mandatory might either not be possible or not be advisable. In this paper, we present a case in which management opted for voluntariness in the organizational roll-out of a network technology, as it decided to leave adoption and use at the discretion of the individual. We will analyze and reflect on the effects of this decision for the diffusion and uptake of the technology on the individual and organization level.¹

Our case study is set in the regulatory environment of Germany, where new technologies that impact on user privacy need active employee buy-in and agreement from the company's workers' council. Social software platforms or communication infrastructures, such as Real Time Collaboration (RTC) technologies, raise various privacy issues (e.g. Cameron and Webster 2005). This is due to the fact that a main purpose of these technologies is to capture and distribute personal user information of various kinds within the network of users. For example, a main affordance of RTC technology is to allow users to observe the presence of others, as conveyed by a status signal (e.g. Riemer and Fröbber 2007). Thus, such technologies can potentially be used for user surveillance, monitoring and control (e.g. Sewell 1998) and are thus subject to work regulation in Germany. Hence, management who wants to implement such a technology faces a potential trade-off between the pursuit of operational goals (derived from the diffusion of such a technology) and the necessary considerations for employee concerns, which may render a necessity to make adoption and use voluntary.

The aim of this paper is twofold. First, we present a rich, unique case study of a network technology roll-out in order to expose the complex nature of voluntariness as a construct in the organizational decision-making, roll-out, and adoption process of a communication infrastructure. Second, we aim to broaden the existing IT adoption literature with regards to the dynamic role and multi-faceted nature of voluntariness in the process of IT roll-out, diffusion and adoption. In doing so, we focus on network technologies, which pose interesting challenges with regards to their unique affordances and characteristics.

We draw on a rich case study of a German financial service company in order to expose the complexity of voluntariness in IT adoption. The management team of MUFIN decided to roll out the RTC technology IBM Lotus® Sametime® to their employee base. Individual adoption was made voluntary in the face of the above requirements and due to the specific organizational culture of MUFIN. We have conducted interviews with different organizational stakeholders (multi-stakeholder analysis), such as management, workers' council and employees, and at different points in time of the roll-out and adoption process (comparative-static analysis). Based on the interviews with the employees after the roll-out of Sametime®, we were able to study employees' perception of and responses to the concept of voluntariness on an individual and team level. Furthermore, interviews with the management and workers' council prior and after the roll-out allowed us to analyze why management decided on voluntary use in this specific organizational and regulatory environment and what implications for the organizational adoption followed from this initial decision. As a result we were able to observe multiple and changing facets of voluntariness across a dynamic, multi-stakeholder context of negotiation, roll-out, diffusion, adoption and appropriation. With our study, we aim to contribute to a better understanding of the complex nature of the organizational adoption of a network technology with a focus on the nature and role of voluntariness from a managerial perspective, "espoused voluntariness", and the individuals' perspective, "perceived voluntariness", in an organizational and group environment.

¹ Please note that by voluntariness we always denote the freedom of an individual to adopt and use a technology against the background of an organizational context, including management's decision to explicitly grant this freedom. We do not engage with the philosophical question concerning individual free will or human agency, nor do we mean to elaborate on the phenomenon of voluntarism or voluntary participation, as discussed in open source initiatives.

Traditional IT adoption literature has brought about several well-established models and theories, like the technology acceptance model (TAM) or the theory of reasoned action (TRA), all of which assume voluntariness as an underlying theoretical assumption (Rawstorne, Jayasuriya and Caputti 1998) and thus have not researched the notion and role of voluntariness as such. Besides this, some studies have explicitly studied voluntary or mandatory use as a factor in IT adoption (e.g. Agarwal and Prasad 1997; Brown et al. 2002). But these studies have mainly investigated voluntariness as one possible factor for explaining individual adoption and have yielded mixed and contradictory results regarding the particular role of voluntariness. While some studies have found a negative impact (e.g. Agarwal and Prasad 1997), others have reported a positive impact (e.g. Van Slyke et al. 2010). In contrast to these studies, which research a possible direct or indirect influence (e.g. Venkatesh et al. 2003) of voluntariness on the individual adoption decision, our research looks at voluntariness in an organizational environment in which management aims to maintain employees' freedom of choice of communication media. Therefore we distinguish between the rationale of management to grant freedom of choice and employees' perception and responses. Moreover, we extend the analysis of voluntariness beyond initial acceptance decisions in order to understand if and how espoused voluntariness is changing over time.

Our paper proceeds as follows. We begin by providing a brief literature review on the role of voluntariness in IT adoption research. We continue by elaborating on our research design. Next, we will present our case by describing the specifics of technology artifact (RTC), the case company and the project of rolling out Sametime® at the case company. We continue with our analysis of the role of voluntariness in the presented case. Subsequently, we will discuss our findings by presenting a conceptualization of voluntariness in our case and by exposing a set of propositions as a first step in deriving a more theoretical understanding of voluntariness in IT adoption. The last section concludes the paper.

Voluntariness in IT adoption

In this section we will expose how voluntariness as a construct has been conceived in existing IT adoption research. In doing so, we will first discuss typical definitions, before we present different strands of capturing the nature and role of voluntariness in existing studies.

Voluntariness definitions

For quite some time, voluntariness has been either studied or at least acknowledged as a factor in IT adoption research. It is typically treated as an individual-level construct, i.e. as a property or aspect of the individual adoption decision, and typically operationalized as a perception construct. Accordingly, voluntariness of use has been defined as “the degree to which use of the innovation is perceived as being voluntary, or of free will” (Moore and Benbasat 1991, 195). Seeing voluntariness as a perception construct implies that even under the same circumstances individuals might perceive different degrees of voluntariness. Hence, “it is often not actual voluntariness which will influence behaviour, but rather the *perception of voluntariness*” (Moore and Benbasat 1991, 196), i.e. “the extent to which potential adopters perceive the adoption decision to be nonmandated” (Agarwal, Prasad 1997, 564). Consequently, the opposite of voluntary adoption is mandatory adoption, where “adoption occurs when the end user is forced by the organization, through reward inducements or threats of punishment or a combination of both, to utilise the IS in a way that replaces at least one previous work practice.” (Rawstorne, Jayasuriya and Caputti 1998, 326)

Often however, the degrees of voluntariness experienced by individuals are a direct result of the social group context in which the adoption takes place (Compeau, Meister and Higgins 2007). As such, perceived voluntariness is related to constructs such as social influence, normative (peer) pressure or institutional pressures (e.g. Karahanna, Straub and Chervany 1999). Hence, while the adoption and use of an IS innovation might be outright mandated by an organization, the different shades of perceived voluntariness are often a result of experienced pressure exerted by the immediate social environment. As a consequence, some authors explicitly differentiate between two distinct constructs reflecting the two aspects of pressure: (1) (perceived) voluntariness, which is described as institutional (‘top-down’) pressure and (2) subjective norm, which is described as “an individual’s beliefs regarding whether important referent others believe the focal behavior should be performed.” (Van Slyke et al. 2010, 399) In our research we follow

Compeau, Meister and Higgins' (2007) conceptualization of perceived voluntariness as any form of pressure that exerts influence on the individual such that they feel their voluntary decision to adopt the innovation is compromised. With this broad conceptualization we are able to discuss various sources of pressure (e.g. institutional or peer pressure) that we identified in our empirical study.

