Master thesis

Factors influencing the adoption of Enterprise 2.0 as a tool for knowledge exchange

Examining system-, organization- and user-related predictors within a logistics company located in Germany

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Abstract

The internal usage of social media applications is rising, because they provide great possibilities to increase active knowledge exchange within organizations, which is an important process: Knowledge exchange via social platforms facilitates for example the onboarding of new employees as well as the collaboration between colleagues of separated departments, from different countries and within project teams. Especially businesses within logistics sectors do have to exchange a lot of knowledge daily for smooth operation. That's why one of the newest trends within such organizations is the implementation of Enterprise 2.0 systems. However, when reality knocks at the door, employee's resist using the enterprise software. Until now, little research has been done to explain Enterprise 2.0 adoption. Hence, the aim of this research was to investigate into factors (i.e. system-, organization- and user-related) influencing the adoption of Enterprise 2.0 as a tool for knowledge exchange within a logistics company located in Germany. An online questionnaire was conducted among employees of a logistics company settled in Germany. The questionnaires were distributed by E-Mail, resulting in a sample of 89 (16%) participants from Hong Kong, 72 (13%) respondents from the United States of America and 399 (71%) participants from Germany. The findings show significant influence on the dependent variable 'behavioral intention to use the Enterprise 2.0 system as a tool for knowledge exchange' among employees of a German logistics company for the predictors 'performance expectancy', 'subjective norm' and 'provided technical support'. Though, younger employees are more likely to adopt the Enterprise 2.0 as a tool for knowledge exchange. Furthermore, the variable lower 'effort expectancy' positively influences the 'performance expectancy'. Overall, the results support the application of the „Unified Theory of Acceptance and Use of Technology" (UTAUT) to predict the intention to adopt an Enterprise 2.0 system.

1. Introduction

Computer mediated communication has become part of our everyday life. However, the rise of social media alters the way we communicate with each other online (Richter & Riemer, 2009; Richter, Riemer, & vom Brocke, 2011). The World Wide Web turned into a social space, enabling social processes (Razmerita, Kirchner, & Nabeth, 2014).

Next to changes in our private life or how we communicate with each other nowadays due to the rise of social media the way of working is influenced by social media, too (Turban, Bolloju, & Liang, 2011). Businesses make use of networks like facebook.com or twitter.com for marketing reasons. They are able to collect data via those social media for personalized communication, become consumer-centered, interact with customers about values in a two-way direction and strengthen relationships to their customers. Moreover, social networks, as indeed.com or linkedin.com are perceived as a beneficial medium to recruit new employees. The McKinsey Global Institute (2013) mentioned 83 percent of the organizations already use social technology, a distinct growth compared to previous years. The use of social media for organizational communication with customers is already commonly studied (Leonardi, Huysman, & Steinfield, 2013).

But, social media do not only modify external organizational communication. Internal usage of social media applications is rising, because it provides several new opportunities to organizations. The McKinsey Global Institute (2013) indicated 73 percent of the companies implement internal social technologies, which is also a growing number compared to previous years.

One of the newest trends within large organizations is the implementation of Enterprise 2.0 (Trimi & Galanxhi, 2014; Zhang, Zhu, & Hildebrandt, 2009; Fulk & Yuan, 2013). “Enterprise 2.0 refers to the phenomenon of a new participatory corporate culture (with regard to communication and information sharing), which is based on the application of various types of social software technologies” (Richter et al., 2011, p. 91). Due to the fact that access to the system is constrained to employees it is an internal, corporate social system.

The purpose for the top-management of organizations is to enhance knowledge sharing among employees by implementing Enterprise 2.0 (Brzozowski, Sandholm & Hogg, 2009; Totterdale, 2009; (Razmerita et al., 2014). Accordingly, developers promise Enterprise 2.0 will facilitate work processes within global organizations. Business and economics research institutes, as for example the McKinsey Global Institute (2012), confirm those promises: “Improved communication and collaboration through social technologies could raise the productivity of interaction workers by 20 to 25 percent.”

For example, employees are separated into different departments. Within those departments colleagues know each other and are aware of who knows what. However, beyond the departmental boundaries that awareness of who knows whom and who knows what becomes blurred. Fulk & Yuan

(2013) add that a main challenge for knowledge sharing within organizations remains to be that employees do not know who has certain knowledge. Additionally, colleagues tend to hoard the knowledge they have within their department. As Bock, Zmud, Kim, & Lee (2005, p. 88) clarify: „Extensive knowledge sharing within organizations still appears to be the exception rather than the rule." Enterprise 2.0 offers a platform to break down those knowledge silos.

Further, the workforce of large organizations gets more and more spread around the globe. However, worldwide companies need bundle the knowledge of employees. Enterprise 2.0 offers a platform to break down physical distances and creates a general exchange platform.

Employees in project teams, which are connected due to a common goal, need to work with each other across departments and countries for a certain period of time. However, they do not share a general storage place and distribute documents mostly via E-mail. Those E-mails as well as attached files cannot be changed once they have been sent. Rather, employees send single files back and forth after each edit. This quickly results in versioning problems and a lot of confusion about the latest file. Enterprise 2.0 allows collaboration on a document and saves the document history. Furthermore, employees are currently grouped into many different E-Mail distribution lists, which lead to much administration effort and uncertainty about the recipients. Enterprise 2.0 gives the possibility to connect and interact on a shared platform with each other. The time of endless CC-chains ends with the introduction of Enterprise 2.0 systems. The sender does no longer determine the recipient or who is interested in the message. Instead, Enterprise 2.0 provides the content to a circle of potential recipients, who decide themselves if they want to read it and whether they want to comment it.

At least, the workforce of a company is always changing. Especially nowadays it is usual to work at several companies during ones work life. Employees, who worked for the company a long time, go into retirement or switchover to another company and new employees are recruited. However, the knowledge and experience of those who leave often falls away. Enterprise 2.0 offers a platform to transfer that knowledge even if employees are leaving, because it is stored. The chain of postings on a subject as well as the involved colleagues is visible for new employees. Networking for onboarding and the integration of new employees into the company is facilitated.

However, when reality knocks at the door, employee's often resist using those praised internal social media (Trimi & Galanxhi, 2014). Reasons for non-adoption are uncertain as well as how to facilitate internal usage of Enterprise 2.0.

Hence, regarding the current adoption difficulties and the great potentials of Enterprise 2.0 usage for enabled knowledge exchange within companies, a research, which investigates into the adoption predictors, is crucial. This research is intended to shed light on the adoption of Enterprise 2.0 as a tool for knowledge exchange. The research question, which will be addressed within this study, is:

"What are factors influencing the adoption of Enterprise 2.0 as a tool for knowledge exchange among employees of a logistics company located in Germany?"

The single case study will be examined at a logistics company located in Germany, which recently implemented an Enterprise 2.0 for the purpose of knowledge exchange.

The logistics sector, with a workforce of about 2,9 million, is one of the largest economic sectors in Germany (Bundesvereinigung Logistik, 2015). This is possible due to the geographical location of Germany in the middle of Europe and near the ocean, excellent infrastructures of roads, railways and airports and the technological lead (Bundesvereinigung Logistik, 2015).

Further, the "Global Logistics Markets – Trend Analysis" from 2014 provides evidence, that the German logistics sector is increasingly important in the international trade flow and expected to grow continuously worldwide (Roland Berger und Barclays, 2014). Opportunities for such a growth are offered through the rise of the e-commerce or Asian market (Roland Berger und Barclays, 2014).

However, a lot of knowledge needs to be exchanged daily within companies of the logistics sector for smooth operation. Only enumerating a few aspects, gives insights into that amount: It is about customers, products, storehouse capacities, stocks, costs, personal shift schedules or the truck-, train-, ship- and plane pools and their routes. Using the recent information technology is important for logistics companies to remain marketable as Roman Stiftner, president of the Bundesvereinigung Logistik, emphasizes: "New technologies have a huge impact on our personal lives, our privacy, and sparing neither economic nor the logistics" (Bundesvereinigung Logistik, 2014).

The researched German logistics organization manages the storage and transportation of goods for various branches around the globe via trucks, trains, ships and planes. As mentioned, by moving so many goods in numerous branches through several countries a lot of knowledge needs to be exchange. Further, the organization is headquartered and most employees work in Germany. Thus, decisions, ideas, facts and much business knowledge need to be transmitted from Germany into the different offices around the globe. Consequently, implementing an Enterprise 2.0 for the purpose of knowledge exchange was decided by the main board. However, within the company, as it is the case for many businesses right now, usage of the new system for the anticipated knowledge exchange is low.

1.1 Theoretical significance

Until now, little research has been done in the field of Enterprise 2.0 (Trimi & Galanxhi, 2014; Richter & Riemer, 2009; Zhang et al., 2009; Razmerita et al., 2014; Leonardi et al., 2013). Especially, the adoption of Enterprise 2.0 is rarely studied (Trimi & Galanxhi, 2014; Turban et al., 2011; Richter et al., 2011). As Trimi & Galanxhi (2014, p. 407) for example clarify: "Organizations have little precedence for the range

of issues involved with Enterprise 2.0 adoption." As adoption is the first challenge to overcome, it is important to get validated insights into the new, quickly growing technology.

Additionally, Wang & Noe (2010) and Bock et al. (2005) clarify that future research is needed to understand how to enhance the intention to share knowledge. New technologies for knowledge sharing, like the Enterprise 2.0, need to be studied in order to gain novel awareness` how to facilitate the internal knowledge exchange processes.

To predict the intention to adopt a technology Venkatesh, Morris, Davis, & Davis (2003) empirically validated the use of the „Unified Theory of Acceptance and Use of Technology" (UTAUT). Within this research the model will be applied as the theoretical foundation. In so doing and by distinguishing the model into system-related predictors (driving the adoption due to user evaluations regarding the system E2.0), organization-related predictors (driving the adoption on the basis of influences through the social environment on the user) and user-related predictors (driving the adoption due to individually differing attributes and estimations) this research will also contribute to research on information technology adoption and the generalization of the UTAUT.

Summarized, this research will complement the current lack of detailed insights into, on the one hand, adoption work and, on the other hand, knowledge exchange literature.

1.2 Practical importance

Being aware of the currently growing importance of Enterprise 2.0 systems, many businesses in the German logistics sector will profit from insights gained through this research.

First, being aware of factors for the adoption of Enterprise 2.0 improves the implementation processes of these platform`s within organizations. Change agents are aware of facilitators, which strengthen the implementation process. Thus, implementation costs can be lowered and the satisfaction with the new Enterprise 2.0 technology is reinforced.

Second, knowledge transfer, from the person who has certain knowledge to the point where someone needs that knowledge, is a crucial process within organizations. By improving the adoption of Enterprise 2.0 as a tool for knowledge exchange, employee's interaction with co-workers will be enabled and the problem of knowledge hoarding may be overcome. Further, a general platform to store knowledge and documents is established. Increases in the globally distributed work and the workforce demonstrate the importance of such developments (Richter & Riemer, 2009). Furthermore, as knowledge is one of the most important resources (van den Hooff & de Ridder, 2004; Ipe, 2003; McLure Wasko & Faraj, 2005; Bock et al., 2005; Paroutis & Al Saleh, 2009) the improvement of knowledge exchange will lead to an overall organizational benefit and a superior market position.

At least, Generation Y, today's youth is grown up with new technologies and social software is part of their everyday life (Richter et al., 2011). Organizations will lose in the war of young talents if they do not satisfy requirements of young employees and implement recent technologies.

1.3 Preview

In the next chapter an extensive literature study on the technology Enterprise 2.0, the process of knowledge exchange and the predictors of Enterprise 2.0 adoption is offered. Based on these facts hypothesis are formulated and the research model as well as the research question is presented. The following chapter clarifies the research design and procedure as well as the sample of the research. The results are specified afterwards. Based on the results, a discussion, practical as well as suggestions for future research are given.

2. Theoretical framework

Within this chapter, the technology, Enterprise 2.0, will be explained and defined. Second, it will be described how knowledge and knowledge exchange is understood. Followed by specifying what is meant by the adoption of a technology. Next, the different factors influencing the adoption of an Enterprise 2.0 as a tool for knowledge exchange will be outlined and hypotheses are formulated. At least, the research question is defined and the research model is presented.

2.1 What is an Enterprise 2.0 system?

The term Enterprise 2.0 is a composition of two words. On the one hand, 'enterprise' is used as a synonym for business or company (Richter et al., 2011). On the other hand, the 'Web 2.0' refers to the social influence or interactive, collaborative usage of the World Wide Web (Richter et al., 2011).

Richter et al. (2011, p. 91) define the technology in the following way: "Enterprise 2.0 refers to the phenomenon of a new participatory corporate culture (with regard to communication and information sharing), which is based on the application of various types of social software technologies."

Thereby, the accessibility is constrained to the corporate Intranet and therefore only accessible for employees. The reason why Enterprise 2.0 implementation is important within organizations comes to the point by the statement of Razmerita et al. (2014, p. 79): "Enterprise 2.0 focuses on knowledge exchange through social interaction and collaboration among employees mediated by social media."

Reviewing the researches on Enterprise 2.0 it becomes obvious that a few features or tools are characteristically for such a system:

- *Knowledge-related feature*: Enterprise 2.0 platform`s support employees in sharing their knowledge with colleagues through so-called 'wikis'. A wiki consists of structured content pages (Levy, 2009) and is defined as "a collection of Web pages designed to enable users to freely create, modify, and edit Web page content" (Zhang et al., 2009, p. 116). Hence, knowledge can be contributed by several employees and is woven into a whole webpage (Razmerita et al., 2014). Thereby, knowledge and information exchange is facilitated and know-how accumulated. Accordingly, Wang, Jung, Kang, & Chung (2014) found in their research that people experience a wiki as increasing collaboration. Levy (2009) supports this notion and Fulk & Yuan (2013) add that wikis offer great possibilities for interactive exchange of knowledge.
- *Collaboration-related feature*: Enterprise 2.0 systems also foster collaboration among employees through communities. Faraj, Jarvenpaa & Majchrzak (2011, p. 1224) define online communities as: "Open collectives of dispersed individuals with members who are not necessarily known or identifiable and who share common interests." Hence, communities are groups of people who exchange on a specific topic. However, as described, Enterprise 2.0 provides only access to

employees and those communities are usually established to exchange knowledge about shared tasks or projects instead of focusing on common, private interests. Nevertheless, they are useful tools to break down departmental boundaries and to create cross-departmental work groups in order to collaborate with each other.

- *Interaction-related feature*: Furthermore, an Enterprise 2.0 includes enterprise social networks (ESN), which give employees a platform to discuss with each other. Social network sites are defined by Boyd (2010, p. 42) as: "[A] combination of features that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system". ESN`s are, unlike social network sites, inside organizations and only accessible to employees. Through profiles and networks it becomes obvious who knows what and who knows whom. As Fulk & Yuan (2013) mention, ESN`s support social networking and effective knowledge management, by "connecting knowledge users to each other and to knowledge content" (p. 21).
- *News-related feature:* Blogs in an Enterprise 2.0 are managed by a certain employee, who publishes knowledge in order to update colleagues about news. Zhang et al. (2009, p. 117) define a blog as "a Web site, usually maintained by an individual, with regular entries of self-constructed commentary, descriptions of events, or other material such as graphics or video for illustration". Readers are informed by the posts of the author, whereby the most recent post always appears at the top (Razmerita et al., 2014). Through leaving comments users can start conversations (Razmerita et al., 2014). Thus, specific ideas can be shared, information distributed and discussions can take place. It can be used as an interactive alternative to newsletters or e-mails (Zhang et al., 2009; Wang et al., 2014). Razmerita et al. (2014) add that expertise can be identified through a blog.
    - *Additional features*:
    - Search function: Employees create their own profile with personal background information as department, personal knowledge or past experiences. Colleagues can use the search function to find profiles, which mention specific expertise.
    - Tags: Authors can connect tags with content to simplify organizing and finding specific information via the search function. Hence, labels are used to categorize content.
    - Alerts: Users get informed if changes in the Enterprise 2.0 happen (Levy, 2009). This alert can be accessed via for example daily or weekly E-mails or on mobile devices.

Enterprise 2.0 is the most common label. However, other researcher also term the technology for example 'Social business', 'Internal social networking', 'Intranet social network platforms', 'Enterprise Social Networking', 'Enterprise social software' or 'Enterprise Web 2.0' (Richter & Riemer, 2009;

Totterdale, 2009; Richter et al., 2011; Zhang et al., 2009; Turban et al., 2011; Wang et al., 2014; Fulk & Yuan, 2013; Kügler, Lübbert, & Smolnik, 2015; Kügler & Smolnik, 2014).

Within this paper the technology will be called Enterprise 2.0 or shortened E2.0. It is focused on an E2.0, which integrates the above mentioned features. In line, Leonardi et al. (2013) supports the fact that it makes no sense to distinguish between those tools, because they are all fully embedded within most E2.0 systems.

2.2 Advantages and disadvantages of computer mediated knowledge exchange

In contrast to exchange knowledge face-to-face, for example during meetings, computer mediated communication, for example via an E2.0, has advantages and disadvantages. By describing them, it is anticipated to convey a clearer understanding of the E2.0 system as a tool for knowledge exchange.

2.2.1 Advantages of Enterprise 2.0 usage for knowledge exchange

Based on a review of literature Trimi & Galanxhi (2014) cluster the main advantages of E2.0 usage in the following five categories:

- E2.0 for better communication: Due to the fact that employees self-organize the content a bottom-up communication line develops (Trimi & Galanxhi, 2014; Brzozowski et al., 2009; Razmerita et al., 2014). Razmerita et al. (2014, p. 74) further add that “a more personal knowledge management” is possible through the usage of such social media. Thus, experiences, knowledge, information and opinions can be exchanged in an informal, continuous, and proper way. Communication is no longer limited to a hierarchical structure, geographical distance or departmental boundaries.
- E2.0 for transformed collaboration: “The process of individuals with others or groups working together to achieve a common goal” (Trimi & Galanxhi, 2014, p. 409) is enabled. Working together is no longer structured top-down, but people, who have the needed knowledge or who share common interests can find or randomly come across each other. Communication and connections become visible in E2.0 systems. Indeed, Richter & Riemer (2009) found that employees use such technologies to identify experts.
- E2.0 for employee engagement: The technology provides new possibilities for employees to get involved in organizational processes and feel connected. The voice of employees matters and is listened to by a larger group of receivers than thinkable in an offline setting.
- E2.0 for knowledge management: “The processes by which knowledge is created, acquired, communicated, shared, applied, and effectively utilized’’ (Trimi & Galanxhi, 2014, p. 410) is enabled through E2.0 usage. Employees have access to a general and dynamic platform that is shared by every colleague rather than using private storage places.

- E2.0 for community building: Through social technologies as the E2.0 it is easier for employees to find colleagues with the same interests (Trimi & Galanxhi, 2014). Additionally, DiMicco, Geyer, Dugan, Brownholtz, & Millen, (2009) as well as Richter & Riemer (2009) found that employees use the technology for social reasons. According to them the usage of the platform enables employees to connect with colleagues and it stimulates existing relationships.

2.2.2 Disadvantages of Enterprise 2.0 usage for knowledge exchange

However, with those advantages of computer mediated communication some disadvantages also come along. Based on the literature review of Hsu & Chang (2014) these disadvantages of intra-organizational knowledge sharing via E2.0 are grouped in the following way:

- E2.0 provokes the fear of seeker opportunism: Users of E2.0 systems possibly request knowledge for their own purposes, only serving their self-interests and taking little or no self-effort (Hsu & Chang, 2014). Those knowledge seekers are not honest in their intention towards knowledge givers and do not consider the benefit of the knowledge giver (Hsu & Chang, 2014). Due to the fact that each employee is able create content it is likely that some colleagues would share false information to achieve a personal benefit.
- E2.0 provokes fear of losing knowledge power: The concern to be replaced or the loss of power and personal value after sharing unique or specialized knowledge leads to knowledge hoarding and inhibits effective sharing via the platform (Hsu & Chang, 2014; Leonardi et al., 2013). Knowledge is perceived as a valuable resource, which should be treated with caution and not shared on such a collective platform.
- E2.0 provokes wasting time: On the one hand the concern of non-reciprocity, mentioned by Hsu & Chang (2014) diminishes the benefit of E2.0 usage. If user experience unmet requests for knowledge in turn for given information they perceive information giving as a waste of time. On the other hand the knowledge seeker's absorptive capability, which is defined as "the contributor's beliefs regarding a seeker's inability to utilize the shared knowledge" (Hsu & Chang, 2014, p. 126) cause wasted time. If knowledge seekers need to ask for further support, because they do not comprehend or find given information on the platform, the knowledge giver even has to investigate more time for clarification and assistance. At least, a waste of time may occur if the technology is only used for entertainment or non-work-related issues rather than the intended knowledge exchange (Turban et al., 2011). As the content of E2.0 is user driven such a concern is reasonable.
- E2.0 provokes disconnection: Leonardi et al. (2013) adds that the personalization and the ease of finding people with same interests may strengthen connecting to like-minded people and weaken connecting to others, who have conflicting values or interests.

2.3 Defining knowledge exchange

So far, the technology E2.0 is specified in much detail. Nevertheless, within this research the adoption of E2.0 as a tool for knowledge exchange is focused. Therefore, knowledge exchange is operationalized more precisely within this section.

2.3.1 How is knowledge defined?

Knowledge is, according to Wang & Noe (2010, p. 117), defined "as information processed by individuals including ideas, facts, expertise, and judgments relevant for individual, team, and organizational performance."

