Connectivity Changes: Why Do Project Team Members Shift between Different States of Connectivity?

Research-in-Progress

Waizenegger Lena
University of Innsbruck, Department of Information Systems, Production and Logistics Management
Lena.Waizenegger@uibk.ac.at

Remus Ulrich
University of Innsbruck, Department of Information Systems, Production and Logistics Management
Ulrich.Remus@uibk.ac.at

Maier Ronald
University of Innsbruck, Department of Information Systems, Production and Logistics Management
Ronald.Maier@uibk.ac.at

Abstract

Ubiquitous connectivity has become normal in today's society. However, it is a two-edged sword bringing about positive and also negative side-effects. To be connected is a prerequisite in distributed teams in order to work efficiently and productive, yet there are times when project members suffer from too much or a lack of connectivity to fulfil their tasks. Little is known, though, about changes between the different states of connectivity, i.e. hyper-, hypo-, and requisite connectivity in project teams, and the triggers that cause such changes. By using a case study approach, this ongoing research aims to further investigate changes between different states of connectivity. The preliminary results indicate that influencing factors that lead to a change of the connectivity level could be categorized into the dimensions: personality, private environment, role expectation, project context, knowledge work and society.

Keywords

connectivity states, critical incident technique, distributed team, project team, triggers of connectivity change

Introduction

Connectivity as a metaphor to explain intra- and inter-organizational interactions has become more important in our interconnected world (Kolb 2008; Kolb et al. 2009; Murphy 2007). Generally, to be socially connected seems to be a good thing (Kolb et al. 2008). However, 'too much' connectivity, i.e. being always connected and feeling aligned to work, results in a blurring of occupational and private life putting strain on professionals (Tarafdar et al. 2011). Examples are checking mobile devices every five minutes or responding to E-mails at 4 am in the morning (Mazmanian et al. 2013).

Within this stream of literature, using ICT is seen to create practices and norms such as continual connectivity, vigilant availability, vigilant responsiveness, and escalating engagement (Mazmanian et al. 2013). Studies report about excessive use of mobile ICT, "moving [professionals] into a state of hyper-connectivity, which enables greater duration, intensity and direction of organizationally oriented behaviors, but can also be distracting or overwhelming" (MacCormick et al. 2012, p.3). While a certain state of connectivity is positive (requisite connectivity, connective flow), too little (hypo-) and too much (hyper-) connectivity are unintended and exhibit negative effects, such as disengaged behavior, sleep deprivation, distraction, ineffectiveness, feeling too much control, work-life conflict, or so-called 'job

creep', resulting even in depression if people do not disconnect from time to time (Kolb et al. 2012; MacCormick et al. 2012).

Although there is an increasing number of studies focusing on the issue of connectivity (e.g., MacCormick et al. 2012; Wajcman and Rose 2011), there are still important research gaps. First, there is a lack of studies that analyze how states of connectivity change over time, and how an optimal state of connectivity can be achieved and maintained. Knowing about the practices that change connectivity states is important to effectively control dysfunctional connectivity by project managers employing means of negotiation, coordination and control. Second, most studies miss to investigate connectivity and its group dynamics in a project context where unintended factors like project drift, software breakdowns or escalating project costs (Keil and Mähring 2010) as well as intended factors like upcoming deadlines and deliverables influence connectivity levels and intensity.

Thus, we investigate the phenomenon of connectivity in the context of project teams with our research question: "What antecedents trigger changes between different connectivity states?" We approach this question by conducting a longitudinal in-depth case study using a dialectic lens (e.g., Robey et al. 2002; van de Ven and Poole 1995) to understand the forces at play that trigger change of connectivity states over the course of a project.