The role of voluntariness in the IT adoption literature

So far, only few studies in Information Systems have explicitly studied voluntariness as a factor in IT adoption, but many studies assume voluntariness from the onset. Different strands of research stand out:

1. *Voluntariness as an assumption:* In traditional IT adoption literature, voluntariness is often explicitly or implicitly assumed, but not articulated. For example, models such as the technology acceptance model (TAM) (Davis 1989; Davis et al. 1989) or the theory of reasoned action (TRA) (Ajzen and Fishbein 1980) are based on the assumption of voluntariness in terms of users' choice to adopt or not. Rawstorne, Jayasuriy and Caputti (1998) state that "an underlying assumption in the use of the aforementioned models is that users of IS have a choice about the extent to which they use the technology. Such an assumption has been appropriate in organisations that endorse a policy of voluntary IS use" (p. 325). In turn this means that models such as "TAM may not be adequate to explain the variation in the acceptance of systems where the users have different perceptions of the extent to which use is under their control." (Lowry, 2002 697) Hence, there is a need for more research into the role of voluntariness (Rawstorne, Jayasuriy and Caputti 1998).
2. *Negative impact of voluntariness:* Some studies have explicitly investigated voluntariness as a factor influencing motivations or intentions of IT adoption. These studies have typically found a negative impact of perceived voluntariness on individual adoption intentions (e.g. Agarwal and Prasad 1997), in that people who have choice are less likely to adopt the innovation. Agarwal and Prasad (1997) suggest that "mandating the use of a system can increase initial system utilization" (p. 575).
3. *Positive impact of voluntariness:* Only very recently, some studies have revisited the construct. Interestingly, these authors find the opposite effect, arguing that users might resist adoption, when they are pressured to use a new technology, which suggests a positive influence of voluntariness on adoption decisions (e.g. Van Slyke et al. 2010).
4. *Indirect impact of voluntariness:* Finally, voluntariness has been found to only indirectly impact on individual adoption. The Unified Theory of Acceptance and Use of Technology (UTAUT), formulated by Venkatesh et al. (2003), features voluntariness only as a moderating variable that does not exert any direct influence on user acceptance intentions. Venkatesh et al. (2003) explain that "none of the social influences constructs are significant in voluntary contexts; however, each becomes significant when use is mandated" (p. 451-452). Following Venkatesh and Davis (2000), they state that "such effects could be attributed to compliance in mandatory contexts that causes social influences to have a direct effect on intention" (Venkatesh et al. 2003, 452). Hence, it was found that peer pressure behavior was only present in mandatory use context, but not when use was voluntary.

Voluntariness in the wider adoption context

Studies focusing on the individual level either treat voluntariness as an assumption or analyze a possible impact on the individual adoption decision. Thus, they have only limited value in understanding organizational conflicts resulting from voluntariness, when adoption decisions are made on an organizational or group level (e.g. Gallivan 2001). However, as the individual's adoption decision (secondary adoption) in general is based on management's adoption decision (primary adoption) and embedded in an organizational and team context (Gallivan 2001), it is important to also analyze the concept of voluntariness in these contexts. While there are some studies that have investigated organizational and group adoption processes where secondary adoption was based on voluntariness (e.g. Orlikowski 1992), these studies have rarely discussed the concept of voluntariness in detail. Furthermore, past studies have found that the most common pattern within organizations is a mandated adoption at the user level (e.g. Gallivan 2001; Wang and Butler 2007).

Hence, we conclude that while the literature confirms the importance of voluntariness, the understanding of the role and influence of voluntariness in an organizational context is quite limited. This may reflect different conceptualizations, research designs, organizational settings and indeed types of technology under consideration. In response, we suggest to study voluntariness related to a particular technology (in-use), in a specific organizational setting, studied across different levels (management – group – individual) and over time, in order to understand the dynamics of espoused and perceived voluntariness. While we are not aiming for empirical generalization, we propose that our conceptualization and the included dimensions are a good basis for theory development.

Study Overview

In this section we will introduce our research background and methods as well as our approach for collecting and analyzing data.

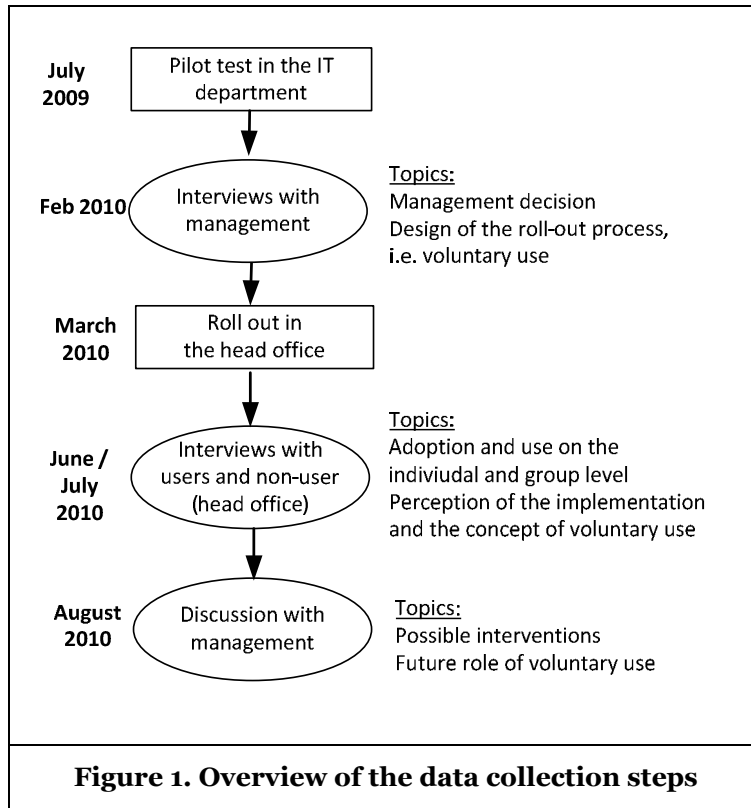
Research background and methods

The research presented in this paper is part of a larger study on the roll-out, adoption and use of the RTC technology IBM Lotus® Sametime® at a large financial service company. The aims of this larger study are 1) to investigate processes of adoption and use on the individual and group level and 2) to investigate aspects of the organizational design and management of the roll-out of Sametime®. To address these aims and to be able to investigate and understand the individuals' interpretations of the underlying technology and the roll-out process, we have chosen to conduct an in-depth *case study* (e.g. Walsham 1995). The selection of this particular case has been motivated by the opportunity to gain access and the interesting and quite unique nature of the case. Having had a history of research cooperation with the case company, we welcomed the opportunity to attend and analyze the organizational roll-out of Sametime® from the managerial design to the actual adoption in an organizational environment with a very strong employee-focused culture. The results captured in this paper firstly emerged as a by-product of the initial data collection in the case. As it soon became clear during first meetings with the management that voluntariness was an important aspect of the design and management of the IT roll-out project, we included it in our subsequent data collection. Further interviews with the management before and after the roll-out as well as interviews with users and non-users of Sametime® after the roll-out of Sametime® confirmed our first impression that voluntariness played indeed an important role during the different stages of the roll-out process.