Knowledge can be separated into instrumental knowledge and metaknowledge. Leonardi et al. (2013) define instrumental knowledge as "knowledge how to do something" (p. 4) and metaknowledge as "knowledge about what and whom other people in the organization know" (p. 4). When referring to knowledge within this research both instrumental and metaknowledge is meant, because they are both visible in the E2.0 and necessary for the proper functioning of an organization (Leonardi et al., 2013).

As knowledge resides within individuals, the focus of this research is the individual, micro level of analysis. Likewise, Razmerita et al. (2014) clarify that most knowledge management literature views knowledge as individual resource.

2.3.2 How is knowledge exchange defined?

Wang & Noe (2010) distinguish between knowledge sharing and knowledge exchange. On the one hand, sharing describes delivering knowledge to co-workers in order to help them. On the other hand, knowledge exchange includes the idea of sharing and beyond that adds active seeking of information, which incorporates the active search and collection of knowledge. Since E2.0 usage reflects a two-way flow of knowledge, the process of knowledge exchange, rather than knowledge sharing, is more appropriate within this research.

In the same way Kügler et al. (2015) and Kügler & Smolnik (2014) differentiate in their research between 'consumptive use' and 'contributive use'. 'Consumptive use' is defined as ''the extent to which employees use an [E2.0] for acquiring knowledge from the platform'' (Kügler et al., 2015, p. 813). On the other hand, 'contributive use' is defined as ''the extent to which employees use an [E2.0] for contributing knowledge to the platform'' (Kügler et al., 2015, p. 813).

Typically, an E2.0 system has more passive readers than active writers (Kügler et al., 2015). Nevertheless, seeking of information should not be less appreciated by organizations compared to sharing of information, because seeking activities trigger the willingness to share information (van den Hooff & de Ridder, 2004). Furthermore, both are equal crucial processes within organizations.

2.4 Adoption versus acceptance

Frambach & Schillewaert (2002, p. 164) cite Rogers (1995, p. 21) to define adoption as: ‘‘the process through which an individual or other decision-making unit passes from first knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision’’ (see Figure 1). Consequently, it is a process of stages a potential user goes through, who had only limited if any previous experiences with the technology before (Frambach & Schillewaert, 2002).

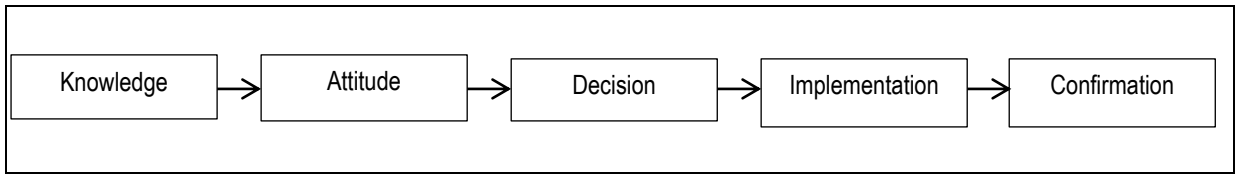

Figure 1: Basic Concept Underlying Adoption as operationalized by Frambach & Schillewaert (2002)

Through researches the adoption is often equated with the acceptance of a technology. However, the process of acceptance differs from adoption in a few aspects. Acceptance includes a feedback loop (see Figure 2): Here, actual use causes reactions, which influence the actual use of the technology all over again (Venkatesh et al., 2003). Experiences with the technology turn out to be relevant in an acceptance process. Hence, acceptance is somehow a post-adoption stage.

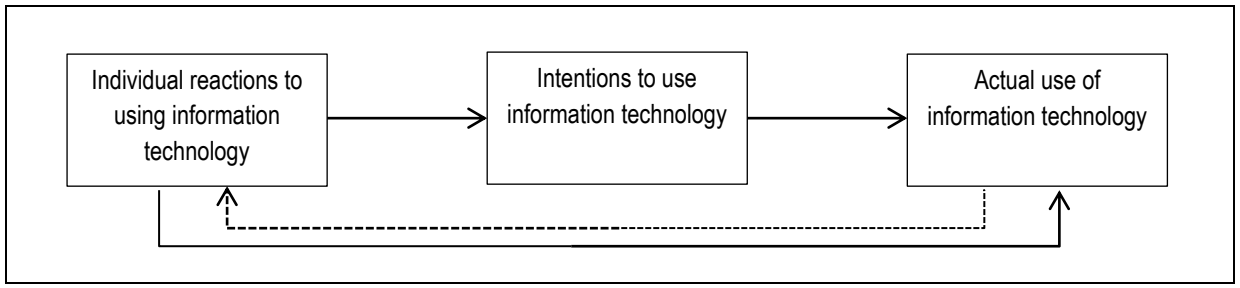

Figure 2: Basic Concept Underlying User Acceptance Models (Venkatesh et al., 2003)

Accordingly, Hernandez, Jimenez, & Martin (2009) distinguished between adoption and acceptance in their research on e-commerce customers. Hereby, researching the ‘adoption’ implies studying potential users and their debut decision to use the technology. Contrary, researching the ‘acceptance’ implies studying experienced users and their continued usage or decisions to use the technology a second time.

Hernandez et al. (2009, p. 1239) proved that “there are significant differences between adoption and acceptance behavior.” Furthermore, they mentioned that other studies on information systems found the same differences (Hernandez et al., 2009).

Within this research it will be focused on adoption, the decision by a potential user to use the technology the first time and to gain first experiences, because only a few employees within the researched organization use the system in general and even less for the planned purpose of knowledge exchange. Therefore, adoption is the main challenge to overcome for the researched organization and many other businesses right now.

However, some employees already use the platform for the purpose of knowledge exchange. To separate actual user from non-user it will be asked for the usage status and the dataset will be split into two. The applicability of the research model will also be tested for actual users, those who already exchange knowledge via the E2.0 platform. Thereby, insights can be gained into factors, which influence employees after adopting the system. Organizations get guidance what counts after adoption and can stimulate these predictors of actual use to increase the E2.0 usage after the adoption phase.

2.5 Studying the adoption of Enterprise 2.0

To predict the intention to adopt a technology Venkatesh et al. (2003) empirically validated the use of the 'Unified Theory of Acceptance and Use of Technology' (UTAUT) (Figure 3).

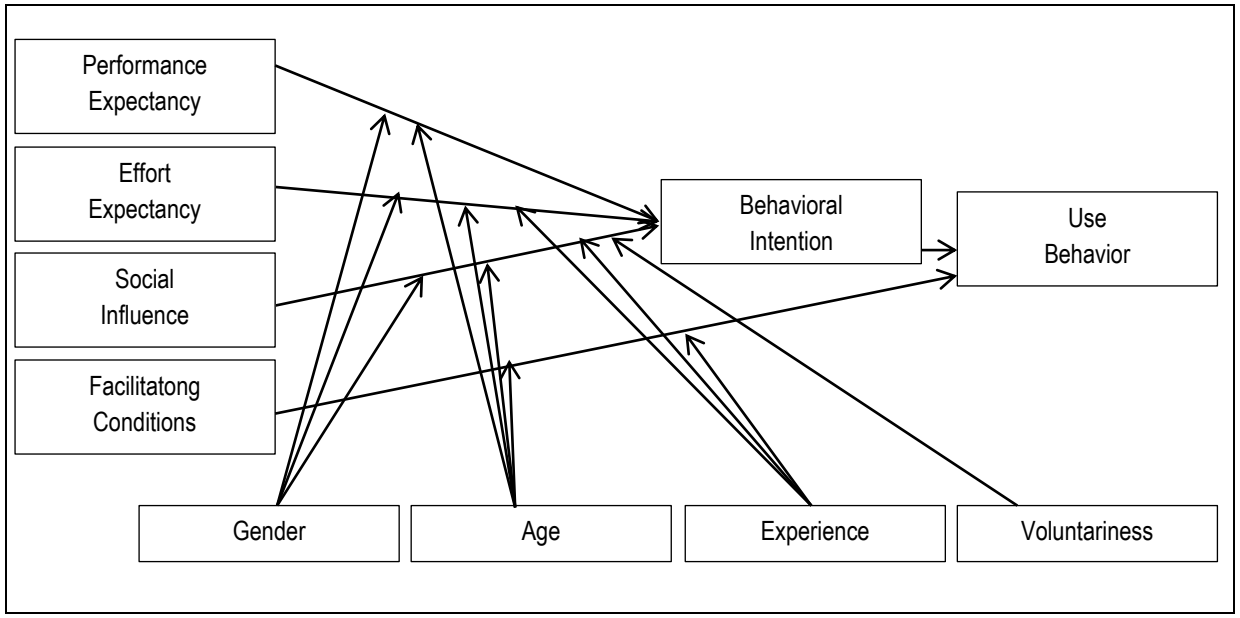

Figure 3: Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003)

The UTAUT synthesizes eight models through an extensive review and analysis, which are: "the theory of reasoned action (TRA), the technology acceptance model (TAM), the motivational model (MM), the theory of planned behavior (TPB), a model combining the technology acceptance model and the theory of planned behavior (TAM and TPB), the model of PC utilization (MPCU), the innovation diffusion theory (IDT), and the social cognitive theory (SCT)" (Venkatesh et al., 2003, p. 425).

As Wang et al. (2014, p. 1050) clarify: “The UTAUT represents the latest work that synthesizes previous models.” Further, it is able to “account for 70 percent of the variance in usage intention” (Venkatesh et al., 2003, p. 467), which is more than other technology adoption models were able to. Consequently, the UTAUT allows a recent, unified view on technology adoption. It`s application is reinforced due to the robustness and high explanatory of the model.

Additionally, Workman (2014) mentions the UTAUT is oriented towards a technology adoption within a work-related context. As this research focuses on E2.0 adoption within the organizational environment and based on these compelling facts as well as the array of researches, which successfully used the UTAUT, the model is evaluated as entirely convenient theoretical foundation for this research.

The UTAUT focuses on several dimensions, which have impact on the dependent variable. Those are expectations regarding the technology and social influences. Therefore, it is distinguished within this research between system-related predictors and organization-related predictors. First, the system-related predictors drive the adoption due to user evaluations regarding the system E2.0. Second, the organization-related predictors drive the adoption on the basis of influences through the social environment on the user.

2.5.1 Behavioral Intention to use the E2.0 as a tool for knowledge exchange

‘Behavioral intention’, in a technological context, describes the willingness or plan to use a technological innovation in future, which was not used before (Venkatesh et al., 2003).

It is important to specify the behavioral intention, as Workman (2014) emphasizes, because the UTAUT simply refers to the behavioral intention regarding a general technology. However, such a general dependent variable can be hazardous (Workman, 2014).

As it is intended to get an understanding of factors that influence individuals’ intentions to engage in knowledge exchange via E2.0, the behavioral intention is understood as the individual willingness of sharing and getting knowledge (Ridings, Gefen, & Arinze, 2002) through the E2.0 platform. Accordingly, knowledge exchange was earlier defined as a process of contributing as well as seeking knowledge through the system.

By specifying the intention to use it becomes clearer what kind of behavior is planned. Researchers and managers can gain a better understanding of the anticipated use behavior (Kügler & Smolnik, 2014).

<u>Behavioral intention to get knowledge</u>

On the one hand, the ‘intention to get knowledge’ is understood as the active search and collection of knowledge (Wang & Noe, 2010). In the same way, Kügler & Smolnik (2014), who identified distinct use behaviors of social software platforms, and the study of Kügler et al. (2015, p. 813) define ‘passive or

consumptive use' as: ''The extent to which employees use an [E2.0] for acquiring knowledge from the platform.''

Behavioral intention to share knowledge

On the other hand, actively delivering knowledge to co-workers in order to help them is understood as 'intention to share knowledge' (Wang & Noe, 2010). Correspondingly, Kügler & Smolnik (2014) and Kügler et al. (2015, p. 813) define 'active or contributive use' as: ''the extent to which employees use an [E2.0] for contributing knowledge to the platform.''

2.5.2 Actual use

Within the UTAUT 'behavioral intention' directly predicts 'usage'. Hence, usage is the dependent variable in the UTAUT-model and intention predicts the behavior (Venkatesh et al., 2003). Conversely, this research will focus on the predictors of 'behavioral intention' as a dependent variable due to three compelling reasons.

First, the research takes place during the adoption phase of the E2.0 within the logistics company. As mentioned only a few employees use the system in general and even less for the planned purpose of knowledge exchange. Only a few employees currently use the E2.0 for the purpose of knowledge exchange. Therefore, researching 'behavioral intention' is more suitable.

Second, the adoption of the E2.0 is the main challenge to overcome for the researched organization and many other businesses right now. Offering answers on how adoption can be facilitated will support many companies in their current situation.

Third, as Wang et al. (2014, p. 1051) explain: "Several prior studies have confirmed that behavioral intention is the major and strongest determinant of actual usage, providing robustness". Hence, it is acceptable to research the adoption as a strong predictor of behavior.

The applicability of the resulting research model will also be tested for actual users to gain first insights into what influences employees after adoption of the system. Like, behavioral intention is actual use also separated into the actions of sharing and getting knowledge.

2.5.3 System-related predictor: Performance Expectancy

Performance expectancy, by other researcher also termed perceived usefulness, is defined as "the degree to which an individual believes that using the system will help him or her to attain gains in job performance" (Venkatesh et al., 2003, p. 447). Hence, it is about improving the effectiveness and efficiency of accomplishing a task by using an E2.0 (Workman, 2014).

Performance expectancy is particularly important as a variable within this research due to the task-oriented nature of E2.0 platforms (Wang et al., 2014; Workman, 2014). As Wang et al. (2014, p. 1050) clarify: "E2.0 applications aim to help employees collaborate, share, and organize information for better job performance." Consequently, for a good adoption rate, the system should be evaluated as useful. Accordingly, Paroutis & Al Saleh (2009, p. 58) found in their research that "the majority of current users stated that they use Web 2.0 partly because it helps them do their jobs more effectively". In line, Wang et al. (2014) state that the adoption of a technology is more likely if it provides a unique advantage compared to existing technologies.

Performance expectancy is assumed to be the strongest predictor of the behavioral intention (Venkatesh et al., 2003). Additionally, Wang et al. (2014) and Karahanna, Straub, & Chervany (1999) manifest through their research the influence of performance expectancy on the behavioral intention to adopt an E2.0 system.

Consequently, following hypotheses will be tested to provide further proof for the impact of performance expectancy:

Hypothesis 1a: Greater performance expectancy positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 1b: Greater performance expectancy positively influences the behavioral intention to share knowledge through the E2.0.

2.5.4 System-related predictor: Effort Expectancy

The construct is defined as "the degree of ease associated with the use of the system" (Venkatesh et al., 2003, p. 450). Hence, the construct is about the evaluation of individuals, that using the system requires little or much effort in order to achieve benefits (Wang et al., 2014; Chompis, Bons, van den Hooff, Feldberg, & Horn, 2014).

Workman (2014) further adds that the use of a technology should be without necessarily reading manuals or following tutorials. Accordingly, Wang et al. (2014) found evidence for the assumption that a perceived unproblematic usage and an expected short learning period enhance the likelihood of E2.0 adoption.

Contrary, believing a technology is complex and learning how to handle the system would take much time decrease the likelihood of adoption (Wang et al., 2014).

Effort expectancy, labeled as perceived ease of use within some researches, is expected to be more salient in the early stages of a new behavior (Venkatesh et al., 2003). Due to the fact that the research focuses on the adoption phase, the relation between effort expectancy and behavioral intention is assumed to be quiet important and following hypotheses are formulated:

Hypothesis 2a: Lower effort expectancy positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 2b: Lower effort expectancy positively influences the behavioral intention to share knowledge through the E2.0.

If users evaluate the system to be easy to use, they are more likely to explore different features of the system, which increases the performance expectancy. Chompis et al. (2014), Wang et al. (2014), Joo, Lee, & Ham (2014) and several other studies also supported that effort expectancy has a positive impact on performance expectancy.

Consequently, it is hypothesized:

Hypothesis 2c: Lower effort expectancy positively influences performance expectancy.

2.5.5 Organization-related predictor: Social Influence

Differently from the UTAUT, but in line with the study of Wang et al. (2014), who tested social dynamics in virtual communities, social influence will be divided into subjective norm and external influence. This differentiation fits better to the unique condition of an E2.0 system, because interactive technologies depend upon the number of respondents (Wang et al., 2014; Frambach & Schillewaert, 2002; Kügler et al., 2015; Paroutis & Al Saleh, 2009).

Subjective Norm

Subjective norm is defined by Venkatesh et al. (2003, p. 451) "as the degree to which an individual perceives that important others believe he or she should use the new system." Thus, it is about what an employee perceives to be the norm (Thompson, Higgins, & Howell, 1991). This perception adjusts the own behavior to the supposed appropriate way (Thompson et al., 1991). Consequently, subjective norm can be understood as the compliance of an individual to perform a given behavior due to pressures from important third persons (Wang et al., 2014).

Karahanna et al. (1999) mention that those pressures are caused by several stakeholders, as for example the top management, supervisors, peers, local computer technology experts and friends. Wang & Noe (2010), Bock et al. (2005), Paroutis & Al Saleh (2009) as well as Frambach & Schillewaert (2002) supports the importance of managers or other co-workers influencing employees' intention to both share knowledge and adopt a technology. "The top management can send strong messages to the organization as to how important sharing knowledge is and people will be more inclined to perform a certain behavior if they feel that important referent individuals endorse this behavior" (Paroutis & Al Saleh, 2009, p. 59). Therefore, Wang et al. (2014) for example recommend that supervisors, who are

important to employees in an organization, should be stimulated to motivate their co-workers to use the E2.0 in order to facilitate adoption.

Further, Workman (2014) strengthens the importance of normative influences especially for social media, like an E2.0 platform, because social connections to others are central within these technologies.

As the subjective norm is found to be of influence on the behavioral intention (Venkatesh et al., 2003) following hypotheses are formulated:

Hypothesis 3a: Greater subjective norm positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 3b: Greater subjective norm positively influences the behavioral intention to share knowledge through the E2.0.

Perceived Network Externality

Perceived network externality as labeled by Wang et al. (2014, p. 1054) specifies "users' perceptions of whether an information technology has attracted a sufficient number of users to indicate that [a] critical mass has been reached".

Due to the fact that E2.0 is a technology, whose effectiveness heavily depends on the number of users, it is assumed to have a high impact on the adoption intention (Wang et al., 2014). Frambach & Schillewaert (2002), Kügler et al. (2015) and Paroutis & Al Saleh (2009) support the significance of a critical mass for interactive technologies. Imitating others, for example, becomes easier and costs of not using the technology increase, after a critical mass has been reached.

Interestingly, Wang et al. (2014) found that the variable, compared to subjective norm, has even stronger effects on the intention. In consequence, it is hypothesized that:

Hypothesis 3c: Greater perceived network externality positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 3d: Greater perceived network externality positively influences the behavioral intention to share knowledge through the E2.0.

2.5.6 Organization-related predictor: Facilitating Conditions

The construct is defined by Venkatesh et al. (2003, p. 453) "as the degree to which an individual believes that an organizational and technical infrastructure exists to support use of the system." It indicates the perceived amount of existing adoption barriers (Workman, 2014) and the degree of organizationally provided support to adopt the E2.0.

Other researches, which were not included in the synthesis of UTAUT, also support the importance of facilitating conditions, as for example ‘the conceptual framework of individual innovation acceptance in organizations’ by Frambach & Schillewaert (2002).

Organizationally Provided Technical Support

The personal support an organization offers through for example trainings, instructions or a contact person, who has the abilities to consult, influences the adoption of a technology (Venkatesh et al., 2003).

Thompson et al. (1991, p. 129) for instance state that usage barriers are reduced by offering trainings and assistance when users get in trouble. Additionally, Frambach & Schillewaert (2002) support the notion of training and Paroutis & Al Saleh (2009) found that a lack of support from the organization is a barrier and training a facilitator of Web 2.0 participation.

Therefore, the following hypotheses will be tested:

Hypothesis 4a: Greater organizationally provided technical support positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 4b: Greater organizationally provided technical support positively influences the behavioral intention to share knowledge through the E2.0.

Task-System Fit

The construct facilitating condition also includes the fit of an E2.0 with the current way of working and the compatibility with existing systems an employee is daily working with (Venkatesh et al., 2003).

Karahanna et al. (1999, p. 188) define compatibility as “the degree to which adopting the IT innovation is compatible with what people do” and support through their research the importance of the construct on the adoption decision. Accordingly, Thompson et al. (1991) hypothesize a positive relationship between perceived fit and adoption intention and mention “an innovation is more likely to be adopted when it is compatible with individual’s job responsibilities” (p. 129).

Consequently, these hypotheses are formulated:

Hypothesis 4c: Greater task-system fit positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 4d: Greater task-system fit positively influences the behavioral intention to share knowledge through the E2.0.

2.6 Added factors influencing the adoption of Enterprise 2.0 as a tool for knowledge exchange

The predictive value of the UTAUT-variables is to a great extent supported. However, the UTAUT only covers a summary of variables, which are important for adopting a general technology. It has neither identified other relevant predictors nor considered differential outcomes due to specific technological characteristics (Workman, 2014).

For example, Workman (2014) proved that the impact of the predictors of UTAUT depend upon the technology itself. He found some predictors to be relevant for social media adoption rather than smart phone application adoption and the other way round factors predicted smart phone application adoption but not social media adoption (Workman, 2014).

Due to the unique characteristics of the E2.0 technology as a tool for knowledge exchange, the extension of the UTAUT model is necessary. As Wang et al. (2014, p. 1051) mention "the explanatory power of a particular model or theory would depend on the characteristics of the user population, technology, and organizational context."

Karahanna et al. (1999), for example, focus in their research on social influences in line with Venkatesh et al. (2003) and added relevant personal interests. Such individual differences regarding the adoption of a technology are maintained through several studies and are proven to be essential.