Theoretical background

Constant connectivity is defined as being connected, available and responsive to work colleagues, friends or family members all the time and everywhere (Wajcman and Rose 2011). However, connectivity is no static situation, but a dynamic phenomenon as people change between the three states of connectivity "hyper-, hypo-, and requisite connectivity" depending on their external environment and their internal conditions. Hyper-connectivity is defined as exposed to an excess of connectivity, leading to longer and more intensive work modes, however, can revert into information overload, drain due to attention-exposing workflows and continuous interruptions. Hypo-connectivity is the state of having levels of connectivity insufficient to fulfill tasks and jobs, e.g., triggered by sluggish Internet connections or poor telephone reception. People who suffer from or aspire a lack of connectivity may miss important opportunities for engagement and will experience the "out of connection – out of the loop" phenomenon (Kolb et al. 2008; MacCormick et al. 2012). Requisite connectivity represents the optimal level to fulfill tasks at hand (Kolb et al. 2008), experiencing 'flow' (Csikszentmihalyi 1990) while being connected, as a state "where communication is highly effective, efficient and balanced in accordance with our needs and the demands of the task or situation at hand" (Kolb et al. 2008, p. 183). People interact with the technology in a way that they can focus solely on their task and lose any sense of time (MacCormick et al. 2012). Still, studies are scarce exploring the phenomenon of constant connectivity, its antecedents, the underlying dynamics and the resulting consequences.

One stream of literature investigates the paradoxical implications of constant connectivity. Due to extensive technological infrastructures people can connect anywhere and anytime, however, such opportunities shift expectations, norms and attitudes towards using ICT which could end up in unconscious pressures to be connected all the time and everywhere (Jarvenpaar and Lang 2005; MacCormick et al. 2012; Mazmanian et al. 2013). Middleton and Cukier (2006) shed light on the dichotomous idiosyncrasies of ICT by pointing out the functionalities and dysfunctionalities by revealing usage patterns which are even dangerous, distracting and anti-social.

Another subtheme in the literature deals with using ICT as a social skill. To know when to connect and to disconnect in today's professional but also private life is probably the quintessence to avoid the trap of constant connectivity (Mazmanian 2013; Murphy 2007). Handling connectivity and learning to lead online is crucial for managers and supervisors as in the contemporary work life project teams are oftentimes scattered around the world, home office becomes more and more popular and an increasing number of meetings take place online (Kolb et al. 2009). While Jackson et al. (2003) emphasize the disruptive effect of E-mail messages and the negative consequences of using ICT, Wajcman and Rose (2011) advocate for an inherent aspect of technology in our everyday work life as connectivity is indispensable to fulfill tasks and jobs at hand.

Another stream of literature focuses on the addictive and stress-generating aspects of using ICT. Though researchers are not united in labelling the excessive use of technology as an addiction, they agree that

these dimensions are indeed problematic as a source of stress and overload (Griffiths 1996). Watson (2010) ascribes those dangerous developments to our culture of digital gratification as we are never pleased with what we have got and any possible micro-boredom is destroyed in its wake. However, further studies do not just accuse society for such constant connectivity but shed light on the individual level and point to deficient self-regulation, age or extraversion as driving forces to end up in hyper-connectivity (Soror et al. 2012; Bianchi and Philips 2005). Barley et al. (2011) reveal that people declare E-mails not just as a source but even as a symbol of stress and overload. Next to work-related communication also social networking sites cause negative consequences like "social overload" (Maier et al. 2014) resulting from duties to give social support to members in social networking sites. Factors such as the extent of usage, the number of friends, the subjective social support norms and the type of relationship, be it only-online or offline friends, stimulate "overload" as the numbers of messages and requests to react to social information increase (Maier et al. 2014).

Especially the stream of literature dealing with influencing factors which lead to constant connectivity and particularly to a change between connectivity states is in its infancy. Mazmanian et al. (2013) present the spiral of escalating engagement and diminishing autonomy which results from whipping up the actual behavior of individuals and the collective expectations concerning responsiveness and availability. It is the interplay between individuals and community that changes the level of connectivity. With the help of the frames of reference theory, Mazmanian (2013) reveals that due to a shared understanding of different usage of ICT the observation group enjoyed the advantages of ICT while the other group fell into the trap of constant connectivity as team members developed shared expectations of ubiquitous availability. MacCormick et al. (2012) identify individual factors leading into a certain connectivity behavior of employees, but, they do not investigate how the states of connectivity change. We want to fill this gap in the literature and build on and complement the findings of MacCormick et al. (2012) to explain how and when such changes between states of connectivity occur.