Data collection and analysis

We have conducted interviews with different organizational stakeholders, in particular with the management team, members of the workers' council and a number of employees (multi-stakeholder analysis), and at different points in time of the roll-out process (comparative-static analysis) (see Figure 1).

In *February 2010*, prior to the initial roll-out, we conducted extensive interviews with the managers responsible for the roll-out of Sametime®. Driving questions in these interviews were the main rationales for implementing Sametime®, the organizational design of Sametime®, and management expectations concerning the later use of Sametime®. To gain a deeper understanding of the design of the roll-out process in general and of aspects of voluntariness in detail, we subsequently interviewed representatives of the workers' council, the HR department, the IT compliance and data protection office, and the line management. Subsequent to the interviews, we analyzed our written notes that we took during the various interviews with the management and the representatives of the different involvement parties. As a result we were able to describe why and how management decided on the design of the roll-out process that included aspects of voluntariness. As Walsham (2006) points out "interviews should be supplemented by other forms of filed data in an interpretive study" (p. 323). Thus, we have drawn on publicly available information describing the company and the technology focused in our research. Furthermore, we had access to some of the employee training materials, such as chat etiquette, functionality, and user guides that are placed at the employee's disposal on the Intranet. Taken together, the analysis of the management interviews and the different forms of filed data allowed us to get a well-rounded impression of the organizational background, the relevant technology, and the design of the roll-out process.



In *June and July 2010*, subsequent to the roll-out of Sametime® in the head office (starting in March 2010), we conducted semi-structured interviews with 13 employees (belonging to 10 different teams) of one operating department (see Table 1) concerning their initial adoption of Sametime®. Key questions of these interviews were adoption and actual use of Sametime® on the individual and team level and perception of the implementation process of Sametime® and the concept of voluntariness. We tape-recorded these interviews, transcribed and coded them afterwards. Resulting from this, we were able to identify and describe varying patterns of individual-level and group-level adoption that had been influenced differently by the concept of voluntariness.

Total in operating department		182
Total selected for interviews		13
Gender	Female	6
	Male	7
Job type	Team leader	1
	Deputy team leader	4
	Case worker	8
Sametime® user type	User	12
	Non-user	1

After the analysis of the interviews with the employees, we presented preliminary results to the responsible IT managers in *August 2010* in order to discuss possible implications for future stages in the roll-out of Sametime®, such as the future role of voluntariness and possible management interventions. Similar to

the first interviews with the management team, we did not tape-record this discussion because we had the impression that this might hinder an open-minded discussion about the roll-out process of Sametime®. Thus, our analysis was based on the written notes we took during the discussion and compared afterwards. As a result of the analysis, we were able to identify different scenarios for the role of voluntary use in the future organizational adoption and use of Sametime®.

The Case: Roll-out of RTC at a financial service company

As we conceptualize voluntariness as a construct that is contingent on the organizational environment as well as the technology, we will now first introduce the technology and the case company itself. Furthermore, we will give a short overview of the general structure of the roll-out process.

The technology: Real Time Collaboration (RTC)

According to Riemer and Fröbeler (2007), RTC systems like IBM Lotus® Sametime® consist of communication technologies and various collaborative applications and comprise four building blocks (see Table 2). Although it is possible to describe the specific components or features of RTC technologies, such as text chat, presence signaling or application sharing, the technology itself presents as a flexible platform that supports diverse modes of use (e.g. Riemer, Fröbeler and Klein 2007). Due to their openness, such platforms are necessarily subject to experimentation, interpretation and appropriation processes by their users. Therefore we are looking at RTC in this paper as a platform technology or infrastructure that provides a rich set of affordances (e.g. Gibson 1979; Norman 1988). As affordances arise and present to users contextually, this view differs from the orthodox understanding of technology as artifacts with a predefined set of features and application purpose in a clearly defined task environment.

As a network technology, the benefit of RTC is further depending on group adoption (e.g. Mark and Poltrock 2004; Sanderson 1992), since effective interaction via RTC on the group level requires adoption by all group members. Moreover, the presence feature of RTC can be perceived as an obvious instrument for control and surveillance (Sewell 1998). Because of this, this technology is subject to work regulation in Germany. Therefore, management who wants to implement a new RTC system needs to consider possible employee concerns and has to find an agreement with the company's workers' council on the actual design of the roll-out process. Taken together, these characteristics pose specific management challenges with regards to the roll-out and diffusion process of RTC systems (Klein et al. 2010).

<u>Building Blocks</u>	<u>RTC systems in general</u>	<u>Lotus® Sametime®</u>
Unified Communication	Integration of various information and communication channels, e.g. IP telephony and instant messaging.	Users can communicate by using various communication channels, e.g. chat, VoIP and video telephony.
Presence signaling	Status information can give information about the availability of the user and his/her media and communication devices.	Presence information is available for all users who are signed-in on the system.
eCollaboration portfolio	RTC systems can comprise features of groupware applications, e.g. team calendars, document folders, or application sharing.	Sametime® includes multiple collaboration features, such as group chat, application sharing or document sharing.
Contextualization	RTC systems can be integrated within the context of the user, e.g. with organizational processes and business applications.	There are multiple options to integrate Sametime® into organizational processes.

The case company: MUFIN

MUFIN, as a financial services company, is operating in a tightly regulated, yet highly competitive market. Its services can be characterized as information products and services. The *head office* comprises a set of departments, such as the IT department and several operating departments. The latter are subdivided into several divisions, each of which consist of approximately 15 small teams of 8 to 12 employees. These teams function as the back office providing day-to-day support for the decentralized *sales organizations*, which are spread over the entire country.

MUFIN is positioned as a service and customer-oriented company and presents itself as an innovative organization, in which IT is regarded as a core competence and information systems are ubiquitous throughout the company. Furthermore, MUFIN has a strong and explicit organizational culture and a long tradition as an employee-focused company. It is regarded as a family-friendly employer and has supported telework (i.e. home-office work) for many years. Although there are at times certain structural frictions and conflicts between the head office and the sales agents in the field, the management of MUFIN emphasizes and pursues the vision of an integrated services unit. Corresponding to the organizational culture, its management enacts a participatory style and recognizes its responsibility towards the workforce. Management does not only regularly involve the workers' council in decision-making, but tries to achieve consensus with the council prior to organizational changes. The workers' council is thus regarded an influential and important stakeholder in any innovation and change process.