Consequently, the UTAUT-model is adapted within this research to fit the specific needs of E2.0 adoption as a tool for knowledge exchange. It will be focus on system-related predictors, organization-related predictors and user-related predictors. As already described system-related predictors drive the adoption due to user evaluations regarding the system E2.0. Organization-related predictors drive the adoption on the basis of influences through the social environment on the user. The user-related predictors drive the adoption due to individually differing attributes and estimations. In the following, the variables, which are added to the UTAUT model, will be explained.

2.6.1 Organization-related predictor: Organizational Climate

Organizational climate is defined by Bock et al. (2005, p. 89) as: "A contextual situation at a point in time and its link to the thoughts, feelings, and behaviors of organizational members." Hence, it is a subjective perception, which is under influence of the social environment and therefore temporal.

Through reviewing knowledge exchange literature it becomes apparent, that organizational climate influences the intention to share knowledge (Bock et al., 2005; Wang & Noe, 2010; van den Hooff & de Ridder, 2004). Furthermore, Kügler et al. (2015) confirm that the technological adoption is related to organizational, contextual factors.

However, within some studies organizational climate is identically used with the term organizational culture. Climate as well as culture is about "the creation and influence of social contexts

in organizations" (Bock et al., 2005, p. 89). Although, culture is defined by Bock et al. (2005, p.90) as: "evolved context within which specific situations are embedded, […] rooted in history, collectively held, and sufficiently complex to resist attempts at direct manipulation."

As this research examines the individual adoption of E2.0 as a tool for knowledge exchange through a quantitative approach it is refereed to organizational climate rather than culture. In so doing, decision makers within organizations can take action as "the concept of organizational climate is said to be easier manipulable" (Kügler et al., 2015, p. 814) due to its temporality and subjectivity.

Knowledge-exchange climate

A shared knowledge-exchange climate, or collaborative norm, is defined as "the degree of consensus in the social system" (Hsu & Chang, 2014, p. 814) regarding the exchange of knowledge. These shared knowledge exchange goals and values indicate employees what is the norm and what is expected from them in the social, organizational system (Hsu & Chang, 2014; Kügler et al., 2015).

Hence, having a climate of active knowledge exchange is assumed to enhance the likelihood that each colleague takes the possibilities given in an organization to engage in knowledge exchange themselves. Consequently, it is hypothesized:

Hypothesis 5a: A greater shared knowledge-exchange climate positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 5b: A greater shared knowledge-exchange climate positively influences the behavioral intention to share knowledge through the E2.0.

Innovative Climate

Bock et al. (2005) propose an additional factor, which is crucial for knowledge exchange to occur. This is innovativeness, defined as "the perception that change and creativity are encouraged, including risk-taking in new areas where one has little or no prior experience" (Bock et al., 2005, p. 107). Within an innovative organizational climate employees as well as managers put emphasis on learning processes, open information flows, and encourage reasoned risk-taking (Bock et al., 2005).

Having an innovative climate is assumed to enhance the likelihood that each colleague participates in the process of knowledge exchange. Thus, following hypotheses are formulated:

Hypothesis 5c: A greater innovative climate positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 5d: A greater innovative climate positively influences the behavioral intention to share knowledge through the E2.0.

2.6.2 User-related predictor: Benefit of Sharing

Wang et al. (2014) and Lin (2007) compared extrinsic rewards (respect or recognition) with intrinsic rewards (realizing own values or feeling happy), when studying the intention to share knowledge. As extrinsic and intrinsic benefits are based on an employee's self-evaluation, they are understood as user-related predictor within this research.

Extrinsic Benefits

Perceived extrinsic benefits are known to have a positive influence on the intention to adopt the E2.0 (Wang et al., 2014). Karahanna et al. (1999, p. 188) define the construct as "the degree to which adoption/usage of the innovation is perceived to enhance one's image or status in one's social system."

The E2.0 offers a platform for employees to demonstrate what they know and to impress their colleagues with their knowledge. Research has shown that such strengthening of one's own reputation and status motivates for participation (McLure Wasko & Faraj, 2005). Paroutis & Al Saleh (2009, p. 58) for example indicate: "Current users expressed the importance of having their contributions recognized by their superiors and receiving credit for any ideas they share in the organization."

Next to the influence of extrinsic benefits on the intention to adopt a technology Ipe (2003), Lin (2007) and McLure Wasko & Faraj (2005) emphasize the importance of receiving benefits as facilitator for knowledge sharing. Furthermore, employees could be praised by their superiors when they actively and independently search for certain knowledge on the platform to accomplish tasks.

Thus, extrinsic benefits are hypothesized to influence the adoption decision:

Hypothesis 6a: Greater extrinsic benefit positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 6b: Greater extrinsic benefit positively influences the behavioral intention to share knowledge through the E2.0.

Intrinsic Benefits

Wang et al. (2014) found extrinsic rewards and not intrinsic rewards to have influence on the intention to share information via E2.0. However, many other researches also support the importance of intrinsic rewards, strengthened personal values and individual gains, when researching the impact on the intention to share knowledge (Lin, 2007; Paroutis & Al Saleh, 2009).

Intrinsic rewards are defined by Venkatesh et al. (2003, p. 428), who cite Davis, Bagozzi, & Warshaw (1992, p. 1112), as "the perception that users want to perform an activity for no apparent reinforcement other than the process of performing the activity per se."

Lin (2007) for example verifies that enjoyment to help others has a positive influence on knowledge sharing intentions. Accordingly, Paroutis & Al Saleh (2009, p. 59) found that: "A significant amount of respondents also participated in Web 2.0 because they enjoyed helping others." Likewise, employees can help their colleagues though searching for knowledge on the E2.0 and informing them about what was found.

Thus, following hypotheses are assumed:

Hypothesis 6c: Greater intrinsic benefit positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 6d: Greater intrinsic benefit positively influences the behavioral intention to share knowledge through the E2.0.

2.6.3 User-related predictor: General Trust

Mayer, Davis, & Schoorman (1995, p. 712) define the concept of trust as: "The willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party."

Within the context of E2.0 a user (trustor) trusts a group of strangers (trustee), rather than one identifiable individual, because an employee who for example posts a question on a blog does not know who answers that question. Hence, the employee trusts all readers and is convinced that no one will blame him for his answer and that someone will help him out. Therefore, trust is called general trust.

Both givers and receivers of knowledge have to trust, because knowledge givers have to trust to share what they know and knowledge receivers have to trust in the good intentions of givers to utilize the information (Li, 2011).

For successful E2.0 usage trust is a key element, because it enables voluntary cooperation (Ridings et al., 2002). "Research has shown that people […] work better with others they trust, while actively avoiding contact with those they do not trust" (Ridings et al., 2002, p. 275). Bock et al. (2005) for example verify the influence of a trusting climate on the intention to share information. Likewise, many studies verify that trust is an important predictor of intra-organizational knowledge sharing (Hsu & Chang, 2014; Ipe, 2003; Kügler et al., 2015; Bock et al., 2005).

Furthermore, an E2.0 provides insufficient guarantee for socially appropriate behavior of members due to for example lacking rules or the inherent anonymity of an online interaction. Thus, having trust in other members` adequate behavior is essential for the development of effective E2.0 usage (Ridings et al., 2002; Paroutis & Al Saleh, 2009).

The trustworthiness of the trustee is based on three distinct evaluations, which are ability, benevolence and integrity (Mayer et al., 1995). According to Ridings et al. (2002) benevolence in an

online interaction can be combined with integrity, because they measure the same. However, the constructs will be defined separately for detailed explanation.

Ability-based Trust

First, ability incorporates the estimation of skills and competencies of the trustee, with whom users can get in contact through the E2.0 (Mayer et al., 1995; Chompis et al., 2014). The ability is important for E2.0 systems, because the technology is established to accomplish tasks.

Ridings et al. (2002) and Paroutis & Al Saleh (2009) found evidence that ability influences the willingness to exchange knowledge, because it guarantees users to get the expected right information.

Consequently, the following hypotheses are formulated:

Hypothesis 7a: Greater evaluated ability positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 7b: Greater evaluated ability positively influences the behavioral intention to share knowledge through the E2.0.

Benevolence-based Trust

Second, benevolence includes the expected degree of the trustee to be positively oriented towards the trustor or the desire of the trustee to do something beneficial for the trustor (Mayer et al., 1995).

In the case of E2.0 evaluating the benevolence is important, because for effective knowledge exchange, the trustee should contribute to the discussion with the intention to help, to be honest and without following egocentric benefits. Accordingly, Ridings et al. (2002) found evidence that benevolence impacts knowledge exchange and Paroutis & Al Saleh (2009) supported its influence on participation in Web 2.0 platforms.

Consequently, the following hypotheses are formulated:

Hypothesis 7c: Greater evaluated benevolence positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 7d: Greater evaluated benevolence positively influences the behavioral intention to share knowledge through the E2.0.

Integrity-based Trust

Third, integrity includes the degree to which the trustee complies with principles that the trustor finds adequate (Mayer et al., 1995). A higher level of personal integrity develops through consistency in what is said and done in the past, credible information through trusted third parties about the trustee and by acting fairly (Mayer et al., 1995).

Regarding the E2.0 the construct of integrity is important, because employees who stick to the norms in the anonym online environment will contribute to an effective exchange. Accordingly, Ridings et al. (2002) found evidence that integrity impacts knowledge exchange.

Consequently, it is proposed that integrity has a positive influence on the adoption:

Hypothesis 7e: Greater evaluated integrity positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 7f: Greater evaluated integrity positively influences the behavioral intention to share knowledge through the E2.0.

2.6.4 User-related predictor: Individual Differences

Only few studies have researched the role of individual characteristics on knowledge exchange, even lesser on E2.0 adoption. This research will investigate into individual differences regarding the adoption of E2.0 as a tool for knowledge exchange.

Innovativeness

Innovativeness is defined by Frambach & Schillewaert (2002, p. 171) as the "tendency of a person to adopt an innovation within a product class, independently of the communicated experience of others."

The concept of innovativeness is for example inherent in 'the conceptual framework of individual innovation acceptance in organizations' by Frambach & Schillewaert (2002) and often mentioned as influencing the adoption of technologies.

Hereby, some persons are expected to be more willing to experiment with a new technology while others are not (Frambach & Schillewaert, 2002; Joo et al., 2014). In line, Wang et al. (2014) distinguishes in their research between innovative users, who see themselves as early adaptors of a new technology, and those who see themselves as less innovative, who do not immediately intend to adopt the technology.

Wang et al. (2014) as well as Joo et al. (2014) support that innovativeness is of significant influence on effort expectancy, because innovative users perceive a new technology more positive. Furthermore, Joo et al. (2014) mention several researches, which found that innovativeness has impact on performance expectancy.

Therefore, it is hypothesized that:

Hypothesis 8a: Greater innovativeness positively influences effort expectancy.

Hypothesis 8b: Greater innovativeness positively influences performance expectancy

Organizational Identification

Organizational identification is a form of cognitive-social identification (Mael & Ashforth, 1992), which is defined by Dutton, Dukerich, & Harquail (1994, p. 239) as: "The degree to which a member defines him- or herself by the same attributes that he or she believes define the organization." It indicates the belongingness to a certain organization compared to other organizations (Mael & Ashforth, 1992).

Step by step during a period of time, a person's self-concept or own characteristics correspond more and more with the perceived characteristics of an organizational identity (Dutton et al., 1994; Mael & Ashforth, 1992). Hereby, the identity as an employee becomes more salient than alternative personal identities (Dutton et al., 1994).

Accordingly, Kügler et al. (2015, p. 814) define 'community identification' as the "process whereby individuals see themselves as one with another person or group of people. […] A condition where the interests of individuals merge with the interests of the organization."

The employees of an organization will develop a feeling of togetherness, affiliation, reciprocal caring and show pro-social behavior (Kügler et al., 2015). They will experience organizational failures and successes as personal failures and successes (Mael & Ashforth, 1992), organizational goals become own goals. This process leads to a decrease of the perceived individual costs of knowledge exchange and is found to increase the intention to exchange knowledge (Kügler et al., 2015).

Thus, following hypotheses assumed:

Hypothesis 8c: Greater organizational identification positively influences the behavioral intention to get knowledge through the E2.0.

Hypothesis 8d: Greater organizational identification positively influences the behavioral intention to share knowledge through the E2.0.

2.6.5 Influences through demographic differences

Encouraged by the UTAUT-model, the influences through demographic differences in the sample will be analyzed within this research. It will be focused on the two demographic variables gender and age, because they are expected to significantly influence the intention to adopt the E2.0.

Gender

Through various studies it becomes obvious that women compared to men are more likely to make use of social services on the Internet (Correa, Hinsley, de Zúñiga, 2010; Duggan & Brenner, 2013; Jung, Chan-Olmsted, Park, Kim, 2011). As it is described, an E2.0 includes to a large extend such social devices (i.e. blogs, ESN, etc.). According to Correa et al. (2010) higher introversion and neuroticism of

women are motives for the greater interest in social services. Jung et al. (2011) add as reason that women have a higher need for social exchanges and are therefore more intended to use social services.

However, men compared to women tend have a higher intention to adopt computer related technologies in early stages of diffusion (Jung et al., 2011). Accordingly, Thompson (2001) relates to several researches, which found that men tend to use a digital device as the Internet more likely. Contrary, females feel more likely stressed when adopting new technologies (Thompson, 2001) and show higher computer anxiety (Jung et al., 2011; Thompson, 2001).

Thus, the following hypotheses will be tested:

Hypothesis 9a: Does gender plays a significant role in influence the behavioral intention to get knowledge through the E2.0.

Hypothesis 9b: Does gender plays a significant role in influence the behavioral intention to share knowledge through the E2.0.

Age

Jung et al. (2011, p. 207) mention that "age was found to relate negatively to adoption". Hence, younger compared to older people are more likely to adopt an innovative technology.

One reasonable explanation for that age-difference is that older employees compared to younger employees learned later in life how to work with digital technologies. Therefore, they are less open, less able and willing to learn how to use new technologies (Nedbal, Auinger, Hochmeier, & Holzinger, 2012). Further, as women, older employees are more likely to feel stressed when using technologies (Thompson, 2001).

Younger respondents are also known as regular users of social media as social network sites or instant messaging (Correa et al., 2010; Duggan & Brenner, 2013). They grew up with social software and already included them in their daily life (Richter et al., 2011).

Consequently following hypotheses are formulated:

Hypothesis 9c: Younger employees have a higher behavioral intention to get knowledge through the E2.0.

Hypothesis 9d: Younger employees have a higher behavioral intention to share knowledge through the E2.0.

2.7 Research model and research question

The research model for this study is presented below. The research question, which will be addressed within this study, is: "What are factors influencing the adoption of Enterprise 2.0 as a tool for knowledge exchange among employees of a logistics company located in Germany?" Consequently, the research will provide evidence whether the on theory based constructs definitely predict the adoption.

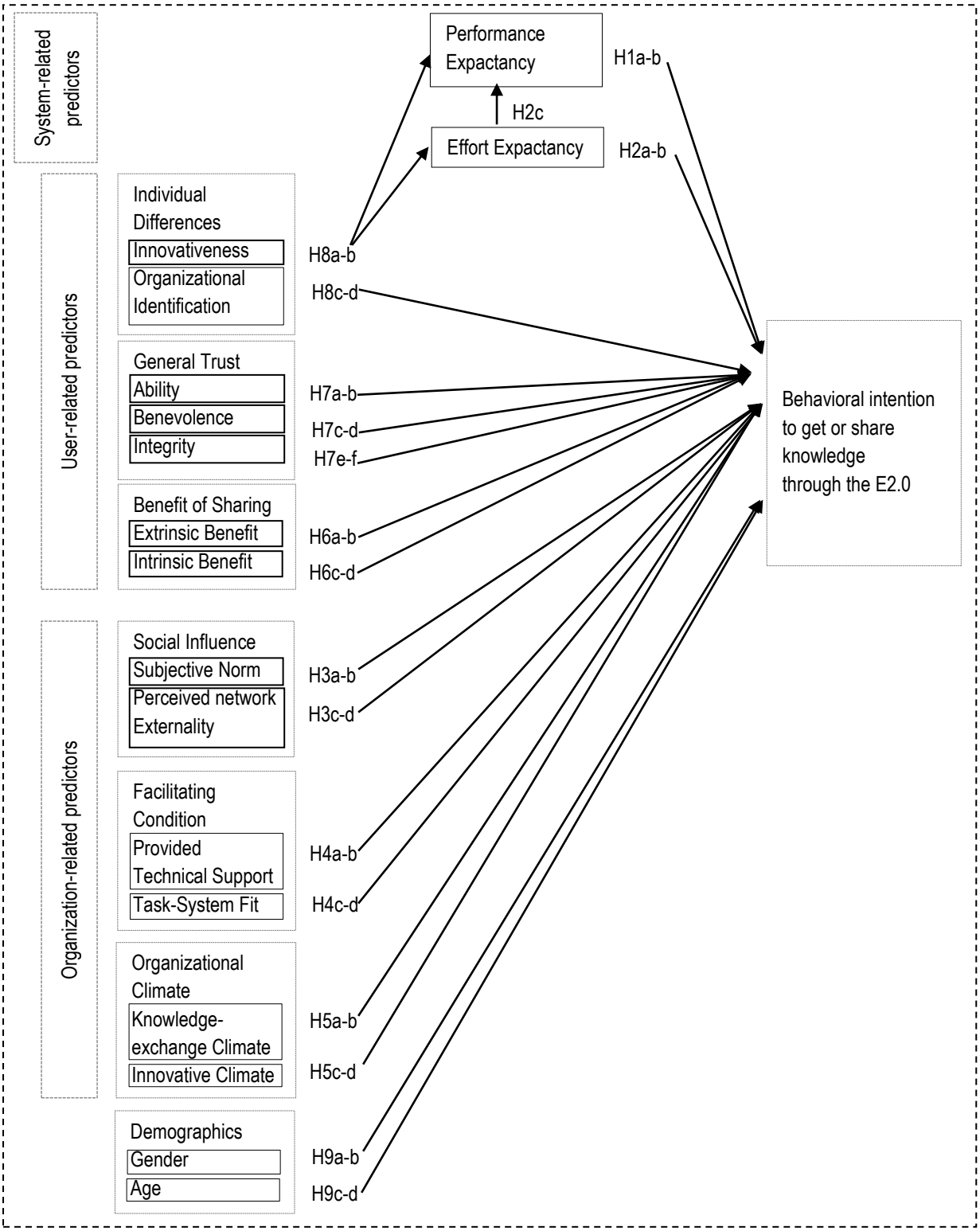

Figure 4: Research Model

Table 1: *Overview of all hypotheses*

Construct		Hypothesis
Performance Expectancy		
	Hypothesis 1a:	Greater performance expectancy positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 1b:	Greater performance expectancy positively influences the behavioral intention to share knowledge through the E2.0.
Effort Expectancy		
	Hypothesis 2a:	Lower effort expectancy positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 2b:	Lower effort expectancy positively influences the behavioral intention to share knowledge through the E2.0.
	Hypothesis 2c:	Lower effort expectancy positively influences performance expectancy.
Social Influence		
Subjective Norm	Hypothesis 3a:	Greater subjective norm positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 3b:	Greater subjective norm positively influences the behavioral intention to share knowledge through the E2.0.
Network Externality	Hypothesis 3c:	Greater perceived network externality positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 3d:	Greater perceived network externality positively influences the behavioral intention to share knowledge through the E2.0.
Facilitating Conditions		
Provided Technical Support	Hypothesis 4a:	Greater organizationally provided technical support positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 4b:	Greater organizationally provided technical support positively influences the behavioral intention to share knowledge through the E2.0.
Task-System Fit	Hypothesis 4c:	Greater task-system fit positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 4d:	Greater task-system fit positively influences the behavioral intention to share knowledge through the E2.0.
Organizational Climate		
Knowledge Exchange Climate	Hypothesis 5a:	A greater shared knowledge-exchange climate positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 5b:	A greater shared knowledge-exchange climate positively influences the behavioral intention to share knowledge through the E2.0.
Innovative Climate	Hypothesis 5c:	A greater innovative climate positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 5d:	A greater innovative climate positively influences the behavioral intention to share knowledge through the E2.0.
Benefit of Sharing		
Extrinsic Benefit	Hypothesis 6a:	Greater extrinsic benefit positively influences the behavioral

		intention to get knowledge through the E2.0.
	Hypothesis 6b:	Greater extrinsic benefit positively influences the behavioral intention to share knowledge through the E2.0.
Intrinsic Benefit	Hypothesis 6c:	Greater intrinsic benefit positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 6d:	Greater intrinsic benefit positively influences the behavioral intention to share knowledge through the E2.0.
General Trust		
Ability-based	Hypothesis 7a:	Greater evaluated ability positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 7b:	Greater evaluated ability positively influences the behavioral intention to share knowledge through the E2.0.
Benevolence-based	Hypothesis 7c:	Greater evaluated benevolence positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 7d:	Greater evaluated benevolence positively influences the behavioral intention to share knowledge through the E2.0.
Integrity-based	Hypothesis 7e:	Greater evaluated integrity positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 7f:	Greater evaluated integrity positively influences the behavioral intention to share knowledge through the E2.0.
Individual Differences		
Innovativeness	Hypothesis 8a:	Greater innovativeness positively influences effort expectancy.
	Hypothesis 8b:	Greater innovativeness positively influences performance expectancy.
Organizational Identification	Hypothesis 8c:	Greater organizational identification positively influences the behavioral intention to get knowledge through the E2.0.
	Hypothesis 8d:	Greater organizational identification positively influences the behavioral intention to share knowledge through the E2.0.
Demographics		
Gender	Hypothesis 9a:	Does gender plays a significant role in influence the behavioral intention to get knowledge through the E2.0.
	Hypothesis 9b:	Does gender plays a significant role in influence the behavioral intention to share knowledge through the E2.0.
Age	Hypothesis 9c:	Younger employees have a higher behavioral intention to get knowledge through the E2.0.
	Hypothesis 9d:	Younger employees have a higher behavioral intention to share knowledge through the E2.0.

3. Method

The detailed execution of the single case study, including design, research context, procedure, instrument and sample of the research, will be outlined in the following.

3.1 Research design

To collect data and to analyze the adoption of Enterprise 2.0 as a tool for knowledge exchange, a quantitative approach, explicitly an online survey was implemented. Within this survey the following constructs were measured: Performance expectancy, effort expectancy, social influence (subjective norm and perceived network externality), facilitating conditions (organizationally provided technical support and task-system fit), organizational climate (shared knowledge-exchange climate and innovative climate), benefit of sharing (extrinsic benefit and intrinsic benefit), general trust (ability, benevolence and integrity) and individual differences (innovativeness and organizational identification).

3.2 Research context

The research was conducted within a logistics company located in Germany, further indicated as organization X, which recently implemented an Enterprise 2.0 system from IBM (IBM Connections) and where employees' usage of the technology was low. The circumstances represented a condition under which the research question: "What are factors influencing the adoption of Enterprise 2.0 as a tool for knowledge exchange among employees of a logistics company located in Germany?" could to be tested.

3.3 Procedure and instrument

The whole survey consisted of 54 items. These items were based on existing scales, which were modified in their formulation in order to fit to the research context.

For German speaking employees the survey was translated into the German language. In order to prevent translation biases the survey was translated back from German into English by a 50 year old male employee and by a 25 year old female employee. After re-translation some formulations were adapted to guarantee that the meaning in German conforms to the English denotation.

The comprehension of the English survey was tested by another 50 year old male employee and a 31 year old female employee. For the German survey the comprehension was tested by a 56 year old employee and 25 year old female employee. Finally, the functioning, completeness and once again the understanding of the whole online survey was tested in the online environment by a 24 year old male employee and a 30 year old female employee. Some statements were slightly reformulated to ensure that they will be understood by respondents.

The online survey was sent from the official intranet E-mail-account to employees in Germany, the United States of America and Hong Kong. The employees had the possibility to fill in the survey during a four-week time period in April 2015. After two weeks a reminder was sent to employees in Germany, the United States of America and Hong Kong.

Completing the survey took about 15 minutes and employees needed access to the organizational network in order to open the survey. Thus, most respondents filled in their survey during their work time in their office or home-office. Therefore, the research setting was assumedly quiet.

The survey started by asking for demographic data as gender, age, work experience, education, job position and in which office the respondent was located. It was not ask for personal identifiable information to guarantee anonymity and prevent negative consequences for respondents.

Second, a definition of knowledge exchange by van den Hooff & de Ridder (2004) was given. As the E2.0 was studied as a platform for knowledge exchange it was certain, by giving a definition that every respondent had the same idea about the process of sharing and getting knowledge inherent in knowledge exchange as understood within this research.

After reading the definition the first question was intended to divide actual user from non-user and to identify those who did not know the system at all. It was asked whether respondents considered themselves as someone who uses IBM Connections for the purpose of knowledge exchange or not. Those, who indicated to have never before heard about a system called Connections within the organization, were sorted out. These participants did not continue filling in the survey, because they were not aware of the system.

In the next step, active users were asked for the frequency of usage. It was differentiated between daily, weekly, monthly or yearly. Further, they answered the four items on the construct actual use. Actual use was measured by a 5-point frequency scale, ranging from ‘never to rarely, occasionally, frequently and very frequently’.

Non-user, those respondents, who considered themselves as not using IBM Connections for the purpose of knowledge exchange, but as being aware of the system within the organization, answered the four items on the construct behavioral intention. Behavioral intention was measured by a 5-point probability scale, ranging from ‘not at all probable to slightly probable, moderately probable, very probable and completely probable’.

The items for actual use and behavioral intention were adapted from Kügler et al. (2015), who separated active usage from passive usage. Passive use was understood as using “an [E2.0] for acquiring knowledge from the platform” (Kügler et al., 2015, p. 813) and active use as using “an [E2.0] for contributing knowledge to the platform” (Kügler et al., 2015, p. 813).

Next, both user and non-user needed to fill in the same set of remaining constructs. These constructs were measured by a 5-point likert scale, ranging from ‘strongly disagree to disagree, neither agree nor disagree, agree and strongly agree’. Performance expectancy, effort expectancy, social influence (subjective norm) and facilitating conditions were adapted from Venkatesh et al. (2003). Social influence (network externality) was taken from Wang et al. (2014). The construct ‘organizational climate’ was modified from Kügler et al. (2015) (shared knowledge-exchange climate) and Bock et al. (2005) (innovative climate). From Wang et al. (2014) the operationalization of the construct benefit of sharing (extrinsic and intrinsic benefit) was adopted. The items of general trust (ability, benevolence and integrity) were used according to Mayer & Davis (1999). Innovativeness belonging to the construct of individual differences was taken form Wang et al. (2014). Lastly, organizational identification, which belongs to the construct individual differences, was adapted from Mael & Ashforth (1992). Each construct was measured by three items. The complete survey can be found in English in appendix I and in German in appendix II.

3.4 Sample

The sample of the research consisted of employees, who worked for the researched organization in Germany, the United States of America or Hong Kong. All respondents needed to be employed within the organization X.

The survey was sent from the official intranet E-mail-account. Thus, sampling was done through an online survey. Industrial workers, those who drove the trucks or worked at the warehouse, were excluded from the research, because those employees had no organizational E-mail account and therefore did not have access to the E2.0 technology.

In total 1.552 employees started the survey of which 1.145 respondents completed the survey (non-response of 26%). Further, 21 faulty surveys were removed before starting the analysis, because the age or work experience was not filled in correctly or the respondent was below the ethical justifiable age of 18 years. Consequently, 1.124 respondents remained for the analysis.

The greater number of respondents was male, 625 participants (56 %), compared to 499 female participants (44 %). However, the gender difference was quiet small.

The average age of the respondents was 40 years (SD= 12 years). The youngest respondents were 18 years old and the oldest respondents 68 years old. Hence, the sample was old enough to comply with ethical standards.

The distribution among the levels of education was as followed: 34 % (n= 387) had a high school degree, 26 % (n= 290) had a vocational school degree, 17 % (n= 193) had a Bachelor diploma, 11 % (n= 121) had a Master diploma, 0,3 % had a Ph.D. (n= 3) and 12 % (n= 130) choose other.

Furthermore, most participants had no managerial responsibility (n= 793, 71 %) compared to those with managerial responsibility (n= 331, 29 %). This was in agreement with organizational reality, because the organization had more employees compared to leaders.

The greater average of respondents worked in Germany (n= 794, 70 %), followed by Hong Kong (n= 188, 17 %) and the United States of America (n= 142, 13 %).

The distribution regarding the work experience was between a few months, the shortest membership at the organization, and 50 years, the longest membership at the organization (mean = 9 years, SD= 9 years). In total 249 respondents (22 %) considered themselves as user of IBM Connections for the purpose of knowledge exchange and a number of 311 respondents (28 %) considered themselves as non-user of IBM Connections for the purpose of knowledge exchange. Furthermore, 564 respondents (50 %) indicated, that they had never ever before heard about a system called IBM Connections within the researched organization.

Presented in Table two is the complete demographic information of the sample. A more detailed identification of the demographics of the sample can also be found in Appendix lll.

Table 2: *Demographic Information of All Survey Respondents*

Demographic construct	Frequency	Percent
Gender		
Male	625	56
Female	499	44
Location		
Germany	794	70
Hong Kong	188	17
United States of America	142	13
Job Position		
With managerial responsibility	331	29
Without managerial responsibility	793	71
Level of education		
High School	387	34
Vocational School	290	26
Bachelor	193	17
Master	121	11
Ph. D./Doctorate	3	.3
Other	130	12
Usage Status		
Actual User	249	22
Non-User	311	28
Do not know the system	564	50
Total	1.124	100

4. Results

Within this section the results of the research will be described. First, the results of the factor analysis and analysis of variance will verify whether the items are really distributed over the constructs as predicted by literature. Next, it will be examined by an ANOVA test whether there are differences between employees of the various countries researched. Due to adjustments in the research sample the second factor analysis will check whether items do conform to the by literature operationalized constructs for the final sample. Afterwards the reliability of each construct is tested to guarantee that the results are free from measuring errors. Then, it will be specified if any of the determined constructs has effect on the dependent variable in order to answer the research question. The description of the abbreviations used in this section can be found in appendix IV.

4.1 Variability among the observed variables

As mentioned, the survey used within this research consisted of established scales. Hence, the variability, whether the items are really distributed over the constructs as predicted by literature or whether the items do not conform to the by literature operationalized constructs, was checked first.

To separate actual user from non-user the dataset was split into two. Afterwards the principal component analysis was conducted on the 54 items with orthogonal rotation (varimax). A criterion of .60 was chosen for extracting factors.

First, the data concerning the participants, who indicated themselves as actual user, are described. Second, the data concerning the participants, who indicated themselves as non-user, are described.

4.1.1 Factor structure for the group of actual user

The results indicate that all items split among 11 components. The Kaiser-Meyer-Olkin Measure of sampling adequacy is .816, which is above the criterion of .60 and close to one. Hence, using factor analysis on the data is appropriate and will produce reliable factors.

The first component contains the items concerning the perceived ability and integrity of colleagues. Due to the fact that these items load on the same component they were merged into one construct labeled ‘trust in colleagues’. The second component includes the items of perceived innovative and knowledge exchange climate. As these statements have a high internal coherence and load on one component, they were merged into one construct labeled ‘organizational climate’. All remaining items load on the supposed constructs.

The item KE1 (Knowledge-exchange Climate) and AC2 (Organizational Identification) load below the criterion of .60 and were excluded from the analysis. Furthermore, the constructs ‘extrinsic

benefit', 'intrinsic benefit', 'benevolence based trust' and items of 'task-system fit' were dropped from further analysis, because they had cross-loadings on several other factors. Appendix V shows the factor loadings after rotation and the items in detail.

4.1.2 Factor structure for the group of non-user

As we can see through the results, all items split among 10 components. The Kaiser-Meyer-Olkin Measure is .883, which is also above the criterion of .60.

Consistent with the group of actual user, did the items on ability and integrity as well as the items of perceived innovative and knowledge-exchange climate load on one component.

In contrast to the group of actual user, whereby actual use was split into share and get knowledge, the loadings of the behavioral intention to either share or get information loaded on one component. They were merged into one construct labeled 'behavioral intention to use the system'. All remaining items loaded on the supposed constructs.

The same sets of items were dropped from further analysis as in the group of actual user, because they had cross-loadings on several other factors. Appendix V shows the factor loadings after rotation and the items.

4.2 Examination of country differences

Due to the fact that the survey was conducted in three countries of the world, which undoubtedly differ from each other in their culture, results could be biased when treating the sample as one homogenous group. Hence, an analysis of variance (ANOVA) was carried out in order to check, whether there were significant differences within the sample between employees from Germany, the United States and Hong Kong. The null hypothesis that all means are equal was tested against the alternative hypothesis that the means are not equal. By carrying out a post hoc test, more precisely the Tukey´s test, further insights were gained.

4.2.1 Difference for the group of actual user

Actual use was measured by a 5-point frequency scale, ranging from ʻ(1) never to (2) rarely, (3) occasionally, (4) frequently and (5) very frequentlyʼ. The remaining constructs were measured by a 5-point likert scale, ranging from ʻ(1) strongly disagree to (2) disagree, (3) neither agree nor disagree, (4) agree and (5) strongly agreeʼ.

Through the analysis it becomes obvious that countries significantly differ from each other regarding the mean values of several constructs. These are: 'subjective norm', 'performance

expectancy', 'innovativeness', 'network externality', 'organizational identification' and 'sharing as well as getting knowledge'. Three patterns of differences could be found, which are outlined in the following.

First, for the subjective norm ($F= 6.13$; $p < .01$) and network externality ($F= 17.55$; $p < .01$) Germans significantly differed from respondents of Hong Kong and the United States of America, who formed one group. As the Tukey´s test indicates the mean values of German respondents were significantly lower compared to respondents of Hong Kong and the United States.

For subjective norm, Germans ($M= 3.04$; $SD= .82$) were somewhat neutral in the degree to which third parties could influence them. Participants from Hong Kong ($M= 3.41$; $SD= .51$) and the United States ($M= 3.39$; $SD= .79$) agreed a bit about the normative influence to use the system.

For network externality, Germans ($M= 2.36$; $SD= .86$) disagreed that the system had reached a sufficient number of users, whereas the respondents from Hong Kong ($M= 2.99$; $SD= .75$) and the United States ($M= 3.06$; $SD= .89$) were neutral.

Second, regarding the constructs organizational identification ($F= 5.51$; $p < .01$), getting knowledge ($F= 5.69$; $p < .01$) as well as sharing knowledge ($F= 3.66$; $p < .05$), Germans differed from respondents of the United States. However, participants from Hong Kong had similar means to both groups. Hereby, Germans had also a significantly lower mean value compared to respondents from the United States, whereas participants from Hong Kong scored in between of the two countries.

For organizational identification Hong Kong ($M= 3.55$; $SD= .63$) was neutral. Whereas respondents from the United States ($M= 3.87$; $SD= .68$) mostly agreed to belong to that certain organization and defined themselves by the same attributes, which define the organization, Germans ($M= 3.39$; $SD= .93$) were quiet neutral, even a bit disagreeing regarding such an identification.

Regarding the construct getting knowledge participants from Hong Kong ($M= 3.38$; $SD= .66$) indicated to occasionally use the platform to acquire knowledge. Germans ($M= 3.17$; $SD= .79$) specified to sometimes search for knowledge via the platform, whereas respondents from the United States ($M= 3.61$; $SD= .87$) almost frequently seek for knowledge.

In line, respondents from Hong Kong ($M= 3.02$; $SD= .97$) occasionally share knowledge. Germans ($M= 2.84$; $SD= 1.15$) indicated to rather rarely provide knowledge for co-workers via the platform, while American respondents ($M= 3.35$; $SD= 1.03$) more frequently distribute knowledge.

Third, for the construct performance expectancy ($F= 8.95$; $p < .001$) and innovativeness ($F= 6.12$; $p < .01$) US respondents differed from respondents of Hong Kong and Germany, who formed one group. Both countries had a lower mean value compared to respondents from the United States.

For performance expectancy Germans ($M= 3.41$; $SD= .81$) as well as respondents from Hong Kong ($M= 3.59$; $SD= .60$) nearly agreed, while respondents from the United States ($M= 3.97$; $SD= .75$) agreed with the fact that using the system increase the job performance.

For innovativeness US respondents (M= 3.99; SD= .69) agreed that they are willing to accept and open for new technologies. However, participants from Germany (M= 3.61; SD= .68) as well as Hong Kong (M= 3.55; SD= .59) just almost agreed. All results are presented in Table three.

Table 3: *Overview of the ANOVA outcomes*

Construct	Group	Mean (M)	Standard deviation (SD)	F	Harmonic Mean of Tukey
Trust in Colleagues	Germany	3.33	.59	2.84	3.33
	Hong Kong	3.49	.46		3.49
	USA	3.53	.58		3.53
Organizational Climate	Germany	3.49	.81	.08	3.49
	Hong Kong	3.52	.71		3.52
	USA	3.54	.73		3.54
Subjective Norm	Germany	3.04	.82	6.13**	3.04
	Hong Kong	3.41	.51		3.39
	USA	3.39	.79		3.41
Network externality	Germany	2.36	.86	17.55***	2.36
	Hong Kong	2.99	.75		2.99
	USA	3.06	.89		3.06
Performance Expectancy	Germany	3.41	.81	8.95***	3.41
	Hong Kong	3.59	.60		3.59
	USA	3.97	.75		3.97
Effort Expectancy	Germany	3.27	.92	.84	3.27
	Hong Kong	3.43	.60		3.40
	USA	3.40	.86		3.43
Innovativeness	Germany	3.61	.68	6.12**	3.55
	Hong Kong	3.55	.59		3.61
	USA	3.99	.69		4.00
Technical Support	Germany	3.08	.84	.88	3.08
	Hong Kong	3.25	.48		3.13
	USA	3.13	.80		3.25
Organizational Identification	Germany	3.39	.93	5.51**	3.39
	Hong Kong	3.55	.63		3.55
	USA	3.87	.68		3.87
Get Knowledge	Germany	3.17	.79	5.69**	3.17
	Hong Kong	3.38	.66		3.38
	USA	3.61	.87		3.61
Share Knowledge	Germany	2.84	1.15	3.66*	2.84
	Hong Kong	3.02	.97		3.02
	USA	3.35	1.03		3.35

*p < 0.05. **p < 0.01. ***p < 0.001.

4.2.2 Difference for the group of non-user

Behavioral intention was measured by a 5-point probability scale, ranging from ‘(1) not at all probable to (2) slightly probable, (3) moderately probable, (4) very probable and (5) completely probable’. The remaining constructs were measured by a 5-point likert scale, ranging from ‘(1) strongly disagree to (2) disagree, (3) neither agree nor disagree, (4) agree and (5) strongly agree’.

Non-users from the different countries also significantly differ from each other regarding the mean values of following constructs: ‘trust in colleagues’, ‘subjective norm’, ‘performance expectancy’,

'innovativeness', 'network externality', 'organizational identification' and 'behavioral intention to use'. Four differences became obvious, which are outlined in the following.

First, the mean value of the constructs subjective norm ($F= 21.78$; $p < .001$) and performance expectancy ($F= 18.55$; $p < .001$) is lower for German respondents compared to participants from Hong Kong and the United States of America.

Regarding the construct subjective norm Germans ($M= 2.40$; $SD= .92$) were somewhat neutral or actually disagreed a little, while the respondents from Hong Kong ($M= 3.21$; $SD= .50$) and the United States ($M= 3.00$; $SD= .48$) were quiet neutral about third party influences.

Concerning the construct performance expectancy Germans ($M= 2.60$; $SD= .94$) disagreed a little about the fact that the system helps to attain gains in job performance. Respondents from Hong Kong ($M= 3.39$; $SD= .64$) and the United states ($M= 3.21$; $SD= .76$) were neutral.

Second, regarding the construct innovativeness ($F= 3.80$; $p < .05$) Germans differed from US respondents. However, participants from Hong Kong ($M= 3.37$, $SD= .50$) had a similar mean to both groups. Whereas Germans ($M= 3.32$; $SD= .84$) were neutral concerning their self-evaluation to be an early adopter, the mean value of respondents from the United States ($M= 3.73$; $SD= .57$) showed that the average agreement on personal innovativeness was much higher.

Third, for organizational identification ($F= 4.79$; $p < .01$) and behavioral intention to use ($F= 10.79$; $p < .001$) American respondents differed from respondents of Hong Kong and Germany, who form one group. Respondents of Germany and Hong Kong had a lower mean value compared to US respondents.

For the construct organizational identification American respondents ($M= 3.91$; $SD= .62$) agreed on a high feeling of belongingness to that certain organization, whereas employees from Germany ($M= 3.50$; $SD= .86$) and Hong Kong ($M= 3.34$; $SD= .55$) just slightly agreed.

For the construct behavioral intention to use American respondents ($M= 3.23$; $SD= 1.14$) indicated it will be moderately probable that they will start delivering knowledge or seeking knowledge via the platform. For Germans ($M= 2.46$; $SD= .92$) and participants from Hong Kong ($M= 2.78$; $SD= .52$) it is rather slightly probable.

Fourth, the construct network externality ($F= 15.84$; $p < .001$) indicated that participants from Hong Kong differ significantly from Germans and American respondents. Participants from Germany ($M= 2.39$; $SD= .82$) and the United States ($M= 2.68$; $SD= .62$) disagree, whereas Hong Kong ($M= 3.08$; $SD= .57$) neither agree nor disagree, that the system had reached a sufficient number of users.

The mean values of the construct trust in colleagues ($F= 5.72$; $p < .01$) differed significantly according to the ANOVA, but Tukey`s test did not calculated differences. Participants from Germany ($M= 3.05$; $SD= .61$) neither agreed to have trust in their colleagues nor did they disagree. The

respondents from Hong Kong (M= 3.31; SD= .45) and the United States (M= 3.33; SD= .63) rarely agreed to trust co-workers. All results are presented in table four.

Table 4: *Overview of the ANOVA outcomes*

Construct	Group	Mean (M)	Standard deviation (SD)	F	Harmonic Mean of Tukey
Trust in Colleagues	Germany	3.05	.61	5.72**	3.05
	Hong Kong	3.31	.45		3.31
	USA	3.33	.63		3.33
Organizational Climate	Germany	3.51	.78	1.57	3.30
	Hong Kong	3.30	.55		3.44
	USA	3.44	.82		3.51
Subjective Norm	Germany	2.40	.92	21.78***	2.40
	Hong Kong	3.21	.50		2.98
	USA	3.00	.48		3.21
Network externality	Germany	2.39	.82	15.84***	2.39
	Hong Kong	3.08	.57		2.68
	USA	2.68	.62		3.08
Performance Expectancy	Germany	2.60	.94	18.55***	2.60
	Hong Kong	3.39	.64		3.21
	USA	3.21	.76		3.39
Effort Expectancy	Germany	3.10	.84	.40	3.10
	Hong Kong	3.20	.50		3.17
	USA	3.17	.57		3.20
Innovativeness	Germany	3.32	.84	3.80*	3.32
	Hong Kong	3.37	.50		3.37
	USA	3.73	.57		3.73
Technical Support	Germany	2.91	.83	2.32	2.91
	Hong Kong	3.17	.67		3.07
	USA	3.06	.77		3.17
Organizational Identification	Germany	3.50	.86	4.79**	3.34
	Hong Kong	3.34	.55		3.50
	USA	3.91	.62		3.91
Behavioral Intention to Use	Germany	2.46	.92	10.79***	2.46
	Hong Kong	2.78	.52		2.78
	USA	3.23	1.14		3.23

*p < 0.05. **p < 0.01. ***p < 0.001.