The project: Roll-out of IBM Sametime® at MUFIN

In 2009, after a successful pilot test in the IT department, MUFIN decided to roll out Sametime® to the company. The purpose and intended effects were to increase the visibility of individuals for their team and peer group and to provide chat as an additional medium for the communication with 1) other team members, 2) other employees within the head office, 3) sales agents and 4) customers. However, given the relationship between management and the workforce, the roll-out of RTC was posing numerous challenges that needed to be addressed at an early stage. The intended effects of increasing the visibility and providing chat coincided with extended opportunities for monitoring and surveillance (Sewell 1998) that contradict the company's culture. Thus the management in agreement with the workers' council opted for a stepwise approach. Starting in March 2010, Sametime® was rolled-out to the employees of the head office for a pilot phase. During this first phase, Sametime® was provided to everyone; however, its use was made voluntary and management committed itself not to use Sametime® for monitoring or surveillance purposes.

Case analysis and findings

We will now present the perceived role and impact of voluntariness in the case along the different stages of the roll-out process (design, roll-out, adoption and appropriation) including the affected stakeholders (management, workers' council, employees and team leader). Furthermore, we will distinguish between individual, team and organizational adoption and appropriation of Sametime®.

Espoused voluntariness: Initial management decision on voluntary use and design of the roll-out process

MUFIN's management, in particular its IT management team, views the company as an innovative business that explores new technologies and adopts whatever technology can help to improve business operations. Consequently, Sametime® is seen as an enabler for organizational development, well in line with the strategy of becoming an innovative service company. MUFIN began the roll-out process in July 2009 with a pilot test in the IT department, which allowed the IT department to test Sametime® in order to observe its uptake and employees' responses and to prepare the wider roll-out. In total, the decision to finally roll-out Sametime® was affected by two main aspects: 1) the experiences of the successful pilot test, and 2) IT management's visions for the role of Sametime® for the wider MUFIN organization. Expected benefits ranged from basic productivity gains, to facilitating a vision of an integrated services organization, in which knowledge sharing in business processes would be enabled by RTC-based interactions

between sales organizations and head offices. Henceforth, the ultimate aim of introducing Sametime® was a companywide roll-out, where all employees would use Sametime® actively.

Whereas the pilot test was relatively easy to handle for the IT management, deciding on the design for the companywide roll-out was much more complex and comprised various managerial challenges. One important question was whether Sametime® should be rolled-out on a *voluntary or mandatory basis*. With regard to our case, it turned out that IT management was not in a position to make this decision freely. In fact, due to privacy implications, the roll-out design by law required the involvement of the workers' council, the HR department and the data protection office. Amongst other things, the presence signaling feature of Sametime® was perceived as an instrument suitable for employee surveillance and control (Sewell 1998), as it facilitates awareness of who is logged into their computers and when. Hence, such technology-induced awareness of people's presence is in potential breach of employees' privacy (Cameron and Webster 2005). Consequently, the workers' council, on behalf of MUFIN's employees, expressed their concern regarding privacy implications. Thus, IT management needed to devise a process that was in line with the employee-oriented organizational culture and requirements of the workers' council as the agreement of the workers' council was an essential pre-condition for the roll-out. Furthermore, management wanted to design a process that was in line with past experiences concerning the adoption of new processes and new IT. Earlier cases at MUFIN had shown that gentle forms of "peer pressure" and mutual help at the team level are often more effective than command-and-control structures. Therefore, IT management anticipated to see some form of team-based self-organization and adjustment in the adoption of Sametime®.

Eventually, IT management and the workers' council reached an agreement on the design of the roll-out, which comprised the following aspects: 1) initially, access to Sametime® would be provided for everyone within the head office without specific scenarios outlining particular forms of usage (open infrastructure), 2) the use of Sametime® would be *voluntary* and 3) management committed itself not to use Sametime® as a monitoring system. Although management had a more comprehensive vision of a companywide and operational use of Sametime®, deciding on a step-wise approach (head office first, sales organizations later) and voluntary use (at least in the beginning) was the only way to assure the acceptance of the workers' council to agree to the initial roll-out. Thus, voluntariness acted as an enabler to the organizational roll-out of Sametime in the first place. Furthermore, by introducing Sametime® as an open infrastructure for voluntary use, management aimed at giving employees the time and space to experiment and to become familiar with the new network technology. Management hoped that this would allow employees to identify productive ways of use embedded in the organizational setting. It was agreed that, after the first year of voluntary Sametime® use, IT management and workers' council were to renegotiate about the subsequent steps of the roll-out process. At the time of writing however, there are no concrete plans for how to design the second phase of the roll-out process to the sales organizations.

In essence we see that management's use of voluntariness is primarily symbolic (we suggest calling this "espoused voluntariness") but clearly reflects the contingencies of the specific technology and the process of organizational learning. The symbolic role of voluntariness can be divided into four facets:

1. It is contractual: management honors its legal and contractual obligations vis-à-vis the employees and specifically workers' council;
2. It is psychological: management signals respect of the employees' freedom of choice;
3. It is pedagogical: management acknowledges (or assumes) that adoption and appropriation of a communication technology happens best under conditions of voluntariness;
4. It is contingent: voluntariness has been set as rule for the first year trial. A stronger commitment or mandatory use requires a better understanding of the organizational impact of the technology.

Perceived voluntariness: Adoption decisions at the individual level

As described before, management had expected that voluntariness would allow employees to experiment independently with the new technology and thus to become familiar with it. While a majority of the interviewed employees had started to use Sametime® occasionally or on a regular basis after the first few months, some employees had decided not to use Sametime® at all. Not unexpected, these non-users reported some concerns regarding privacy. More importantly however, more people were concerned about

disruptions of their flow of work from the Sametime® instant messaging component rather than about privacy. However, as stated by the interviewees, the fact that there was only little concern regarding privacy can again be explained by the unique organizational culture of MUFIN. This culture is based on reciprocal trust: the company trusts its employees and the employees trust the company.

As intended by management and the workers' council, most of our interviewees perceived the use of Sametime® as voluntary and acknowledged that they could decide whether or not to use Sametime®. Furthermore, interviewees had welcomed the principle of voluntariness as it allowed them to test the new technology and to develop their own practices without any pressure or constraints. Upon asked if he had experienced voluntariness to be helpful for adopting the new technology, one user stated:²

“Yes definitely. I mean, if you have a new tool ... I like to play with it and to find out what can be done with it and then ... it really works well. I am already using it on a regular basis.”