4.3 Impact of the country differences on the sample

The findings indicated significant differences between respondents from the three countries. Therefore, the decision was made to split the dataset by location.

In total 89 (16%) participants from Hong Kong, 72 (13%) participants from the United States and 399 (71%) participants from Germany participated. The high number of German respondents could be explained by the fact that the organization is headquartered in Germany and most employees work there. Thus, the further analysis was solely based on the German group of participants, because trustworthy results could not be guaranteed for the group of respondents from Hong Kong and the United States of America due to the small sample size.

In the following, the German sample will be specified in more detail.

4.3.1 Group of German actual user

The greater number of respondents was male (n= 106, 65 %) compared to females (n= 57, 35 %). The average age of the respondents was 39 years (SD= 11 years). Further, the distribution among the levels of education was as followed: 19 % (n= 31) had a high school degree, 27 % (n= 44) had a vocational school degree, 20 % (n= 32) had a Bachelor diploma, 21 % (n= 34) had a Master diploma, 1 % had a Ph.D. (n= 1) and 13 % (n= 21) choose other. Furthermore, most participants had no managerial responsibility (n= 109, 67 %) compared to those with managerial responsibility (n= 54, 33 %). The distribution regarding the work experience lies between a few months, the shortest membership at the organization, and 50 years the longest membership at the organization (mean= 11 years, SD= 10 years).

Actual users logged into IBM Connections with the purpose of knowledge exchange several times a day (n= 29, 18 %), several times a week (n= 66, 41 %), several times a month (n= 53, 32 %) or only several times a year (n= 15, 9 %).

Presented in table five is the complete demographic information of the sample.

Table 5: *Demographic Information of Actual User from Germany*

Demographic construct	Frequency	Percent
Gender		
Male	106	65
Female	57	35
Job Position		
With managerial responsibility	54	33
Without managerial responsibility	109	67
Level of education		
High School	31	19
Vocational School	44	27
Bachelor	32	19
Master	34	21
Ph. D./Doctorate	1	1
Other	21	13
Usage Frequency		
a day	29	18
a week	66	41
a month	53	32
a year	15	9
Total	163	100

4.3.2 Group of German non-user

More participants were also male (n= 140, 59 %) compared to females (n= 96, 41 %). The mean age was 39 years (SD= 12 years) and the distribution among the levels of education was as followed: 34 % (n= 81) had a high school degree, 27 % (n= 63) had a vocational school degree, 13 % (n= 30) had a Bachelor diploma, 14 % (n= 34) had a Master diploma, 1 % had a Ph.D (n= 1) and 11 % (n= 27) choose

other. Most participants had no managerial responsibility (n= 169, 72 %) compared to those with managerial responsibility (n= 67, 28 %). Among work experience respondents were distributed between a few months and 43 years (mean = 9 years, SD= 9 years).

Table six shows the complete demographic information of the sample.

Table 6: *Demographic Information of Non-User from Germany*

Demographic construct	Frequency	Percent
Gender		
Male	140	59
Female	96	41
Job Position		
With managerial responsibility	67	28
Without managerial responsibility	169	72
Level of education		
High School	81	35
Vocational School	63	27
Bachelor	30	13
Master	34	14
Ph. D./Doctorate	1	.4
Other	27	11
Total	236	100

4.4 Variability among the observed variables

Again, a principal component analysis was conducted with the new sample. Hereby, it is checked if the items are really distributed among the assumed constructs. A criterion of .50 was chosen for extracting factors. The description of the abbreviations used in this section can be found in appendix IV.

4.4.1 Factor structure for the group of actual user

The results indicate that all items split among 11 components. The Kaiser-Meyer-Olkin Measure is .755, which is above the criterion of .60.

The items of ability and integrity load on one component and were therefore merged into 'trust in colleagues'. The same applies to the items of perceived innovative and knowledge-exchange climate, which were merged into 'organizational climate'. All remaining items loaded on the supposed constructs.

The constructs 'extrinsic benefit', 'intrinsic benefit', 'benevolence based trust' and the items of 'task-system fit' were dropped from further analysis, because they had cross-loadings on several other factors. Table seven shows the factor loadings after rotation.

Table 7: *Overview of the factor loadings after rotation (varimax)*

Item	Trust in col-leagues	Organi-zational Climate	Subjec-tive Norm	Network external-ity	Effort Expect-ancy	Techni-cal Support	Perfor-mance Expect-ancy	Innova-tiveness	Organi-zational Identifi-cation	Share Know-ledge	Get Know-ledge
	(AT/ IT)	*(IC/ KE)*	*(SN)*	*(NE)*	*(EE)*	*(FO)*	*(PE)*	*(PI)*	*(AC)*	*(AU3&4)*	(AU1&2)
AT3	.84										
IT2	.83										
AT1	.83										
IT1	.81										
IT3	.81										
AT2	.79										
IC3		.87									
IC1		.86									
IC2		.86									
KE2		.72									
KE3		.88									
KE1		.51									
SN1			.88								
SN2			.87								
SN3			.86								
NE3				.87							
NE1				.84							
NE2				.71							
EE2					.89						
EE3					.88						
EE1					.79						
FO1						.90					
FO2						.86					
FO3						.80					
PE2							.84				
PE3							.81				
PE1							.72				
PI1								.91			
PI3								.86			
PI2								.81			
AC3									.88		
AC1									.88		
AC2									.53		
AU4										.94	
AU3										.89	
AU2											.87
AU1											.87

4.4.2 Factor structure for the group of non-user

The results indicate that all items for the group of non-user split among 10 components. The Kaiser-Meyer-Olkin Measure was .859, which is also above the criterion of .60.

The items of ability and integrity load as well on one component and were therefore merged into 'trust in colleagues'. Additionally, the items of perceived innovative and knowledge-exchange climate were merged into 'organizational climate'.

Sharing and getting knowledge was no longer disconnected, but loaded on one component, which was labeled 'behavioral intention to use'. All remaining items loaded, as for the group of actual user, on the supposed constructs.

The same set of constructs as in the group of actual user was dropped from analysis, because they had cross-loadings on several other factors. Table eight shows the factor loadings after rotation.

Table 8: *Overview of the factor loadings after rotation (varimax)*

Item	Trust in col-leagues *(AT/ IT)*	Organi-zational Climate *(IC/ KE)*	Behav-ioral Intention to Use *(BI)*	Subjec-tive Norm *(SN)*	Effort Expect-ancy *(EE)*	Innova-tiveness *(PI)*	Perfor-mance Expecta ncy *(PE)*	Network external-ity *(NE)*	Techni-cal Support *(FO)*	Organi-zational Identifi-cation *(AC)*
IT3	.86									
IT1	.85									
AT3	.84									
AT1	.84									
IT2	.83									
AT2	.80									
KE3		.85								
IC1		.82								
IC3		.79								
KE1		.77								
KE2		.77								
IC2		.71								
BI3			.84							
BI1			.84							
BI2			.82							
BI4			.82							
SN1				.90						
SN3				.89						
SN2				.89						
EE2					.90					
EE3					.90					
EE1					.86					
PI3						.91				
PI1						.90				
PI2						.87				
PE3							.87			
PE2							.87			
PE1							.71			
NE3								.81		
NE1								.80		
NE2								.76		
FO1									.84	
FO2									.83	
FO3									.79	
AC1										.85
AC3										.83
AC2										.69

4.5 Impact of the factor analysis on the hypothesis

Based on the factor-analysis-results hypothesis needed to be excluded (Table 9) or altered (Table 10).

Table 9: *Overview of the removed researched hypotheses*

Construct		Hypothesis	Removed
Task-System Fit	H4c	Greater task-system fit positively influences the behavioral intention to get knowledge through the E2.0.	Removed
	H4d	Greater task-system fit positively influences the behavioral intention to share knowledge through the E2.0.	Removed
Extrinsic Benefit	H6a	Greater extrinsic benefit positively influences the behavioral intention to get knowledge through the E2.0.	Removed
	H6b	Greater extrinsic benefit positively influences the behavioral intention to share knowledge through the E2.0.	Removed
Intrinsic Benefit	H6c	Greater intrinsic benefit positively influences the behavioral intention to get knowledge through the E2.0.	Removed
	H6d	Greater intrinsic benefit positively influences the behavioral intention to share knowledge through the E2.0.	Removed
Benevolence-based	H7c	Greater evaluated benevolence positively influences the behavioral intention to get knowledge through the E2.0.	Removed
	H7d	Greater evaluated benevolence positively influences the behavioral intention to share knowledge through the E2.0.	Removed

Table 10: *Overview of the adjusted researched hypotheses*

Construct		Old Hypothesis	Adjusted	New Hypothesis
Knowledge -Exchange Climate	H5a	A greater shared knowledge-exchange climate positively influences the behavioral intention to get knowledge through the E2.0.	Merged to H5 Organi-zational Climate	A greater organizational climate positively influences the behavioral intention use the E2.0 as a tool for knowledge exchange.
	H5b	A greater shared knowledge-exchange climate positively influences the behavioral intention to share knowledge through the E2.0.		
Innovative Climate	H5c	A greater innovative climate positively influences the behavioral intention to get knowledge through the E2.0.		
	H5d	A greater innovative climate positively influences the behavioral intention to share knowledge through the E2.0.		
Ability-based	H7a	Greater evaluated ability positively influences the behavioral intention to get knowledge through the E2.0.	Merged to H7 Trust in Collea-gues	Greater trust in colleagues positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange.
	H7b	Greater evaluated ability positively influences the behavioral intention to share knowledge through the E2.0.		
Integrity-based	H7e	Greater evaluated integrity positively influences the behavioral intention to get knowledge through the E2.0.		
	H7f	Greater evaluated integrity positively influences the behavioral intention to share knowledge through the E2.0.		

4.6 Reliability test

The reliability of the remaining constructs were calculated afterwards in order to guarantee that the results are free from measuring errors and that each item indeed reflects the construct it belongs to. A Cronbach's alpha of at least .70 or higher was accepted as reliable. Using a lower alpha would threaten the internal validity. As the results show, all constructs are above .82, except organizational identification of actual user with an alpha of .74, which indicates that all constructs have an acceptable reliability. Table 11 presents the internal reliability scores of the constructs for actual user and table 12 for the group of non-user.

4.6.1 Reliability of the constructs for actual user

The items of perceived ability and integrity of colleagues were merged into the construct trust in colleagues. As we can see the new construct reached an alpha score of .91, which supports that the reliability of the construct is highly acceptable. The same applies to the merged construct organizational climate, with an alpha score of .89.

Table 11: *Reliability Scores for the Different Constructs of the Study*

Constructs	Cronbach's alpha	Number of items	Deleted items
Performance Expectancy	.82	3	0
Effort Expectancy	.88	3	0
Subjective Norm	.94	3	0
Perceived Network Externality	.86	3	0
Provided Technical Support	.85	3	0
Organizational Climate	.89	6	0
Trust in Colleagues	.91	6	0
Innovativeness	.85	3	0
Organizational Identification	.74	3	0
Share Knowledge	.92	2	0
Get Knowledge	.85	2	0

4.6.2 Reliability of the constructs for non-user

The merged constructs for the group of non-user (trust in colleagues and organizational climate) show as well a high level of internal coherence. The construct trust in colleagues reached an alpha score of .95 and the merged construct organizational climate an alpha score of .90. The construct behavioral intention to use the system, composed of the intention to share and get knowledge, depicts an alpha of .91. Hence, the reliability of the constructs is highly acceptable.

Table 12: *Reliability Scores for the Different Constructs of the Study*

Constructs	Cronbach's alpha	Number of items	Deleted items
Performance Expectancy	.93	3	0
Effort Expectancy	.93	3	0
Subjective Norm	.98	3	0
Perceived Network Externality	.87	3	0
Provided Technical Support	.86	3	0
Organizational Climate	.90	6	0
Trust in Colleagues	.95	6	0
Innovativeness	.89	3	0
Organizational Identification	.82	3	0
Behavioral Intention to Use	.91	4	0

4.7 Hypotheses testing

In the next step a hierarchical multiple regression analysis was carried out to determine the effects of the different constructs on (1) getting knowledge by actual users, (2) sharing knowledge by actual users and (3) the behavioral intention of non-users. Values were rounded off to two decimal places throughout. For all results multicollinearity was not a problem, because the variance inflation factor (VIF) is below the criterion of five. Hence, none of the predictors has a strong linear relationship with the other predictors (see Table 13, 14 and 18).

The UTAUT-variables (performance expectancy, effort expectancy, subjective norm, perceived network externality, provided technical support) were entered in the first block, because they are regarded as critical predictors of the dependent variable. In the second block, the added factors (organizational climate, trust in colleagues, innovativeness, organizational identification), which are also hypothesized to influence the dependent variable, were entered. The demographic variables (gender and age) were entered in the third block in order to check in how far they enhance the prediction of the dependent variable.

4.7.1 The influence of factors on getting knowledge

The entrance of the variables in the first block resulted in an adjusted R^2 of .19 ($F_{5, 157} = 8.80$; $p < .001$). Hence, 19 % of the variance for people's actual usage to get knowledge via the E2.0 could be explained by the UTAUT predictors.

Through the analysis it became obvious, that two hypotheses got supported. First, the hypothesis that greater performance expectancy ($b = .33$, $p < .001$) positively influences the actual usage of E2.0 to get knowledge was confirmed. Second, the hypothesis that greater subjective norm ($b = .20$, $p < .05$) positively influences the actual usage of E2.0 to get knowledge was approved.

By adding further variables in the second block, the value of the adjusted R^2 rose to .20 ($F_{9, 153} = 5.40$; $p < .001$). Thus, 20 % could be explained when adding factors (organizational climate, trust in colleagues, innovativeness, organizational identification) to the UTAUT-variables. Thereby, the significance of the UTAUT-variables was not altered. Greater performance expectancy (b = .33, p < .001) and greater subjective norm (b = .17, p < .05) still influence actual usage of E2.0 to get knowledge.

The entrance of the demographic variables in the third block lowered the adjusted R^2 to .19 ($F_{11, 151} = 4.44$; $p < .001$). None of the demographic variables (gender or age) did significantly predict the dependent variable. Only greater performance expectancy (b = .34, p < .01) still influences the actual usage of E2.0 to get knowledge.

Shown in table 13 are the unstandardized and the standardized coefficients of the different variables hypothesized to influence getting knowledge by actual user. The significance of the variable is denoted by an asterisk with a footnote to indicate the significance level being used.

Table 13: *Unstandardized and the Standardized Coefficients of the Different Variables Hypothesized to Influence the Actual Use of getting knowledge from IBM Connections*

Models	B	SE B	β	VIF	R^2 (ΔR^2)
Step 1					
Constant	1.66	.33			
Performance Expectancy	.32	.08	.33***	1.24	.22 (.19)
Effort Expectancy	-.01	.07	-.02	1.23	
Subjective Norm	.19	.08	.20*	1.36	
Perceived Network externality	.07	.07	.08	1.26	
Provided technical support	-.10	.07	-.10	1.09	
Step 2					
Constant	1.64	.53			
Performance Expectancy	.32	.08	.33***	1.29	
Effort Expectancy	-.03	.07	-.03	1.28	
Subjective Norm	.16	.08	.17*	1.44	
Perceived Network externality	.03	.08	.03	1.43	
Provided technical support	-.10	.07	-.11	1.16	
Organizational climate	.13	.09	.13	1.51	.24 (.20)
Trust in colleagues	.03	.10	.02	1.17	
Innovativeness	.08	.09	.07	1.13	
Organizational Identification	-.14	.08	-.13	1.18	
Step 3					
Constant	-6.65	10.50			
Performance Expectancy	.33	.08	.34***	1.35	
Effort Expectancy	-.02	.07	-.03	1.29	
Subjective Norm	.16	.08	.16	1.45	
Perceived Network externality	.03	.08	.03	1.47	
Provided technical support	-.10	.07	-.10	1.17	
Organizational climate	.13	.09	.13	1.51	
Trust in colleagues	.02	.10	.01	1.18	
Innovativeness	.08	.09	.07	1.16	
Organizational Identification	-.14	.08	-.13	1.20	

Gender (Male)	-.01	.12	-.01	1.12	.24 (.19)
Age	.00	.01	.06	1.05	

*p < 0.05. **p < 0.01. ***p < 0.001.

4.7.2 The influence of factors on sharing knowledge

The first block resulted in an adjusted R^2 of .15 ($F_{5, 157} = 6.66$; $p < .001$). This means that 15 % of the variance for people's actual usage to share knowledge could be explained by the UTAUT-predictors.

The findings led to the acceptance of one hypotheses and significance of three. First, the hypothesis that greater performance expectancy (b = .35, p < .001) positively influences the actual usage of E2.0 to share knowledge was confirmed. Second, lower effort expectancy (b = -.21, p < .01) significantly negative influences the actual usage of E2.0 to share knowledge. Third, greater perceived network externality (b = -.21, p < .05) significantly negative influences the actual usage of E2.0 to share knowledge.

In the second block, the value of the adjusted R^2 lowered to .14 ($F_{9, 153} = 4.04$; $p < .001$). Thus, 14 % could be explained when adding factors (organizational climate, trust in colleagues, innovativeness, organizational identification) to the UTAUT-variables. Thereby, the significance of the UTAUT-variables was not altered. Greater performance expectancy (b = .36, p < .001), effort expectancy (b = -.22, p < .01) and perceived network externality (b = -.23, p < .01) are still influencing sharing knowledge via the E2.0.

In the third block the adjusted R^2 is still .14 ($F_{11, 151} = 3.45$; $p < .001$). Consequently, 14 % of the variance in the dependent variable could be explained by adding demographics. As well as the added constructs (organizational climate, trust in colleagues, innovativeness, organizational identification) did the demographic variables (gender and age) not significantly predict actual usage of E2.0 to share knowledge. Only greater performance expectancy (b = .38, p < .01), effort expectancy (b = -.23, p < .01) and network externality (b = -.25, p < .01) are significantly influencing sharing knowledge.

Shown in table 14 are the outcomes for sharing knowledge by actual user. The significance of the variable is denoted by an asterisk with a footnote to indicate the significance level being used.

Table 14: *Unstandardized and the Standardized Coefficients of the Different Variables Hypothesized to Influence the Actual Use of sharing knowledge to IBM Connections*

Models	B	SE B	β	VIF	R^2 (ΔR^2)
Step 1					
Constant	1.69	.49			
Performance Expectancy	.50	.12	.35***	1.24	.18 (.15)
Effort Expectancy	-.27	.10	-.21**	1.23	
Subjective Norm	.20	.12	.15	1.36	
Perceived Network externality	-.27	.11	-.21*	1.26	
Provided technical support	.12	.10	.09	1.09	

Step 2					
Constant	2.45	.79			
Performance Expectancy	.51	.12	.36***	1.29	
Effort Expectancy	-.27	.10	-.22**	1.28	
Subjective Norm	.21	.12	.15	1.44	
Perceived Network externality	-.30	.12	-.23**	1.43	
Provided technical support	.13	.11	.09	1.16	
Organizational climate	.10	.13	.07	1.51	.19 (.14)
Trust in colleagues	-.21	.15	-.11	1.17	
Innovativeness	-.00	.13	-.00	1.13	
Organizational Identification	-.11	.12	-.07	1.18	
Step 3					
Constant	8.03	15.76			
Performance Expectancy	.54	.12	.38***	1.35	
Effort Expectancy	-.29	.10	-.23**	1.29	
Subjective Norm	.22	.12	.16	1.45	
Perceived Network externality	-.33	.12	-.25**	1.47	
Provided technical support	.13	.11	.09	1.17	
Organizational climate	.11	.13	.07	1.51	
Trust in colleagues	-.20	.15	-.11	1.18	
Innovativeness	-.03	.13	.02	1.16	
Organizational Identification	-.12	.13	-.08	1.20	
Gender (Male)	-.24	.19	-.10	1.12	.20 (.14)
Age	-.00	.01	-.03	1.05	

*p < 0.05. **p < 0.01. ***p < 0.001.

4.7.3 Additional relationships for actual user

The following hypotheses are tested as well: First, it was hypothesized that effort expectancy would positively influence performance expectancy. Second, it was hypothesized that personal innovativeness would positively influence effort expectancy. Third, it was hypothesized that personal innovativeness would positively influence performance expectancy. Results of the regression analysis are presented in table 15, 16 and 17.

The first assumption resulted in an adjusted R^2 of .09 (b = .31, p < .001). Hence, 9 % of the variance in the performance expectancy could be explained by effort expectancy. These findings led to the acceptance of the hypothesis that lower effort expectancy positively influences the performance expectancy for actual user.

Table 15: *Unstandardized and the Standardized Coefficients of the Different Variables Hypothesized to Influence Performance Expectancy*

Models	B	SE B	β
Effort Expectancy	.27	.07	.31***

*p < 0.05. **p < 0.01. ***p < 0.001.

The second assumption resulted in an adjusted R^2 of .00 (b = -.08, p > .05). The variance of effort expectancy could not be explained by personal innovativeness.

Table 16: *Unstandardized and the Standardized Coefficients of the Different Variables Hypothesized to Influence Effort Expectancy*

Models	B	SE B	β
Personal innovativeness	-.11	.11	-.08

*p < 0.05. **p < 0.01. ***p < 0.001.

The third assumption resulted in an adjusted R^2 of .01 (b = .14, p > .05). The variance of performance expectancy could not be explained by personal innovativeness, too.

Table 17: *Unstandardized and the Standardized Coefficients of the Different Variables Hypothesized to Influence Performance Expectancy*

Models	B	SE B	β
Personal innovativeness	.16	.09	.14

*p < 0.05. **p < 0.01. ***p < 0.001.

4.7.4 The influence of factors on behavioral intention to use

The UTAUT-variables in the first block resulted in an adjusted R^2 of .36 ($F_{5, 230}$ = 27.42; p < .001). Hence, 36 % of the variance for people's behavioral intention to use E2.0 could be explained by the UTAUT.

These findings led to acceptance of three hypotheses. First, the hypothesis 1a-b, that greater performance expectancy (b = .45, p > .001) positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange was confirmed. Second, the hypothesis 3a-b, that greater subjective norm (b = .13, p > .05) positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange was verified. Third, the hypothesis 4a-b, that greater organizationally provided technical support (b = .18, p > .01) positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange was approved.

In the second block, the value of the adjusted R^2 rose to .37 ($F_{9, 226}$ = 15.98; p < .001). Thus, 37 % of people's behavioral intention to use the E2.0 could be explained when adding factors (organizational climate, trust in colleagues, innovativeness, organizational identification) to the UTAUT-variables. However, adding predictors in the second block comprehended the significance of the construct subjective norm. Greater performance expectancy (b = .42, p > .001) and organizationally provided technical support (b = .15, p > .05) still influence the behavioral intention to use the E2.0 as a tool for knowledge exchange. Further, none of the added constructs did significantly predict the behavioral intention to use the E2.0 as a tool for knowledge exchange.

Adding demographics in the third block led the adjusted R^2 rise to .38 ($F_{11, 224}$ = 14.24; p < .001). Consequently, 38 % of the variance for people's behavioral intention to use the E2.0 could be explained when adding demographical information. Only one of the demographic variables, which is age (b = -.12, p > .05), significantly influences the behavioral intention to use the E2.0 as a tool for knowledge exchange. Therefore, it can be assumed that younger employees have a higher intention to use the

system. Hypothesis 9 c-d can be supported, while the hypothesis 9a-b has to be rejected. Greater performance expectancy (b = .41, p > .001) and organizationally provided technical support (b = .14, p > .05) still influence the behavioral intention to use the E2.0 as a tool for knowledge exchange.

For the effect of the two UTAUT-variables effort expectancy and perceived network externality statistical support was lacking, which leads to the rejection of hypothesis 2a-b and 3c-d. Further, the outcomes led to the rejection of following hypothesis: 5, 7, 8c-d, because none of the added variables (organizational climate, trust in colleagues, innovativeness, organizational identification) was significant. Table 18 shows the outcomes for non-users behavioral intention to use E2.0. The significance of the variable is denoted by an asterisk with a footnote to indicate the significance level being used.

Table 18: *Unstandardized and the Standardized Coefficients of the Different Variables Hypothesized to Influence Non-Users Behavioral Intention to Use the E2.0*

Models	B	SE B	β	VIF	R^2 (ΔR^2)
Step 1					
Constant	.31	.23			
Performance Expectancy	.44	.06	.45***	1.34	.37 (.36)
Effort Expectancy	.04	.07	.03	1.28	
Subjective Norm	.13	.06	.13*	1.42	
Perceived Network externality	.00	.07	.00	1.49	
Provided technical support	.20	.07	.18**	1.29	
Step 2					
Constant	-.22	.34			
Performance Expectancy	.41	.06	.42***	1.42	
Effort Expectancy	.01	.07	.01	1.33	
Subjective Norm	.12	.06	.12	1.51	
Perceived Network externality	-.03	.07	-.02	1.59	
Provided technical support	.16	.07	.15*	1.38	
Organizational climate	.01	.07	.01	1.42	.39 (.37)
Trust in colleagues	.17	.10	.11	1.72	
Innovativeness	.04	.06	.04	1.14	
Organizational Identification	.06	.07	.06	1.41	
Step 3					
Constant	17.59	8.02			
Performance Expectancy	.40	.06	.41***	1.44	
Effort Expectancy	.06	.07	.05	1.42	
Subjective Norm	.09	.06	.09	1.53	
Perceived Network externality	-.02	.07	-.02	1.61	
Provided technical support	.16	.07	.14*	1.39	
Organizational climate	.02	.07	.02	1.43	
Trust in colleagues	.18	.10	.12	1.74	
Innovativeness	.02	.06	.02	1.23	
Organizational Identification	.05	.07	.05	1.45	
Gender (Male)	.18	.10	.10	1.12	.41 (.38)
Age	-.01	.00	-.12*	1.11	

*p < 0.05. **p < 0.01. ***p < 0.001.

4.7.5 Additional relationships for non-user

The same set of additional hypotheses, which were tested for actual users, were calculated for non-user, too: First, it was hypothesized that effort expectancy would positively influence performance expectancy. Second, it was hypothesized that personal innovativeness would positively influence effort expectancy. Third, it was hypothesized that personal innovativeness would positively influence performance expectancy. Results of the regression analysis are presented in table 19, 20, 21.

The first hypothesis resulted in an adjusted R^2 of .10 (b = .33, p > .001). Hence, 10 % of the variance in the performance expectancy could be explained by effort expectancy. These findings led to the acceptance of the hypothesis 2c, that lower effort expectancy is positively related to performance expectancy for non-user.

Table 19: *Unstandardized and the Standardized Coefficients of the Different Variables Hypothesized to Influence Performance Expectancy*

Models	B	SE B	β
Effort Expectancy	.37	.07	.33***

*p < 0.05. **p < 0.01. ***p < 0.001.

The second assumption resulted in an adjusted R^2 of -.00 (b = .05, p > .05). The hypothesis 8a, which assumed the influence of innovativeness on effort expectancy, was rejected.

Table 20: *Unstandardized and the Standardized Coefficients of the Different Variables Hypothesized to Influence Effort Expectancy*

Models	B	SE B	β
Personal innovativeness	.05	.07	.05

*p < 0.05. **p < 0.01. ***p < 0.001.

The third assumption resulted in an adjusted R^2 of .00 (b = .07, p > .05). The variance in performance expectancy could not be explained by innovativeness, too. Thus, the hypothesis 8b, assuming the influence of innovativeness on performance expectancy, was rejected.

Table 21: *Unstandardized and the Standardized Coefficients of the Different Variables Hypothesized to Influence Performance Expectancy*

Models	B	SE B	β
Personal innovativeness	.08	.07	.07

*p < 0.05. **p < 0.01. ***p < 0.001.

4.7.6 Tested Model

Due to the research, evidence was found that only a few of the on theory based constructs definitely predict the adoption of E2.0 as a tool for knowledge exchange among employees of a German logistics company. The non-significant and statistical significant paths are presented in figure five. Further, table 22 gives an overview of all accepted and rejected hypotheses.

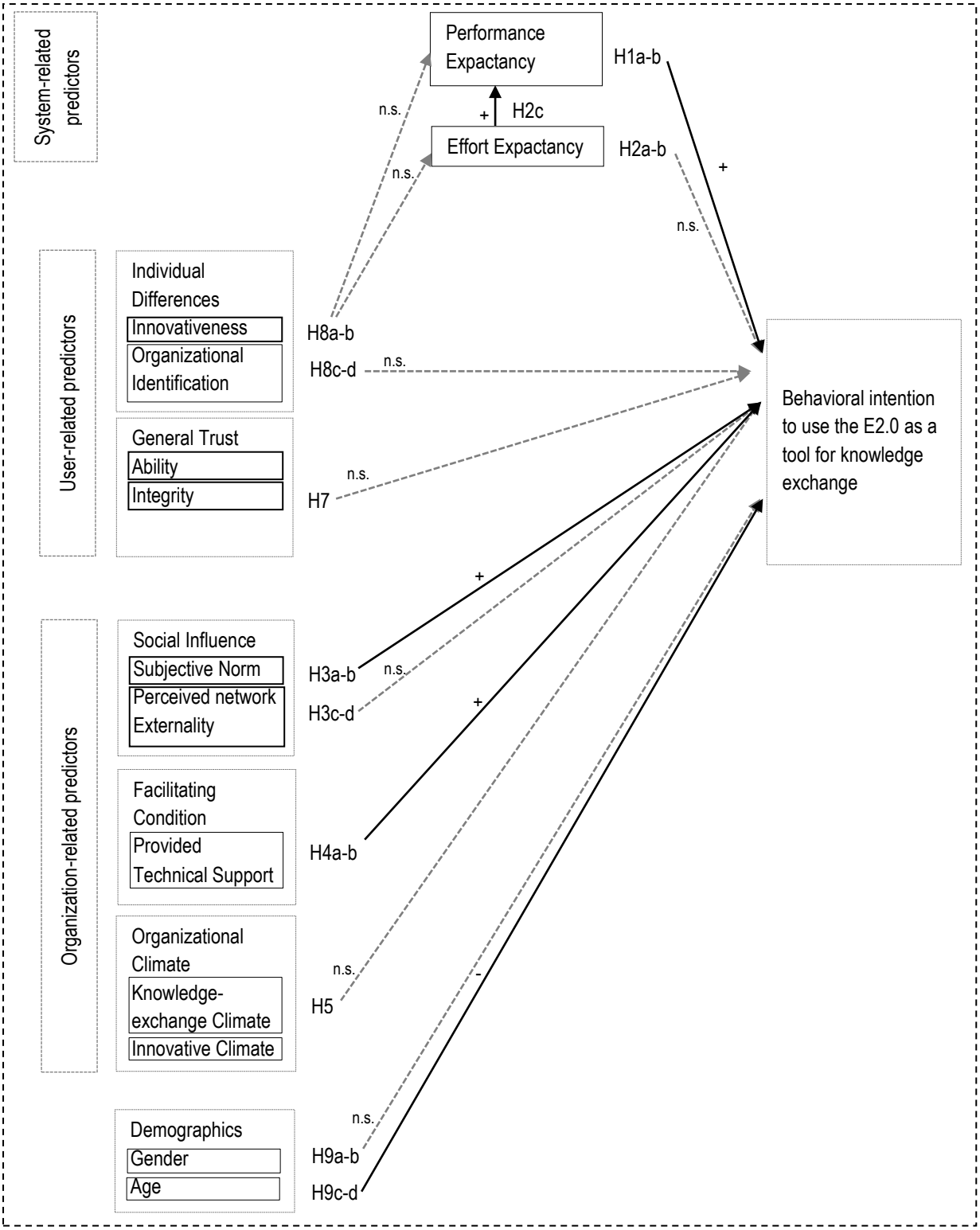

Figure 5: Tested Model

Table 22: *Overview of accepted and rejected hypotheses for the group of non-user*

Construct		Hypothesis	Result
Performance Expectancy			
	H1a-b:	Greater performance expectancy positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange.	Supported
Effort Expectancy			
	H2a-b:	Lower effort expectancy positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange.	Rejected
	H2c:	Lower effort expectancy positively influences performance expectancy.	Supported
Social Influence			
Subjective Norm	H3a-b:	Greater subjective norm positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange.	Supported
Network Externality	H3c-d:	Greater perceived network externality positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange.	Rejected
Facilitating Conditions			
Provided Technical Support	H4a-b:	Greater organizationally provided technical support positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange.	Supported
Organizational Climate			
	H5:	A greater organizational climate positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange.	Rejected
Trust in colleagues			
	H7:	Greater trust in colleagues positively influences the behavioral intention to get knowledge through the E2.0.	Rejected
Individual Differences			
Innovativeness	H8a:	Greater innovativeness positively influences effort expectancy.	
	H8b:	Greater innovativeness positively influences performance expectancy.	Rejected
Organizational Identification	H8c-d:	Greater organizational identification positively influences the behavioral intention to use the E2.0 as a tool for knowledge exchange.	Rejected
Demographics			
Gender	H9a-b:	Does gender plays a significant role in influence the behavioral intention to use the E2.0 as a tool for knowledge exchange.	Rejected
Age	H9c-d:	Younger employees have a higher intention to use the E2.0 as a tool for knowledge exchange.	Supported

5. Discussion

This study was conducted to investigate into factors influencing the adoption of E2.0 as a tool for knowledge exchange among employees of a German logistics company. Using the constructs of the "Unified Theory of Acceptance and Use of Technology" (UTAUT) of Venkatesh et al. (2003) and adding further constructs it was hypothesized to answer the research question "*What are factors influencing the adoption of Enterprise 2.0 as a tool for knowledge exchange among employees of a logistics company located in Germany?*". However, the results only partly support the assumptions and hypotheses, which were based on the literature review.

5.1 Reflecting the Main Findings

For the group of non-user the dependent variable is not separated into either being intended to share or get knowledge through the platform. Instead the dependent variable loaded on one component, which is labeled within this research as 'behavioral intention to use'. Hence, in contrast to the idea of Kügler et al. (2015) and Kügler & Smolnik (2014) this research evidenced that non-user, who face the decision to adopt an innovation or resist adoption, do not differentiate between the action of sharing and getting knowledge through the platform. For them it is rather about becoming a general user of the E2.0 and not about deciding to behave as a sharer or receiver of knowledge. Probably, this is due to the fact that they do not know the system in detail and could therefore not differentiate between specific usage behaviors. Just after the adoption, when employees convert to users, they decide to be either the one who shares knowledge or the one who receives knowledge or both. The reason, why users and not non-users decide about the specific usage behavior, could also be that users are able to experiment with the system, are aware of functionalities and are therefore able to take the decision about their future role.

The hypothesis made regarding the variables 'individual differences' (organizational identification and personal innovativeness), 'general trust', 'organizational climate' and 'gender' were not verified by this research. These variables nor predict sharing or getting knowledge by actual user neither the behavioral intention to use the E2.0. Furthermore, the findings suggest that adding variables to the UTAUT-model in the multiple hierarchical regression analysis could lead to a lowered adjusted R^2 for the group of actual user who get and share knowledge through the platform. Consequently, the added variables decrease the prediction of E2.0 usage. Obviously, they are not related to the dependent variable. Possible reasons will be outlined in the following:

- Regarding the user-related predictor organizational identification, it becomes obvious, that the adoption of an E2.0 to exchange knowledge is not influenced by belongingness to the organization. Hence, those who feel a greater bound with the organization, are not more likely to adopt the E2.0 to exchange knowledge compared to those employees with a loose connection to the organization.

Reason for non-significance of the variable is possibly that employees do not adopt a technology for a specific reason (i.e. to exchange knowledge), but more generally. The adoption decision is influenced by the UTAUT-variables, which are applicable to different technologies independently of the specific usage purpose. Just after the adoption employees decide about the specific usage of that technology and the predictors of knowledge exchange as organizational identification would become relevant. In line Kügler et al. (2015) only verify the influence of organizational identification on knowledge exchange and not on an adoption decision. Thus, the non-significance of organizational identification on the adoption of E2.0 could be explained by such a distinction between technology adoption-drivers (i.e. UTAUT-variables) and drivers of specific usage behaviors (i.e. organizational identification enabling knowledge exchange) after the adoption.

- In contrast to assumptions of Frambach & Schillewaert (2002), Wang et al. (2014) and Joo et al. (2014) the user-related predictor personal innovativeness neither influences performance nor effort expectancy for the group of actual user or non-user. Hence, those employees who are in general willing to try out new technologies do not evaluate the E2.0 as more effective or easy to use.

  The finding could be explained by the fact that Germans do not evaluate themselves as highly innovative. Rather, they were quiet neutral in their mean value of the construct innovativeness. Thus, a significant influence of innovativeness is probably hardly to account for in such a non-innovative sample. In contrast, US respondents agreed to be willing to try out new technologies. For American employees it could be assumed that innovativeness plays a greater role in the adoption of an E2.0. Another reason for non-significance of the construct could be the central role of the construct subjective norm. Germans rely on opinions and recommendations of supervisors. They adjust their behavior to the supposed appropriate way, do not break the organizational norms, do not have the tendency to adopt an innovation independently of the communicated experience of others and won't try out new technologies until their leaders tell them to do so. Thus, a significant influence of innovativeness is probably suppressed by the key role of subjective norm within the German sample.
- Opposite to Ridings et al. (2002) and Paroutis & Al Saleh (2009) no influence was found on adoption or usage for the user-related variable trust. Hence, those who trust colleagues are not more likely to adopt the E2.0 to exchange knowledge compared to those employees who do not trust their colleagues.

  A possible explanation would be that the E2.0 system is embedded in an organizational environment. Within the organizational setting of an E2.0 system users are less strange to each other compared to for example members of an online community. Employees are identifiable, they know each other personally or via third parties and if they do not know each other they can still rely upon the fact that all users work for the same company, hold the same organizational norms, need

to stick to the same organizational rules and get controlled through the management. Socially inappropriate behavior may be less problematic in such an organizational context. Thus, a certain degree of trust is implicitly supposed due to the organizational context and interpersonal trust becomes less relevant for employees. Another reason for the non-significance of trust is the fact that trust may be more relevant for the process of knowledge exchange itself and not for the adoption of an E2.0. As in the case of organizational identification, the variable trust probably becomes relevant just after the adoption decision. Several researches undermine the importance of trust for knowledge exchange processes. Li (2011) for example mentioned that knowledge givers have to trust to share what they know and knowledge receivers have to trust in the good intentions of givers to utilize the information.

- Through reviewing knowledge exchange literature it becomes apparent, that organizational climate influences the intention to exchange knowledge (Bock et al., 2005; Wang & Noe, 2010; van den Hooff & de Ridder, 2004). However, organizational climate is not found as a predictor of E2.0 adoption within this research. Hence, employees, who consider the organizational environment as highly collaborative and innovative, are not more likely to adopt the E2.0.

  One reason for the non-significance of the variable is, that organizational climate seems to predict the process of knowledge exchange itself but does not predict the adoption decision - as in the case of organizational identification and trust. Thus, predictors are either general technology adoption-drivers (i.e. UTAUT-variables) or drivers of specific usage behaviors, which may become relevant after the adoption. However, the predictors of knowledge exchange do not influence the adoption decision of the E2.0 system in order to exchange knowledge within the organization. Another reason for the non-significance of organizational climate could be that the researched organization was hardly evaluated as innovative and collaborative. Thus, a significant influence of the variable is probably hardly to account for in such a non-innovative and collaborative organization. Within a more divers or extreme organizational climate effects would probably become obvious.
- Contrary to what was found in the research of Jung et al. (2011) and Thompson (2001) gender does not play a significant role in the behavioral intention to adopt an E2.0. Neither men nor women are more likely to adopt the E2.0 for knowledge exchange.

  An explanation is probably that employed women are used to work with computer programs. Especially in the logistics sector is working with the computer a necessary and daily routine. Thus, they are not worse skilled compared to men. Furthermore, the non-significance of the variable is probably explained by the fact that an E2.0 includes to a large extend social devices, which are more likely to be used by women (Correa, Hinsley, de Zúñiga, 2010; Duggan & Brenner, 2013; Jung

et al., 2011). Thus, women are expected to be interested in such a system even if men are generally more interested in learning about new computer software.

Further, the results show, that there is no differentiation between ability-based and integrity-based trust as supposed through the research of Mayer et al. (1995). Instead, it becomes obvious through this research that the trust-constructs load on one component, which was labeled 'trust in colleagues'. Hence, employees do not differentiate between types of trust, but evaluate trust in general. A possible explanation for this finding is that users (trustors) within an E2.0 system need to trust a group of employees (trustees), rather than one identifiable individual. For example if an employee shares a question or information, he does not know who answers that question or comments that information. Consequently, the differentiation between types of interpersonal-trust gets blurred. Another reason would be that trust in an online environment is not as differentiated as trust in an offline-context. Ridings et al. (2002) for example state that benevolence can be combined with integrity in an online interaction, because they measure the same. Additionally, it could be that trust is not separated into ability and integrity, because the line between types of trust gets blurred due to the organizational context. Employees may presume that colleagues have high skills due to their employment and organizational-status. They may assume that colleagues have integrity, because they work for one organization and try to achieve the same goals. A more general feeling of trust turns out to be relevant.

Further, it becomes obvious through the research that the construct 'organizational climate' is a composition of perceived innovative and knowledge-exchange climate. Thus, employees do not differentiate between types of climate, but evaluate it in general. To merge innovative and knowledge-exchange climate does not hardly contradict with the findings of the literature study, because the two constructs harmonize well with each other.

The results reveal significant differences between respondents from Germany, the United States and Hong Kong for the constructs: 'subjective norm', 'performance expectancy', 'innovativeness', 'network externality', 'organizational identification', 'behavioral intention to use' and 'actual use of sharing as well as getting knowledge'. Conducting a literature study onto the reasons for these adoption differences it becomes obvious that cultural differences may trigger the variance. Culture is defined by Hofstede (2011, p. 3) as the "collective programming of the mind that distinguishes the members of one group or category of people from others." According to him Asian countries, like Hong Kong, differ on various dimensions from Western countries as Germany and the United States (Hofstede, 2011). Barron & Schneckenberg (2012) applied Hofstede`s approach on the adoption of Web 2.0 technologies in the corporate context of various countries. They suppose that E2.0 adoption is quicker in companies settled in countries with less power distance, more collectivism, and uncertainty (Barron & Schneckenberg,

2012). Thus, they also mention difference in Web2.0 adoption between countries of different cultures. Furthermore, Barron & Schneckenberg (2012) refer to the in 2009 carried out McKinsey survey, which also prove global differences regarding the Web 2.0 technology usage and satisfaction.