However, some interviewees have experienced limitations to the principle of voluntariness. These limitations resulted from the fact that the daily work of the individual employee is embedded in a stable team environment. Some of the teams quickly developed their own practices of using Sametime® as a tool for signaling availability to their team members and simple messaging. However, such team-level practices require commitment of all team members in order to work well. We will call this phenomenon “positive group externalities”, i.e. it is a distinct instance of network externalities as the positive externalities depend on all members of the group to use a particular technology. Thus teams faced the challenge of how to achieve group-wide adoption and a commitment to use Sametime® for team communication in the face of individual decisions to abstain. Because of this, voluntariness represented an implementation challenge for the team leaders and other team members. At the same time, voluntariness as experienced and perceived by the individuals was bounded by these constraints and the interdependent nature of group work and group communications. The perceived constraints to voluntariness can be divided into three facets:

1. **Social expectations:** Individuals are aware of the expectations of team members and team leaders to adopt the technology for the sake of team-wide practices.
2. **Utility expectations:** Individuals realize that team-wide practices enabled by the network technology will only manifest if everyone adopts.
3. **Management expectations:** Individuals are aware of the underlying expectation of management that the new technology will be used given that it has made the effort to roll out the technology.

Facing the challenge of voluntariness: Coping strategies at the team level

In the face of voluntariness, team leaders had to find ways to deal with the difficulties to initiate social team dynamics towards adoption. In particular, they had to figure out how to communicate and decide with their team members on an effective team use against the backdrop of a perceived constraint of voluntariness. As this would have required a commitment of all team members, teams had to deal with the conflict between the interests of the individual employee (individual freedom to abstain from use) on the one hand and the interest of the team as a whole (commitment of all team members to use Sametime®) on the other hand.

Our interviews revealed that there were different ways of how team leaders and the teams dealt with this conflict (see Figure 2):

1. **Joint Agreement on Sametime® use:** In some teams, team leader and team members discussed and jointly agreed on the use of Sametime®. In these teams, the aspect of voluntary, individual use has been replaced by a joint agreement to commit to the use of Sametime®, at least with regards to the within-team communication.

“We use it in the team, because we decided on it jointly.”

2. **Peer pressure:** In some of the teams that did not negotiate a joint agreement the use of Sametime® turned out to be self-regulated by a form of peer pressure. While team leaders in these teams re-

² All quotes have been translated into English.

ported that no one was made to use Sametime®, the leaders themselves had adopted Sametime® to inform their team about relevant information. As a result, some team members decided to use Sametime® at least passively to be able to receive this information.

“You don’t have to use it, but then you are kind of out of everything. You place yourself a little bit outside of the group, I think.”

“... well, due to the number of colleagues that use Sametime®, well, I think that I should join too. Just to not fall behind.”

“I have told the one employee who doesn’t use Sametime® that he might end up in a dilemma, because we will not, ... because he’ll be cut off. His answer was I should send e-mails instead. But I replied that he can sign up for Sametime®.”

3. *Compliance with voluntariness:* Spurred by the workers’ council requirement to keep adoption voluntary, some team leaders reported that they talked with their team members about Sametime®, but stressed voluntariness, while other team leaders did not even dare to talk to their team members about Sametime® in the face of the management’s directive.

“We have talked about it and our team leader stated clearly that the use of Sametime® is voluntary and that no one has to sign up.”

“... because there is voluntariness. So we cannot say as a team: Please everyone use it! Although this would be nice, but we handle it like this: absolute voluntariness. We would never say: You have to do this.”

As a result, these teams normally comprised users and non-users, which meant Sametime® was not available for team communication. Here, voluntariness acted as an inhibitor to full diffusion. Interestingly, those users and team leaders who were aware of Sametime®’s potential for full-scale team communication wished for more specific rules and commitment to Sametime®, at least with regards to the team level, if not for the entire company.

“Well, I would wish for a commitment to use so that it would be possible to use the presence information of Sametime®. If legally possible I would wish for a companywide, mandatory use of Sametime®. It should be like this: everyone is signed up for Sametime® automatically and everyone can change his or her presence information independently. This would be alright for me.”

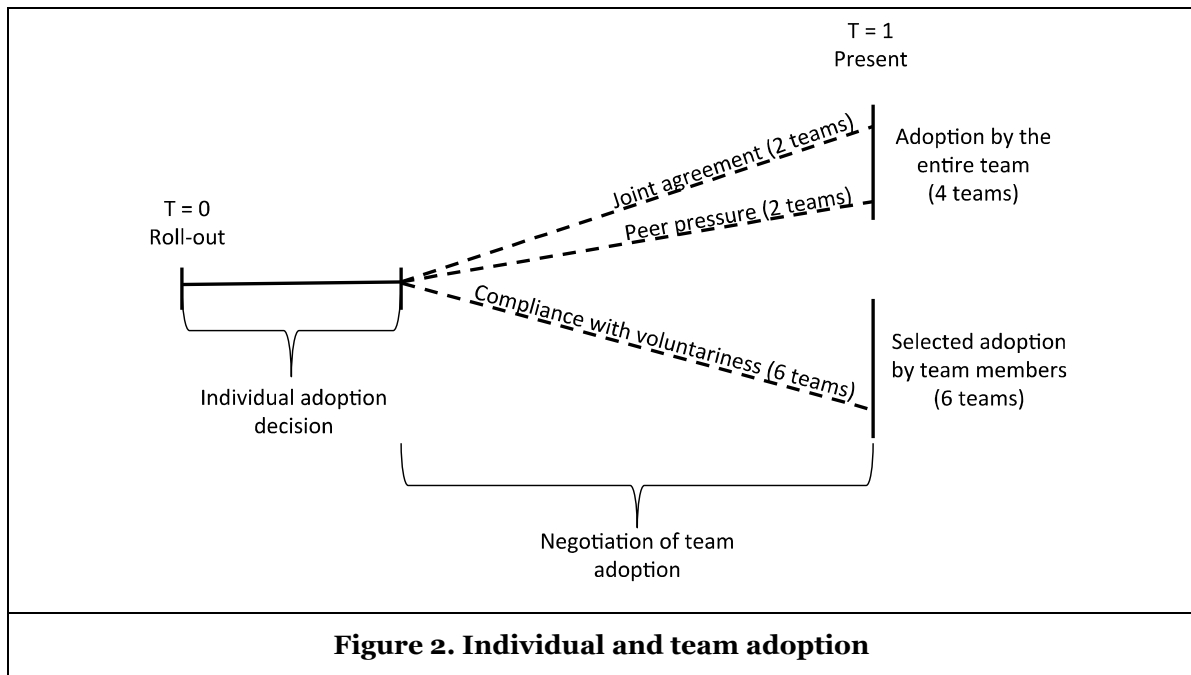


Figure 2. Individual and team adoption

Our interviewees reported one further way of dealing with the achievement of team adoption, which they had not experienced themselves but heard from colleagues from other teams or departments.