Next to these differences in adoption behavior Ardichvili, Maurer, Li, Wentling and Stuedemann (2006) further mention that due to cultural differences Chinese and American manager differ from each other in their processing of information and knowledge sharing behavior. For example, Chinese employees are more unwilling to share knowledge with an out-group member compared to employees from the United States. Further Chinese employees worry more about face, modesty and language difficulties (Ardichvili et al., 2006). That's mainly why Ardichvili et al. (2006, p. 104) recommend that "the introduction of country-specific knowledge sharing […] should be based on a cultural needs assessment, and identification of culture-specific barriers to knowledge exchange."

The variables greater performance expectancy, greater subjective norm, organizationally provided technical support and the age of employees influence the behavioral intention to use the E2.0. Thus, the assumption, that UTAUT-variables are critical predictors of an E2.0 adoption is supported. System-related factors as well as organizational-related factors, social influences and the facilitating conditions, predict the adoption of an E2.0 to exchange knowledge. The findings strengthen the assumptions of researches, which support the effectiveness of the UTAUT-variables to predict the adoption of a technology. However, Workman's (2014) assumption that the impact of the predictors of the UTAUT depend upon the technology itself can be reinforced by the outcomes of this research.

The critical role of age in the adoption of a technology as declared through researches of Jung et al. (2011) or Nedbal et al. (2012) gets also reinforced by this research. Younger employees are certainly more intended to adopt an E2.0 system to exchange knowledge compared to older employees.

For getting knowledge greater performance expectancy and greater subjective norm positively influence the dependent variable. Here, the findings are in line with the on UTAUT-based assumptions. For sharing knowledge performance expectancy predicts the dependent variable as supposed.

However, effort expectancy and perceived network externality have significant effect on the dependent variable sharing knowledge, but in opposite direction as assumed through literature. A possible explanation for the negative relationship between effort expectancy and sharing knowledge would be that a less multifaceted E2.0 system would not mirror the complexity needed for effective knowledge exchange processes. Less functionality would give fewer possibilities. It would not be possible to work efficiently and effectively with the system. Thus, easy systems would bring other complications as lowered performance expectancy and only slight additional advantages to existing systems. Another reason for the negative relationship between effort expectancy and sharing knowledge would be that handling a more difficult system demonstrates ones skills and competencies.

Employees, who are able to use such a system, are the 'elite', those who are intelligent and skilled enough to be able to exchange knowledge. The perceived knowledge-quality on the platform would be evaluated as higher by those who use it. Possibly, employees do not want everyone to use the E2.0, but want only professionals to do so. An additional reason could be that provided technical support in the adoption stage is more important than making the system easier. Hence, offering great support would be a better option than a platform with less functionality.

A possible explanation for the negative relationship between network externality and sharing knowledge would be that employees want a selected group, the intelligent and skilled colleagues, to share knowledge on the E2.0 instead of a critical mass composed of everyone. As mentioned the perceived knowledge-quality on the platform would be higher if not everyone, but only professionals, could share knowledge. By restricting sharing to such a selected group of employees not too much information would be posted on the platform. Irrelevant information or even an information overload would be avoided. A system with fewer sharers would not drift of the question so quickly. Thus, not reaching a critical mass (having a great quantity and number of respondents) on the platform would probably be beneficial for the quality of exchanged knowledge.

5.2 Managerial implications

By focusing the managerial suggestions on the significant UTAUT-predictors, the system-related predictor performance expectancy and the two organizational-related predictor's subjective norm and provided technical support, the adoption of the E2.0 platform to exchange knowledge will be improved the most. Next, each factor is described more precisely and specific advices are given.

Performance expectancy

The most important aspect for the adoption of an E2.0 platform is perceived usefulness. Hence, organizations should actively ask for and define the needs of different work units, match those needs with solutions through the E2.0 and never miss an opportunity to demonstrate the platform`s performance benefits. Whether it is during the regular team meetings, during discussions in a project team or during for example the welcome-event for new employees, the platform`s strengths for performance gains should be demonstrated. Improving employees' awareness of how the E2.0 can enhance their performance will improve adoption.

However, it is important to not only show available functions, but to demonstrate how they are used throughout different application scenarios. Those who present the application scenarios should exactly know what function to use for what task or process. Thereby, usage of the E2.0 becomes clearer and more obvious to employees.

The application scenarios should be demonstrated as dynamic as possible, for example by video clips or animations instead of handing out long written guidelines.

Further, it would be helpful to have a mobile version of the platform. Thereby, employees, who are member of a community or follow a blog within the E2.0 system, get immediately informed about news, interactions and interesting activities. Furthermore, they get the opportunity to be ready to interact via the platform wherever they are at that moment. By keeping the knowledge on the platform up-to-date the E2.0 will become more useful for employees.

By offering more personal support the usefulness of the system can be demonstrated, too. That brings us to the next point.

Provided technical support

As provided technical support is one of the crucial factors, special emphasis should be taken on supporting users. It is essential for the improvement of the adoption to eliminate use-reservations or anxiety among employees.

As the researched organization is quiet big and offices are spread around Germany a community manager for each community in the E2.0 or at least for each office should be selected. In so doing, several advantages can be offered to employees: the community manager is close to the employee, can give quick and direct support, is well known by everyone within the organization and is continuously physical attendant for employees to offer support.

To become an expert, the community manager needs special training and qualification. The person has to know the system by heart, be aware of the performance gains, and application scenarios. In case of the researched organization, which implemented IBM Connections, an active exchange with IBM about new tools or services is necessary.

However, the community manager needs some personal characteristics as for example technical affinity (interest and knowledge how to handle the platform) and empathy (the willingness to help and a sense of what individuals need). A good manager supports employees in their system usage and delivers for example not only the information, where to find what knowledge, but conveys directly an appropriate link to specific helpful information.

The negative influences of effort expectancy and network externality on the dependent variable sharing knowledge would also be decreased by having a community manager. As mentioned, support is more important than making the system easier. It is a factor that the organization can directly influence. Hence, offering great support to employees by a community manager would enhance usage even for a more difficult system. The negative relationship between network externality and sharing knowledge is probably caused by the fact that too many sharers produce an information overload. By having a

community manager, who acts as a gatekeeper of information and publishes only some content or who organizes the amount of information, users were supported in processing information.

Further, those who offer support need to be communicated through several channels to ensure that employees are aware of that help. Probably a logo for the group of community managers could be helpful to visualize their work. Employees would remember such a visualization better compared to text.

The training itself should become more dynamically by offering training videos or interactive workshops through which users can get to know how to cope with the system. Furthermore, after the first training follow-up sessions should be planned to stimulate usage, solve problems and to be continuously present as contact person.

Knowledge of the existing, but similar old platform`s needs to be transferred into the new E2.0 and the old platform needs to be replaced by the new one. Employees should not be able to use the old system anymore. Here, the aspect of individual support becomes relevant to prevent frustration in finding the old information within the new system.

A chat-function within the E2.0 would be another possibility (see Figure 6). A small window on the right lower end of the screen should be continuously open and depict the message: “Any Questions? Ask them directly and get immediately expert help!”. In so doing employees would be able to immediately ask questions. Either the community manager or another trainer needs to be responsible for answering the questions.

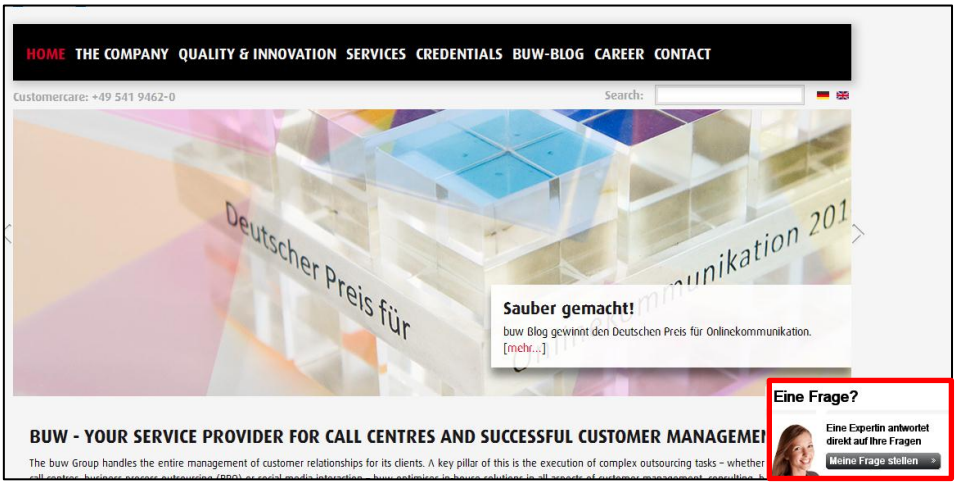

Figure 6: Example of a chat-function on a website

Subjective norm

Another crucial predictor of the behavioral intention to use the E2.0 is subjective norm. Concerning this construct, the most important recommendation is to make leaders act like role models. Superiors have

to use the platform, exemplify usage and stimulate their employees to use it too. Their usage demonstrates employees the participatory, bottom-up culture: actions speak louder than words.

Probably they even need to slightly force employees. For example, managers should only make specific information available on the platform and not via other channels. Important documents, as for example the annual report or changes in salary need to be communicated through the platform to strengthen its importance. Employees will notice that communicating via the platform becomes the norm. Furthermore, managers need to constantly remind employees of the platforms potentials. However, a leader should never annoy employees! If a leader wants to succeed it is important to be charming while pushing.

By opening the platform for externals, as customers or suppliers, the platform even more gets integrated into daily business. Employees would lose important information, if the leader interacts with externals via the E2.0 and the employee did not yet adopt the system.

Further, by choosing a community manager, a colleague to whom other co-workers already would turn for advice or assistance would be best. Those employees already have a good network and colleagues would be more willing to adopt the E2.0 too.

Demographic Variable Age

As the results reveal, younger people are more intended to use the E.20. Therefore, it is recommended to allow E2.0 usage for non-work related issues. For example, offering space for conversations, integrating the marketplace, where employees can buy and sell old products or exchange about events, the companies Christmas party or something similar, would stimulate usage. Especially younger employees, who grew up with social media, are likely to use the system for such reasons. Thereby, employees get to know the system, enhance the system-image and get more used to exchange via the platform.

5.3 Limitations and future research directions

Several limitations of this study are mentioned in the following, which suggest new approaches for further research.

First of all, this study used existing scales, which were adapted to the research context and restructured after applying a factor analysis. Hence, it was not possible within this research to look into the effects of the constructs extrinsic benefit, intrinsic benefit, benevolence based trust and task-system fit. Although the constructs were specified as possible determinants of the behavioral intention to use the E2.0 (Chompis et al., 2014; Wang et al., 2014; Lin, 2007; Ridings et al., 2002; Venkatesh et al., 2003), each construct had cross-loadings on several other factors and was therefore dropped from

analysis. Future studies need to investigate into the influence of these constructs on the behavioral intention to use an E2.0 platform.

The whole sample consisted of employees working at a global logistics company. Thus, the main business and interchanged knowledge is somehow related to the industrial sector of logistics. Perhaps, for other branches the predictors of adopting an E2.0 will differ from the relationships found here. Asking more people from different sectors will give a better impression of the predictors.

Due to the finding that employees from Germany, Hong Kong and the United States agreed differently on constructs, this analysis only focuses on German employees. The group of respondents from Hong Kong and the United States was too small to separate and merging them into one was hindered by cultural differences. Future research should investigate into the differences between the countries and detect the reason for these differences.

The researched organization implemented an Enterprise 2.0 technology from IBM. There are several other software-packages, which differ a bit in their functionalities and interface from the IBM version. Examples of known collaboration-software's, next to IBM Connections, are Microsoft SharePoint & Yammer, SAP Jam or Citrix Podio (zdnet.com, 2013). Furthermore, some organizations build their own knowledge-exchange-system in-house. Probably, the factors influencing the behavioral intention to adopt will differ across systems. Future research should investigate into the differences of bought systems and in-house solutions. Besides, it could be examined in how far different software-packages vary from each other in their predictors.

Future research should also gain more in-depth information into the predictors of behavioral intention to use an E2.0 as a tool for knowledge exchange by conducting for example interviews with employees or a focus group. Within this research, results were only gained through a quantitative approach. Qualitative approaches will further develop the insights gained through this study.

The research model focused on the adoption of an E2.0. The applicability of that model was also tested for actual users, those who already exchange knowledge via the E2.0 platform. However, future research should focus on possible predictors of actual use. Consequently, it would be clearer, what increases usage after the adoption stage. Quantitative as well as qualitative approaches would be interesting in that case.

At least, other models than the UTAUT could be used. Future studies should for example look onto the adoption from a different point of view by applying for example the Adaptive Structuration Theory (AST) of DeSanctis and Poole (1994). Strengthening the social aspects, the theory focuses on how employees create the usage of the information technology and apply it to their way of working (DeSanctis & Poole, 1994). It will open up quiet new insight into the process of adopting an E2.0.

5.4 Conclusion

Regarding the research question *"What are factors influencing the adoption of Enterprise 2.0 as a tool for knowledge exchange among employees of a logistics company located in Germany?"* it becomes obvious through this research, that the UTAUT-based constructs 'performance expectancy', 'subjective norm' and 'organizationally provided technical support', which were regarded as critical predictors, influence the 'behavioral intention to adopt an Enterprise 2.0 as a tool for knowledge exchange' among employees of a German logistics company. Consequently, the assumption, that the UTAUT-variables are critical predictors of an E2.0 adoption gets supported by this research.

Furthermore, younger respondents more likely adopt the Enterprise 2.0 as a tool for knowledge exchange and the variable 'effort expectancy' has positive influence on 'performance expectancy'. The effects were measured using a hierarchical multiple regression analysis.

By applying the research model for actual users it becomes apparent, that the UTAUT-based constructs 'performance expectancy' and 'subjective norm' influence the dependent variable 'getting knowledge through the platform'. Concerning the dependent variable 'sharing knowledge through the platform' the variables 'performance expectancy', 'effort expectancy' and 'perceived network externality' are main predictors. Furthermore, the construct 'effort expectancy' has still a positive influence on the dependent variables 'getting knowledge and sharing knowledge'. Through conducting a hierarchical multiple regression analysis the results were gained.

As the results of the factor analysis indicate, not all items conform to the by literature operationalized constructs. The items ability and integrity based trust load on one component, which is labeled 'trust in colleagues' and the items innovative and knowledge-exchange climate load on one component, which is labeled 'organizational climate'. Due to cross-loadings the constructs extrinsic benefit, intrinsic benefit, benevolence based trust and items of task-system fit needed to be dropped from further analysis.

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Appendix I: Online survey English Language

E-Mail: Worldwide IBM Connections survey at organization X, your feedback is welcome!

Dear colleagues,

Thank you very much for your willingness to fill in the survey about the establishment of **IBM Connections** as a tool for knowledge exchange.

To support the Intranet project team of organization X and to complete my master thesis at the University of Twente in the Netherlands, we kindly ask you to finish this survey before **30th April 2015**.

Completing the survey will take about 15 minutes and is completely anonymous. As we want to know your opinion and behavior with regard to IBM Connections, there are no wrong answers.

The results will be used for scientific purposes only and to help the Intranet project team in their next steps. Your participation is very important to us and will support me in completing my master thesis.

Please follow the link, to access the survey:

[Link]

By submitting the survey you are confirming your participation. If you have any questions, please don't hesitate to contact us.

Thanks a lot in advance!

Melanie Mönch & Your Intranet Project Team

Table 23: *List of Demographic Questions*

Summary of Demographic variables	
What gender are you? o Male o Female	**What is your job position?** o With managerial responsibility o Without managerial responsibility
Please, fill in your year of birth ----------	**How many years have you been working for organization X?** ----------
Where are you located? o Germany o Hong Kong o United States of America	**What is the highest level of education that you have attained?** o High school o Vocational school o Bachelor o Master o Ph. D/ Doctorate o Other

Please read the following definition carefully.

IBM Connections is a social platform integrated within the Intranet platform of organization X. We want to get to know your opinion and behavior with regard to IBM Connections as a platform for knowledge exchange. Knowledge exchange is understood as a process of giving-and-taking knowledge through IBM Connections usage. Thus, it includes the idea of sharing (or bringing and donating) own expertise for colleagues and seeking (or collecting and searching) information provided by colleagues.

Based on this definition, do you consider yourself as someone who uses IBM Connections for the purpose of knowledge exchange?

- o Yes, I use IBM Connections for the purpose of knowledge exchange within organization X
- o No, I do not use IBM Connections for the purpose of knowledge exchange, I am however aware of the system within organization X
- o I have never ever before heard about a system called IBM Connections within organization X

If yes, how frequently do you login to IBM Connections with the purpose of knowledge exchange?

- o Several times a day
- o Several times a week
- o Several times a month
- o Several times a year

Table 24: *Response Option for non-user*

Demonstration of 5-point Likert Scale				
Not at all probable	Slightly probable	Moderately probable	Very probable	Completely probable
○	○	○	○	○

Behavioral intention (Get knowledge)

Code	Item	Source
	I think that I am going to use IBM Connections in the next six months …	Adapted from Consumptive use (Kügler et al., 2015, p. 818)
BI1	… to obtain knowledge provided by my colleagues.	
BI2	… to retrieve knowledge made available on the platform by my colleagues.	

Behavioral intention (Share knowledge)

Code	Item	Source
	I think that I am going to use IBM Connections in the next six months …	Adapted from Contributive use (Kügler et al., 2015, p. 818)
BI3	… to contribute my knowledge to the platform for my colleagues.	
BI4	… to provide my colleagues with knowledge.	

Table 25: *Response Option for user*

Demonstration of 5-point Likert Scale				
Never	Rarely	Occasionally	Frequently	Very frequently
○	○	○	○	○

Actual Use (Get knowledge)

Code	Item	Source
	I currently use IBM Connections …	Adapted from Consumptive use (Kügler et al., 2015, p. 818)
AU1	… to obtain knowledge provided by my colleagues.	
AU2	… to retrieve knowledge made available on the platform by my colleagues.	

Actual Use (Share knowledge)

Code	Item	Source
	I currently use IBM Connections …	Adapted from Contributive use (Kügler et al., 2015, p. 818)
AU3	… to contribute my knowledge to the platform for my colleagues.	
AU4	… to provide my colleagues with knowledge.	

Table 26: *Response Option for all respondents*

Demonstration of 5-point Likert Scale				
Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
○	○	○	○	○

Performance Expectancy

Code	Item	Source
PE1	I find IBM Connections useful in my job.	Adapted from items estimating UTAUT (Venkatesh et al., 2003, p. 460)
PE2	Using IBM Connections enables me to accomplish tasks more quickly.	
PE3	Using IBM Connections increases my productivity.	

Effort Expectancy

Code	Item	Source
EE1	Learning to use IBM Connections is easy for me.	Adapted from items estimating UTAUT (Venkatesh et al., 2003, p. 460)
EE2	IBM Connections is effortless to use.	
EE3	Working with the system IBM Connections is easy.	

Facilitating Conditions (Organizationally Provided Technical Support)

Code	Item	Source
FO1	Organization X makes guidance concerning the use of IBM Connections available to me.	Adapted from Facilitating Conditions (Venkatesh et al., 2003, p. 454)
FO2	Organization X provides me with specialized instruction on how to use IBM Connections.	
FO3	Organization X assigns a person (or group), who is available to help with system difficulties within IBM Connections.	

Facilitating Conditions (Task-System Fit)

Code	Item	Source
FF1	Using IBM Connections is compatible with all aspects of my work.	Adapted from Compatibility (Venkatesh et al., 2003, p. 454)
FF2	Using IBM Connections fits well with the way I like to work.	
FF3	The use of IBM Connections fits well with my style of work.	

Social Influence (Subjective Norm)

Code	Item	Source
SN1	Colleagues, who influence my behavior think that I should use IBM Connections.	Adapted from Subjective Norm (Venkatesh et al., 2003, p. 452; Wang et al., 2014, p. 1055)
SN2	Colleagues, who are important to me think that I should use IBM Connections.	
SN3	Colleagues, whose opinions I value think that I should use IBM Connections.	

Social Influence (Network Externality)

Code	Item	Source
NE1	Generally I think most colleagues, who work for organization X use IBM Connections.	Adapted from Perceived Network Externality (Wang et al., 2014, p. 1055)
NE2	Overall I think most managers, who work for organization X use IBM Connections.	
NE3	In general I think most employees, who work for organization X use IBM Connections.	

Benefit of Sharing (Intrinsic Motivation)

Code	Item	Source
IB1	The exchange of knowledge with colleagues via IBM Connections makes me happy.	Adapted from Intrinsic benefit (Wang et al., 2014, p. 1055)
IB2	Through exchanging knowledge with colleagues via IBM Connections I accomplish what is important to me personally.	
IB3	Exchanging knowledge with colleagues via IBM Connections will give me a sense of accomplishment of a task.	

Benefit of Sharing (Extrinsic Motivation)

Code	Item	Source
	If I exchange knowledge with colleagues via IBM Connections, …	Adapted from Extrinsic benefit expectations (Wang et al., 2014, p. 1055)
EB1	… I will gain recognition and respect.	
EB2	… the ties to colleagues will be strengthened.	
EB3	… the cooperation with colleagues will be improved.	