4. *Ignoring the principle of voluntariness*: A few team leaders ignored the principle of voluntariness and required their team members to use Sametime®. However, some of the members in these teams contacted the workers' council and reported to management. As a consequence, the management subsequently reprimanded these team leaders.

“Well, I did not feel any pressure. But I have heard from other teams where the use of Sametime® was prescribed or it was said that everyone use Sametime®.”

All in all, we observed that there were some teams where voluntariness acted as an inhibitor to full adoption. As a result, in these teams Sametime® could not be used effectively for team communication and coordination. Overall however, many teams had found ways to rise to the challenge in that a joint agreement or peer pressure had led to full team-level diffusion of Sametime®. As such, technology adoption by the individual team members was motivated by the following four aspects:

1. **Curiosity and experimentation**: Curiosity in terms of experimenting with the new technology leads to first hand experience of possible benefits of the technology for one's own practices.
2. **Team-level practices**: The expected utility at the team level leads team members to overcome personal sensitivities.
3. **Soft pressure**: De-facto usage of the new technology by other team members or team leaders makes it difficult for team members to abstain from adopting, if they don't want to miss out.
4. **Sense of corporate citizenship**: In an environment in which management action is generally perceived as trustworthy and benevolent, individuals are more open to experimenting with new technologies.

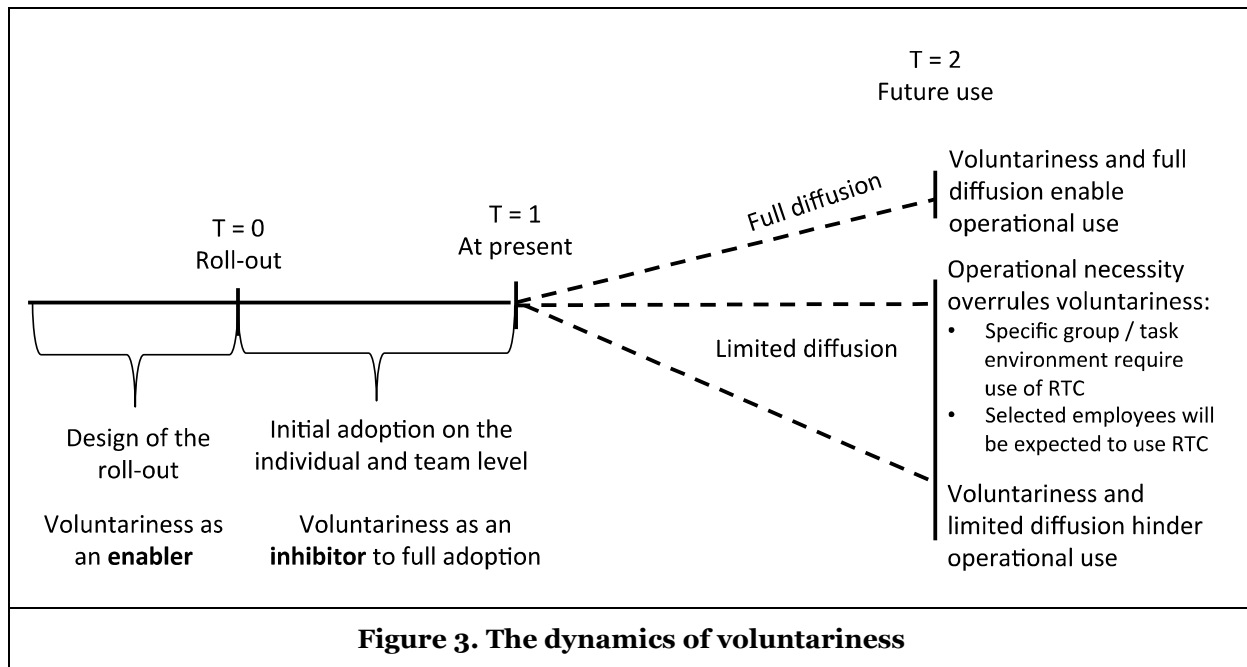
The dynamics of voluntariness over time

Most of the literature on voluntariness has examined its impact on the adoption process at a particular point in time. However, our case analysis reveals that it is reasonable to investigate the role of voluntariness at different stages in the adoption process. In the following, we spell out the changing notions of voluntariness and its impact in the different phases of the process (see Figure 3) from an organization's point of view.

During the design of the roll-out process (we refer to this stage as $t < 0$), voluntariness acted as an enabler or necessary precondition for “getting the project off the ground”; it reflected a concession made by management to the workers' council concern and MUFIN's organizational culture. During the first few months of initial use ($t > 0$), voluntariness allowed employees to freely experiment with the new technology. Meanwhile, top-level management expected that use would yield familiarity, which would ultimately yield acceptance and appropriation. However, over time voluntariness has only led to partial adoption of Sametime® from an organization's point of view. At present ($t = 1$), not all teams have adopted the new technology. In some teams, voluntariness and social dynamics have resulted in a group commitment to use Sametime® and in the development of team rules and practices of Sametime® use. However, in other teams voluntariness has inhibited a full team level adoption of Sametime® as people enacted their freedom to abstain. Resulting from these ambiguous outcomes and from the fact that full operational benefits of the new technology will only manifest under condition of full adoption, three different scenarios are conceivable for the future use of Sametime® ($t = 2$):

1. Should it come to full diffusion, operational use and roll-out across the sales organizations will be possible without further management interventions. In case of limited diffusion two further scenarios are possible.
2. Operational necessity might overrule voluntariness and lead to management intervention. As a result, selected employees will be expected to use Sametime® for predefined operational purposes (e.g. being on-call for consultations with the sales organizations).

3. Finally, management might decide not to intervene. As a consequence, the limited diffusion resulting from voluntariness will effectively inhibit a wider operational use of Sametime®. Due to the network nature of the Sametime® platform, usage might decline and the project might ultimately fail.



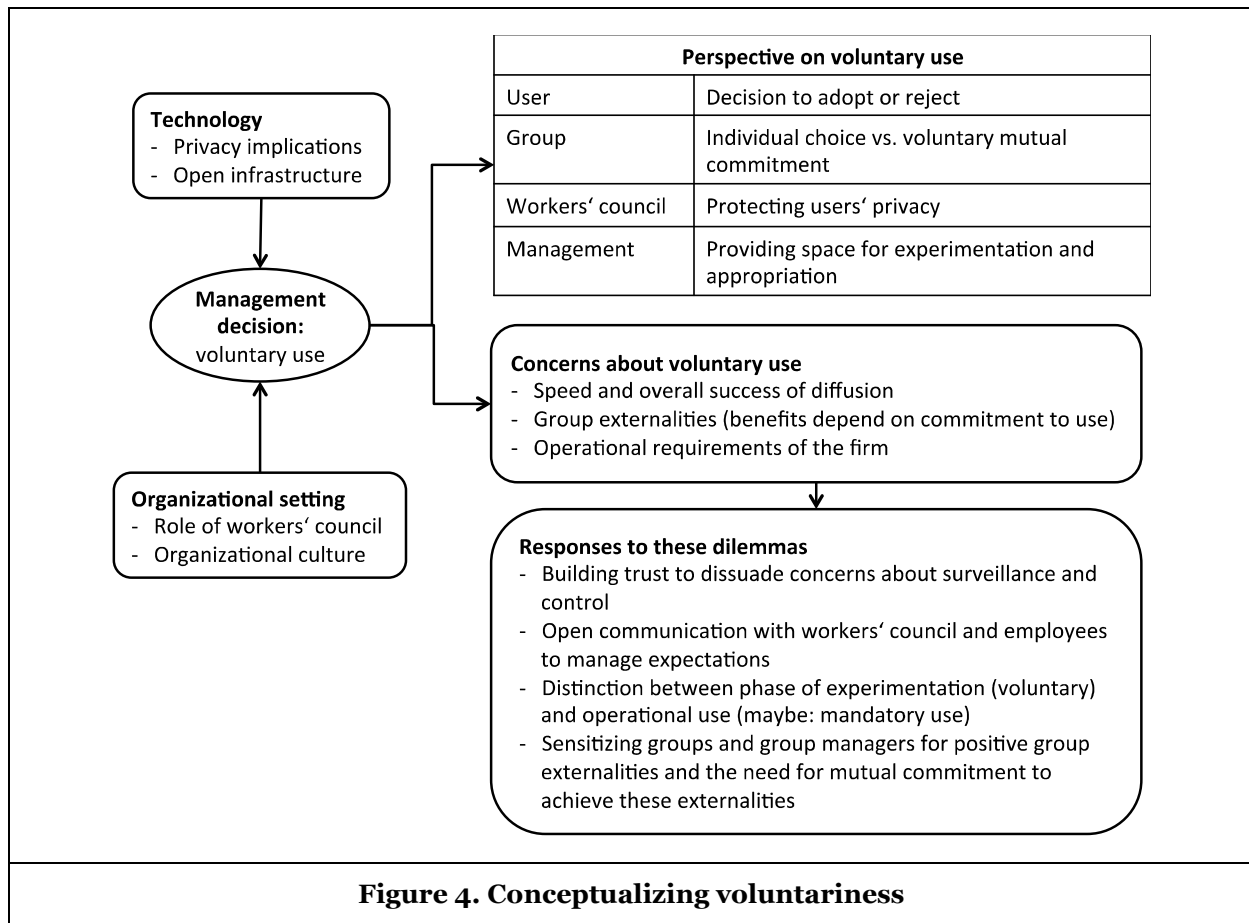
Our case presents an interesting dilemma with regards to the role of voluntariness over time: While voluntariness acted as an essential prerequisite for initiating the roll-out of Sametime® (in $t = 0$), it has acted as an inhibitor to achieving full diffusion after an initial adoption spell (in $t = 1$), as usage is at the discretion of each individual user. Given the nature of network technologies, without management intervention the organization risks stalling the diffusion process with the possibility that usage falters and the project fails. Since the role of voluntariness changes over time from key enabler to likely inhibitor of full diffusion, management is confronted with the decision to change its stance and advocate mandatory use (at least partially), in order to ensure that operational benefits materialize. However, at this stage, such a change in direction might now be possible, as 1) users have experienced the benefits, and 2) management has not abused the technology for monitoring. But such a change in the organizational design of the roll-out and adoption process will in any case require new negotiations with the workers' council. To sum up, our case unveils that the direction of organizational discourse around voluntariness changes over time as the dynamics of use or resistance unfold: from the freedom of choice for the individual towards a commitment towards the community so that all can benefit from enhanced connectivity and visibility, from facilitating voluntary adoption for all to identifying scenarios of mandated use for a few employees. On a more general level, our case exposes an interesting dialectic between voluntariness (and scope for experimentation and appropriation) on the one side and commitment to the community (also reflected in a basic set of rules) on the other side: "Don't pressure me – as long as I am willing to commit to the community."

Discussion

Our case presents itself as a special case in many respects. Thus, in the following we will derive a conceptualization of the role and impact of voluntariness as it presented itself in our case. In the next step, we will then present a set of theoretical propositions, derived from the case analysis, but intended as a step towards a more general understanding of the dynamic and multi-faceted role of voluntariness in IT adoption.

Conceptualizing voluntariness in our case

Our results clearly show that voluntariness is more than a one-dimensional factor influencing the individual adoption decision at one point in time. Consequently, we state that when researching the organizational adoption of a network technology, the nature and role of voluntariness can only fully be understood 1) against the specific background of the particular organizational context, 2) in light of the particular affordances of the network technology, 3) in interplay between the viewpoints of different stakeholder groups and related levels of analysis, and 4) over time in different stages of a roll-out process. Figure 4 presents our conceptualization of the dynamics of voluntariness in influencing management decision-making and user as well as group technology adoption in our case.



It was a deliberate decision by MUFIN's management to make the adoption and use of Sametime® voluntary, as this was seen as the precondition to get the project "off the ground" in the face of the workers' council's concerns. However, this decision needs to be viewed in light of the interplay between the two contingencies "technology features" and "organizational setting". It was the presence-signaling feature of the RTC technology, which can potentially be used for monitoring, that raised privacy concerns among employees and the workers' council. These concerns on the other hand were enacted in light of the particular legal and organizational setting in which the roll-out was happening: the legal requirement in Germany to obtain workers' buy-in for decisions impacting on privacy and the particular organizational culture at MUFIN, which stresses inclusiveness and fair play.

The decision for voluntary adoption and use needs to be further scrutinized from different viewpoints, as various stakeholders are influenced by the decision. While the management expected that voluntariness would allow individuals to experiment with the new technology without the pressure to adopt it, which would instill familiarity and might potentially overcome concerns, full adoption did not materialize. Consequently, voluntariness raised further management concerns with regards to the speed and success of

technology diffusion in the face of group externalities. In the face of the intended operational benefits, as envisioned by MUFIN's management, the mixed result of the adoption process presents the key dilemma exposed above: voluntariness has effectively changed from key enabler to key inhibitor over time (cf. Figure 3). In the face of the dilemma, decision-makers are presented with a list of possible responses as briefly discussed above and listed in figure 4.

Propositions and theory development

Having explained the role of voluntariness in our case, the following propositions are intended as a first cautious step towards developing a more general theoretical understanding of the dynamic role of voluntariness in the process of IT adoption and diffusion of network technologies. The propositions open up avenues for future research that might entail the formulation of more specific hypotheses for theory testing.