General Trust (Ability based Trust)

Code	Item	Source
	My organization X colleagues, with whom I get in contact with through IBM Connections …	Adapted from Ability based Trust (Mayer & Davis, 1999, p. 136)
AT1	… are competent at carrying out their jobs.	
AT2	… have specialized skills that can increase our performance.	
AT3	… are well qualified.	

General Trust (Benevolence based Trust)

Code	Item	Source
	My organization X colleagues, with whom I get in contact with through IBM Connections …	Adapted from Benevolence based Trust (Mayer & Davis, 1999, p. 136)
BT1	… are very concerned about my well-being.	
BT2	… are really looking out for what is important to me.	
BT3	… will go out of their way to help me.	

General Trust (Integrity based Trust)

Code	Item	Source
	My organization X colleagues, with whom I get in contact with through IBM Connections …	Adapted from Integrity based Trust (Mayer & Davis, 1999, p. 136)
IT1	… are guided in their behavior by fair principles.	
IT2	… are consistent in their actions and behavior.	
IT3	… remain true to their words.	

Organizational Climate (Knowledge-exchange norm)

Code	Item	Source
KE1	Knowledge exchange within organization X is the norm.	Adapted from Collaboration norms (Kügler et al., 2015, p. 818)
KE2	Knowledge exchange is regarded as important within organization X.	
KE3	Knowledge exchange is encouraged within organization X.	

Organizational Climate (Innovative Climate)

Code	Item	Source
IC1	Organization X encourages suggesting innovative ideas.	Adapted from Innovativeness (Bock et al., 2005, p. 108)
IC2	Organization X places much emphasis on trying out what is new, to be innovative, even if that could turn out to be a failure.	
IC3	Organization X encourages searching for new methods to perform a task.	

Individual Differences (Organizational identification)

Code	Item	Source
AC1	When someone criticizes organization X, it feels like a personal insult.	Adapted from Organizational Identification (Mael, & Ashforth, 1992, p. 122)
AC2	When I talk about organization X, I usually say 'we' rather than 'they'.	
AC3	When someone praises organization X, it feels like a personal compliment.	

Individual Differences (Personal innovativeness)

Code	Item	Source
PI1	Generally, if I hear about a new technology, I look for ways to experiment with it.	Personal innovativeness (Wang et al., 2014, p. 1055)
PI2	I am usually the first to try out new technologies.	
PI3	In general, I like to experiment with new technologies.	

Thanks a lot for your contribution!

If you are interested in the results, you will find them on the Intranet around July or you can contact the Intranet Project Team.

Subject: Reminder of the worldwide IBM Connections survey at organization X

Dear colleagues,

This e-mail is to remind you, if you have not completed the survey about the establishment of **IBM Connections** as a tool for knowledge exchange until now, please follow the link:

[Link]

This survey will be available until **30. April 2015**.

Your participation is very important to us, because it supports me in completing my master thesis and guides the Intranet project team of organization X in their next steps.

The survey only takes about 15 minutes and is completely anonymous. As we want to know your opinion and behavior with regard to IBM Connections, there are no wrong answers.

By submitting the survey you confirm to participate. If you have any questions, please don't hesitate to contact me.

Thanks a lot in advance!

Melanie Mönch & Your Intranet Project Team

Appendix II: Online survey German Language

Betreff: Weltweite IBM Connections Umfrage bei Organisation X, Ihr Feedback ist gefragt!

Liebe Kolleginnen und Kollegen,

Vielen Dank für die Bereitschaft, die Umfrage zur Etablierung von **IBM Connections** als System für den Wissensaustausch auszufüllen.

Im Rahmen meiner Masterarbeit für das Intranet-Projektteam von Organisation X und der Universität Twente in den Niederlanden, bitten wir Sie, diesen Fragebogen bis zum **30. April 2015** auszufüllen.

Das Ausfüllen des Fragebogens wird etwa 15 Minuten dauern und ist völlig anonym. Da wir mehr über Ihre Meinung und Ihr Verhalten hinsichtlich IBM Connections erfahren möchten gibt es keine falschen Antworten.

Die Ergebnisse werden nur für wissenschaftliche Zwecke verwendet und um das Intranet-Projektteam in Ihren nächsten Schritte zu helfen. Ihre Teilnahme ist sehr wichtig für uns und wird mich bei der Erstellung meiner Masterarbeit unterstützen.

Bitte klicken Sie auf diesen Link, um die Umfrage zu öffnen:

[Link]

Mit dem Absenden des Fragebogens bestätigen Sie die Teilnahme. Wenn Sie Fragen haben, zögern Sie bitte nicht, mich zu kontaktieren.

Für Ihre Teilnahme möchten wir uns im Voraus ganz herzlich bei Ihnen bedanken.

Melanie Mönch & Ihr Intranet-Projektteam

Table 27: *Liste Demografischer Daten*

Zusammenfassung demografischer Daten	
Welches Geschlecht haben Sie? o Männlich o Weiblich	**Welche Job Position haben Sie?** o Mit Führungsverantwortung o Ohne Führungsverantwortung
Tragen Sie ihr Geburtsjahr ein ----------	**Wie viele Jahre arbeiten Sie für Organisation X?** ----------
Wo arbeiten Sie? o Deutschland o Hong Kong o Vereinigte Staaten von Amerika	**Was ist der höchste Bildungsgrad, den Sie erreicht haben?** o Schulabschluss (Haupt-/ Real-/ Gymnasial) o Berufsschule o Bachelor o Master o Promotion/ Doktorat o Sonstige

Bitte lesen Sie die Definition.

IBM Connections ist eine soziale Plattform integriert in das Intranet von Organisation X. Wir möchten gerne mehr über Ihre Meinung und Ihr Verhalten hinsichtlich der Verwendung von IBM Connections als Plattform für den Wissensaustausch erfahren. Wissensaustausch wird verstanden als Prozess des Gebens-und-Nehmens von Informationen via IBM Connections. Daher beinhaltet es die Bereitstellung von Wissen für Kollegen und die Suche nach Informationen, die durch Kollegen bereitgestellt wurden.

Basierend auf dieser Definition, sehen Sie sich als jemand, der IBM Connections zum Zweck des Wissensaustausches nutzt?

- Ja, ich nutze IBM Connections zum Zweck des Wissensaustausches innerhalb von Organisation X
- Nein, ich nutze IBM Connections nicht zum Zweck des Wissensaustausches, aber mir ist das System innerhalb von Organisation X bekannt
- Ich habe noch nie zuvor von einem System namens IBM Connections innerhalb von Organisation X gehört

Wenn ja, wie oft loggen Sie sich in IBM Connections ein, um Wissen auszutauschen?

- Mehrmals am Tag
- Mehrmals pro Woche
- Mehrmals im Monat
- Mehrmals im Jahr

Table 28: *Antwortoptionen für Nicht-Nutzer*

5-Punkt Likert Scale				
Überhaupt nicht wahrscheinlich	Wenig wahrscheinlich	Mäßig wahrscheinlich	Sehr wahrscheinlich	Völlig wahrscheinlich
○	○	○	○	○

Behavioral intention (Get knowledge)

Code	Item	Quelle
	Ich denke, ich werde IBM Connections in den nächsten sechs Monaten verwenden, ...	Übernomen von Consumptive use (Kügler et al., 2015, p. 818)
BI1	... um Wissen, dass von meinen Kollegen zur Verfügung gestellt wurde, zu erhalten.	
BI2	... um Wissen abzurufen, dass auf der Plattform von meinen Kollegen bereitgestellt wurde.	

Behavioral intention (Share knowledge)

Code	Item	Quelle
	Ich denke, ich werde IBM Connections in den nächsten sechs Monaten verwenden, ...	Übernomen von Contributive use (Kügler et al., 2015, p. 818)
BI3	… um mein Wissen für Kollegen auf der Plattform bereitzustellen.	
BI4	… um meinen Kollegen Wissen zur Verfügung zu stellen.	

Table 29: *Antwortoptionen für Nutzer*

5-Punkt Likert Scale				
Nie	Kaum	Gelegentlich	Oft	Sehr oft
○	○	○	○	○

Actual Use (Get knowledge)

Code	Item	Quelle
	Ich nutze derzeit IBM Connections, …	Übernomen von Consumptive use (Kügler et al., 2015, p. 818)
AU1	... um Wissen, dass von meinen Kollegen zur Verfügung gestellt wurde zu erhalten.	
AU2	... um Wissen abzurufen, dass auf der Plattform von meinen Kollegen bereitgestellt wurde.	

Actual Use (Share knowledge)

Code	Item	Quelle
	Ich nutze derzeit IBM Connections, …	Übernomen von Contributive use (Kügler et al., 2015, p. 818)
AU3	… um mein Wissen für Kollegen auf der Plattform bereitzustellen.	
AU4	… um meinen Kollegen Wissen zur Verfügung zu stellen.	

Table 30: *Antwortoptionen für alle Befragten*

Demonstration der 5-Punkt Likert Scale				
Stimme gar nicht zu	Stimme nicht zu	Weder noch	Stimme zu	Stimme voll zu
○	○	○	○	○

Performance Expectancy

Code	Item	Quelle
PE1	Ich finde IBM Connections nützlich in meinem Job.	Übernomen von UTAUT (Venkatesh et al., 2003, p. 460)
PE2	Die Nutzung von IBM Connections ermöglicht es mir, Aufgaben schneller zu erledigen.	
PE3	Die Nutzung von IBM Connections erhöht meine Produktivität.	

Effort Expectancy

Code	Item	Quelle
EE1	Die Nutzung von IBM Connections ist für mich einfach zu erlernen.	Übernomen von UTAUT (Venkatesh et al., 2003, p. 460)
EE2	IBM Connections ist mühelos zu bedienen.	
EE3	Die Arbeit mit dem System IBM Connections ist leicht.	

Facilitating Conditions (Organizationally Provided Technical Support)

Code	Item	Quelle
FO1	Organisation X stellt mir Anleitungen bezüglich der Anwendung von IBM Connections zur Verfügung.	Übernomen von Facilitating Conditions (Venkatesh et al., 2003, p. 454)
FO2	Organisation X bietet mir spezialisierte Anweisungen über die Nutzung von IBM Connections.	
FO3	Organisation X hat eine Person (oder Gruppe) bestimmt, die für Hilfe bei Systemschwierigkeiten innerhalb von IBM Connections zur Verfügung steht.	

Facilitating Conditions (Task-System Fit)

Code	Item	Quelle
FF1	Die Nutzung von IBM Connections ist kompatibel mit allen Aspekten meiner Arbeit.	Übernomen von Compatibility (Venkatesh et al., 2003, p. 454)
FF2	IBM Connections passt gut zu der Art und Weise, wie ich gerne arbeite.	
FF3	Die Nutzung von IBM Connections passt gut zu meinem Arbeitsstil.	

Social Influence (Subjective Norm)

Code	Item	Quelle
SN1	Kollegen, die mein Verhalten beeinflussen denken, dass ich IBM Connections nutzen sollte.	Übernomen von Subjective Norm (Venkatesh et al., 2003, p. 452; Wang et al., 2014, p. 1055)
SN2	Kollegen, die mir wichtig sind denken, dass ich IBM Connections nutzen sollte.	
SN3	Kollegen, deren Meinung ich schätze denken, dass ich IBM Connections nutzen sollte.	

Social Influence (Network Externality)

Code	Item	Quelle
NE1	Generell denke ich, dass die meisten Kollegen, die für Organisation X arbeiten, IBM Connections nutzen.	Übernomen von Perceived Network Externality (Wang et al., 2014, p. 1055)
NE2	Insgesamt denke ich, dass die meisten Manager, die für Organisation X arbeiten, IBM Connections nutzen.	
NE3	Allgemein denke ich, dass die meisten Mitarbeiter, die für Organisation X arbeiten, IBM Connections nutzen.	

Benefit of Sharing (Intrinsic Motivation)

Code	Item	Quelle
IB1	Der Wissensaustausch mit Kollegen via IBM Connections stellt mich zufrieden.	Übernomen von Intrinsic benefit (Wang et al., 2014, p. 1055)
IB2	Durch den Wissensaustausch, mit Kollegen via IBM Connections, verwirkliche ich, was mir persönlich wichtig ist.	
IB3	Der Wissensaustausch mit Kollegen via IBM Connections gibt mir ein Gefühl der Aufgabenerfüllung.	

Benefit of Sharing (Extrinsic Motivation)

Code	Item	Quelle
	Wenn ich Wissen mit Kollegen via IBM Connections teile, …	Übernomen von Extrinsic benefit expectations (Wang et al., 2014, p. 1055)
EB1	… werde ich an Anerkennung und Respekt gewinnen.	
EB2	… werden die Beziehungen zu Kollegen gestärkt.	
EB3	… wird die Zusammenarbeit mit Kollegen verbessert.	

General Trust (Ability based Trust)

Code	Item	Quelle
	Meine Organisation X Kollegen, mit denen ich in Kontakt komme via IBM Connections...	Übernomen von Ability based Trust (Mayer & Davis, 1999, p. 136)
AT1	... sind kompetent in der Durchführung ihres Jobs.	
AT2	... haben spezielle Fähigkeiten, die unsere Leistungsfähigkeit erhöhen können.	
AT3	... sind gut qualifiziert.	

General Trust (Benevolence based Trust)

Code	Item	Quelle
	Meine Organisation X Kollegen, mit denen ich in Kontakt komme via IBM Connections...	Übernomen von Benevolence based Trust (Mayer & Davis, 1999, p. 136)
BT1	... sind sehr besorgt über mein Wohlergehen.	
BT2	... achten darauf, was mir wichtig ist.	
BT3	... geben sich besondere Mühe, um mir zu helfen.	

General Trust (Integrity based Trust)

Code	Item	Quelle
	Meine Organisation X Kollegen, mit denen ich in Kontakt komme via IBM Connections...	Übernomen von Integrity based Trust (Mayer & Davis, 1999, p. 136)
IT1	... werden in ihrem Verhalten durch faire Prinzipien geleitet.	
IT2	... sind konsequent in ihren Handlungen und Verhaltensweisen.	
IT3	... stehen zu ihrem Wort.	

Organizational Climate (Knowledge-exchange norm)

Code	Item	Quelle
KE1	Wissensaustausch bei Organisation X ist die Norm.	Übernomen von Collaboration norms (Kügler et al., 2015, p. 818)
KE2	Wissensaustausch wird bei Organisation X als wichtig angesehen.	
KE3	Zum Wissensaustausch wird bei Organisation X ermutigt.	

Organizational Climate (Innovative Climate)

Code	Item	Quelle
IC1	Organisation X ermutigt zum Vorschlag von innovativen Ideen.	Übernomen von Innovativeness (Bock et al., 2005, p. 108)
IC2	Organisation X legt viel Wert darauf einen neuen Weg zu gehen, um innovativ zu sein, auch wenn dieser sich als Fehler herausstellen könnte.	
IC3	Organisation X ermutigt die Suche nach neuen Methoden, um Aufgaben zu erfüllen.	

Individual Differences (Organizational identification)

Code	Item	Quelle
AC1	Wenn jemand Organisation X kritisiert, fühlt es sich wie eine persönliche Beleidigung an.	Übernomen von Organizational Identification (Mael, & Ashforth, 1992, p. 122)
AC2	Wenn ich von Organisation X spreche, sage ich meistens: "wir" und nicht "sie".	
AC3	Wenn jemand Organisation X lobt, fühlt es sich wie ein persönliches Kompliment an.	

Individual Differences (Personal innovativeness)

Code	Item	Quelle
PI1	Allgemein, wenn ich von einer neuen Technologie höre, suche ich nach Möglichkeiten, um damit zu experimentieren.	Übernomen von Personal innovativeness (Wang et al., 2014, p. 1055)
PI2	Ich bin in der Regel die/der Erste, die/der neue Technologien ausprobiert.	
PI3	Generell mag ich es mit neuen Technologien zu experimentieren.	

Vielen Dank für Ihren Beitrag!

Wenn Sie Interesse an den Ergebnissen haben, werden diese ca. im Juli im Intranet zu finden sein oder Sie können sich mit dem Intranet Projektteam in Verbindung setzen.

Betreff: Erinnerung an die weltweite IBM Connections Umfrage bei Organisation X

Liebe Kolleginnen und Kollegen,

diese E-Mail dient zur Erinnerung, falls Sie die Umfrage zur Etablierung von **IBM Connections** als System für den Wissensaustausch bis heute noch nicht abgeschlossen haben, folgen Sie bitte dem Link:

[Link]

Die Umfrage steht bis zum **30. April 2015** zur Verfügung.

Ihre Teilnahme ist uns sehr wichtig, da Sie mich dadurch bei der Erstellung meiner Masterarbeit unterstützen und dem Intranet-Projektteam von Organisation X bei ihren nächsten Schritten helfen.

Das Ausfüllen des Fragebogens wird etwa 15 Minutendauern und ist völlig anonym. Da wir mehr über Ihre Meinung und Ihr Verhalten hinsichtlich IBM Connections erfahren möchten gibt es keine falschen Antworten.

Mit dem Absenden des Fragebogens bestätigen Sie die Teilnahme. Wenn Sie Fragen haben, zögern Sie bitte nicht, mich zu kontaktieren.

Für Ihre Teilnahme möchten wir uns im Voraus ganz herzlich bei Ihnen bedanken.

Melanie Mönch & Ihr Intranet Projektteam

Appendix III: Demographics of the sample

Table 31: *Demographic Information of Actual User*

Demographic construct	Frequency	Percent
Gender		
Male	149	60
Female	100	40
Location		
Germany	163	65
Hong Kong	44	18
United States	42	17
Job Position		
With managerial responsibility	92	37
Without managerial responsibility	157	63
Level of education		
High School	54	22
Vocational School	47	19
Bachelor	71	29
Master	48	19
Ph. D./Doctorate	1	.4
Other	28	11
Usage Frequency		
a day	45	18
a week	94	38
a month	86	34
a year	24	10
Total	249	100

Table 32: *Demographic Information of Non-User*

Demographic construct	Frequency	Percent
Gender		
Male	175	56
Female	136	44
Location		
Germany	236	76
Hong Kong	45	14
United States	30	10
Job Position		
With managerial responsibility	103	33
Without managerial responsibility	208	67
Level of education		
High School	115	37
Vocational School	70	22
Bachelor	49	16
Master	40	13
Ph. D./Doctorate	1	.3
Other	36	12
Total	311	100

Table 33: *Demographic Information of those, who do not know the system*

Demographic construct	Frequency	Percent
Gender		
Male	301	53
Female	263	47
Location		
Germany	395	70
Hong Kong	99	18
United States	70	12
Job Position		
With managerial responsibility	136	24
Without managerial responsibility	428	76
Level of education		
High School	218	39
Vocational School	173	30
Bachelor	73	13
Master	33	6
Ph. D./Doctorate	1	.2
Other	66	12
Total	564	100

Appendix IV: Abbreviations

Table 34: *List of Abbreviations*

Abbreviations	Description
AC	Organizational Identification
AT	Ability based Trust
AU	Actual Use
BI	Behavioral Intention
BT	Benevolence based Trust
EB	Extrinsic Benefit
EE	Effort Expectancy
FF	Facilitating Condition (Task-System Fit)
FO	Facilitating Condition (Organizational Support)
IB	Intrinsic Benefit
IC	Innovative Climate
IT	Integrity based Trust
KE	Knowledge-exchange Climate
NE	Network Externality
PE	Performance Expectancy
PI	Personal Innovativeness
SN	Subjective Norm

Appendix V: Factor loadings after rotation (varimax)

Table 35: *Factor loadings after rotation (varimax) for Actual User*

Item	Trust in colleague	Organizational Climate	Subjective Norm	Network externality	Performance Expectancy	Effort Expectancy	Innovativeness	Technical Support	Organizational Identification	Share Knowledge	Get Knowledge
	(AT/IT)	*(IC/KE)*	*(SN)*	*(NE)*	*(PE)*	*(EE)*	*(PI)*	*(FO)*	*(AC)*	*(AU)*	*(AU)*
AT1	.83										
AT 3	.82										
IT2	.80										
AT2	.80										
IT1	.79										
IT3	.78										
IC3		.86									
IC1		.85									
IC2		.84									
KE2		.75									
KE3		.72									
KE1											
SN2			.88								
SN1			.87								
SN3			.86								
NE3				.83							
NE1				.81							
NE2				.70							
PE2					.81						
PE3					.76						
PE1					.74						
FF2											
EE2						.86					
EE3						.85					
EE1						.78					
PI 1							.89				
PI 3							.88				
PI 2							.82				
FO1								.85			
FO2								.82			
FO3								.76			
AC3									.86		
AC1									.86		
AC2											
AU4										.93	
AU3										.88	
AU1											.86
AU2											.86

Table 36: *Factor loadings after rotation (varimax) for Non-User*

Item	Trust in colleagues (AT/IT)	Organizational Climate (IC/KE)	Behavioral Intention to Use (BI)	Subjective Norm (SN)	Performance Expectancy (PE)	Effort Expectancy (EE)	Innovativeness (PI)	Technical Support (FO)	Network externality (NE)	Organizational Identification (AC)
AT3	.85									
IT3	.84									
AT1	.84									
IT1	.83									
IT2	.81									
AT2	.79									
KE3		.87								
IC1		.83								
IC3		.81								
KE2		.80								
KE1		.77								
IC2		.73								
BI1			.85							
BI2			.84							
BI3			.82							
BI4			.81							
SN1				.89						
SN3				.88						
SN2				.87						
PE2					.85					
PE3					.84					
PE1					.72					
FF2										
EE3						.89				
EE2						.89				
EE1						.86				
PI3							.90			
PI1							.89			
PI2							.86			
FO1								.84		
FO2								.83		
FO3								.78		
NE3									.80	
NE1									.78	
NE2									.76	
AC3										.84
AC1										.84
AC2										.66