Proposition 1: *Management can use espoused voluntariness as a strategic tool in the roll-out of network technologies.*

Voluntariness of organizational adoption of technology is always constrained. Within the constraints of regulatory, legal, technical and organizational characteristics, management can convey the notion of voluntary use as strategic signal in order to facilitate technology acceptance, adoption and appropriation. We call the strategic use of voluntariness by management "espoused voluntariness". While it acknowledges individual's freedom of choice it signals at the same time management's support and commitment toward the technology.

Proposition 1.1: *Espoused voluntariness facilitates adoption and use of network technologies in the face of particular technology affordances.*

Technological affordance can cause concerns, fears or even resistance among employees. This is particularly the case where the technology enables the publication of individual information within the social network. Espoused voluntariness aims at building trust, diffusing concerns and encouraging experimentation and appropriation.

When technology is by nature flexible and open for appropriation, espoused voluntariness can facilitate experimentation and the development of rules and practices of use, without the need and pressure to adopt and use the technology in pre-specified ways.

Proposition 1.2: *Espoused voluntariness will interact with the organizational environment to foster adoption and use of network technologies.*

Espoused voluntariness is intended to create a climate of respect and trust, which is conducive to processes of negotiation and adoption at the group or team level.

Proposition 2: *Perceived voluntariness of a network technology in an organizational setting is subject to constraints.*

Voluntariness, as experienced and perceived by the individual in the organization, is contingent on a number of different factors (e.g. Karahanna, Straub and Chervany 1999). Voluntariness is not only influenced by direct forms of pressure like peer pressure, but also contingent on the specific organizational and team environment (including management's espoused voluntariness) and the nature of the technology.

Proposition 2.1: *Perceived voluntariness is initially shaped by management's framing of technology including espoused voluntariness.*

When management announces the introduction of a novel technology they simultaneously articulate their intentions, plans and expectation. This framing of the technology shapes employees' the assessment of novel technologies and is colored by espoused voluntariness.

Proposition 2.2: *Perceived voluntariness is constrained by organizational contingencies that interact with the specific affordances of the network technology.*

Voluntariness as perceived by the individual is constrained by the embedded nature of teamwork and the interdependency of communication practices facilitated by the network technology. The freedom to ab-

stain from adoption and use is challenged by expectations of group members to contribute to the joint practices and to realize the utility benefits promised by the new technology.

Proposition 3: *The effect of voluntariness on the diffusion of network technologies changes over time.*

While, in the face of individual concerns, espoused voluntariness can be seen as a key prerequisite to begin rolling out the new network technology, voluntariness can present as a threat to overall project success in later stages of the roll-out, when individuals insist on voluntariness and abstain from use.

Proposition 3.1: *Espoused voluntariness acts as an enabler for the roll-out of network technologies initially.*

Network technologies that bring about publicness and distribution of individual information to the greater social network can raise privacy concerns. Espoused voluntariness can thus be seen as a necessity to a successful project start for the roll-out of such network technologies.

Proposition 3.2: *Insistence on voluntariness may act as an inhibitor to full diffusion and thus a threat to project success later.*

Network technologies unfold their full potential only when they are adopted by the entire community of people that they intend to serve. Hence, the utility of the network technology does not fully manifest when a number of individuals (teams) make use of their right to abstain from adopting the technology. Hence, if individuals indeed insist on their right not to adopt, management might be faced with the necessity to retract their initial support for voluntary use in order to ensure project success and manifestation of the operational benefits envisioned for the network technology.

Conclusion

Currently, we observe a broad range of corporate initiatives to implement extensive network technologies, like communication and collaboration facilities or social media across a wide range of companies and industries. In doing so, such network technologies almost inevitably pose risks to employees' privacy, as they can potentially be used for control and surveillance. Against this backdrop, our case has shown that as a response to such challenges, management might revert to espoused voluntariness as a guiding principle for the roll-out of such technologies and count on the social dynamics of curiosity, experimentation, and soft team pressure to facilitate about appropriation and use.

While the emphasis on users' choice and voluntariness to adopt and use is by no means new to the IS literature, our study contributes to a better understanding of voluntariness in the organizational adoption of network technologies in different ways. In particular,

- We present a rich and quite unique case to illustrate the intricacies of IT adoption on the organizational level, with a focus on the role of voluntariness in the process.
- We demonstrate that in organizational settings, voluntariness of individual adoption is always contingent.
- We show that voluntariness is not just operating on the individual level and that its role can only be fully understood by looking at multiple stakeholders.
- We expose the complexities in management decision-making during the roll-out process of network technologies.
- We introduce the notion of *espoused voluntariness* and its interaction with affordances as an effective means of rolling out network technologies (in the face of employee concerns).
- We discuss the interaction between *espoused voluntariness*, as displayed by management, and *perceived voluntariness*, as experienced by individuals in group contexts.
- We show how teams self-organize to find different *coping strategies* to deal with the conflict of willingness to adopt (as a team) in the face of individuals' rights to abstain.

- We present the concept of *group externalities* that allows explaining processes of group-level adoption that exert an influence on individual's perception of voluntariness.
- We demonstrate that the role of voluntariness for overall project success in the roll-out of network technologies can change from key prerequisite in the beginning to potential inhibitor in later stages.
- Hence, we contribute to the IT adoption literature in that we spell out a more refined understanding of the complex and dynamic influence of voluntariness in the roll-out of network technologies.
- We capture our findings in a set of propositions, which we present as a first step in developing a theoretical understanding of voluntariness in IT adoption.
- We also contribute to the literature in the emergent field of communication infrastructures and network technologies in that we show how unique affordances impact on organizational (network-wide) diffusion.

At the same time, we acknowledge that our research is bounded by both the unique case setting and special circumstances of the German legal system, as well as the particular network-nature of the technology in question. Notwithstanding these limitations, we are able to formulate a set of general propositions regarding the role of voluntariness in organizational adoption of network technologies.

We have outlined the influence of the particular affordances of network technologies, as well as their interaction with aspects of the organizational environment, most of which are typical of large service organizations. Hence we expect transferability and applicability of our findings to other IT roll-out projects of similar technologies in organizational settings with similar characteristics (Seddon and Scheepers 2006). At the same time, we acknowledge that more research is needed to investigate the exact extent to which such a transfer will be possible. In particular, we state that more research is necessary that not only focuses on the individual perception of voluntariness, but which examines the strategic use of voluntariness by management.

We see our study only as a first step in gaining a better understanding of the concept and role of voluntariness in IT adoption. We take our findings as an indication that the IS community needs to develop a renewed interest in the phenomenon, especially at a time in which many companies explore the application of a range of collaborative or social technologies that require user participation and an open-minded atmosphere. Thus, we call for further investigation on the impact of voluntariness as a strategic managerial tool on the design and management of the introduction of a new technology. Furthermore, we argue that more research in the context of network technologies is needed, which analyzes the impact of voluntariness on group adoption and thus on individual's perceived voluntariness.

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