Research design and methodology

We will use an exploratory case study approach with an interpretive lens to collect and analyze data (Myers and Walsham 1998). The main source of data will be interviews with project team members of a large EU-funded research project aiming to develop ICT supporting workplace practices in small and medium-sized enterprises. This inter-organizational collaboration project started in November 2012, lasts for four years and comprises 17 partner organizations with altogether more than 40 team members.

While the majority of studies mentioned before focus on one specific IT artifact such as Blackberry, E-mail etc., it is evident that unintended effects like invasion of privacy, work-home conflict, anti-social behavior, distraction in the case of information overload and being linked to work up to 24/7 do not only arise due to using a single IT artifact but due to a combination of various and often synchronous ICT (Ayyagari et al. 2011; MacCormick et al. 2012; Middleton and Cukier 2006). We therefore decided to include all IT artifacts which (potentially) enable to be connected (Wajcman and Rose 2011). Examples would be text chat and videoconferences like Skype, E-mail, phone calls, co-authoring tools like GoogleDocs or Wikis, social networking sites like Facebook or Twitter or file-sharing like Dropbox or GoogleDrive.

We plan on conducting semi-structured interviews with project team members every 3-4 months. We carried out two pilot interviews with project team members to validate our interview guideline (see appendix; Fontana and Frey 2005). This guideline comprises a conceptualized model of connectivity from a process perspective developed on the basis of the literature (see section "Theoretical Background") and consists of three parts, (1) triggers, i.e. influencing factors which could lead to a change of connectivity states, (2) negotiation processes between the project team members about the "new" connectivity states caused by the triggers, (3) the intended and unintended effects of the connectivity states. The interviews lasted between 30-80 mins. For the purpose of this paper, we focus on influencing factors and motivated project team members to talk about any specific days or project phases where they suffered from either hyper- or hypo-connectivity or experienced a state of connective flow. We found the critical incident technique suited to gather important and detailed information about behavior in defined situations (Flanagan 1954).

Talking about critical incidents in which the interviewees experienced hypo-, respectively hyper-connectivity was most helpful to identify and further analyze underlying triggers of changes between connectivity states. The follow-up questions gave the interviewees the chance to refer back to described events. So far, we conducted 21 interviews with project team members, work package managers and consortium managers in February 2014. Their professional background ranged from HR managers, consultants, IT experts, senior researchers to professional domain experts in the sectors studied in the project. As the project team comprises partners from eight European countries, it also allows us to capture a multi-faceted picture in respect to cultural differences. Demographic diversity was completed by conducting interviews with members of almost every age cohort.

The interviews were tape-recorded and notes were taken during the whole process. Interviews were transcribed, coded and analyzed with the help of NVIVO. We used the axial coding technique of grounded theory according to Strauss and Corbin (1990) and conducted an iterative textual analysis of the interview transcripts to understand relationships between connectivity patterns and perceived communication flow, individual perceptions of awareness and responsiveness and emerging dynamics concerning connectivity levels within the project team (Mazmanian et al. 2013). Textual analysis is not yet complete, however, the answering schemas recur and therefore it is likely that most findings are already stable and will be described in the following.

Preliminary findings

The triggers that change connectivity states are categorized into the following dimensions: personality, private environment, role expectations, project context, knowledge work, and society (Figure 1). These dimensions directly influence the connectivity patterns of single project team members and indirectly the connectivity level of the whole project team. For example, team members who are constantly available and responsive will accelerate the communication within the team and the overall connectivity level.
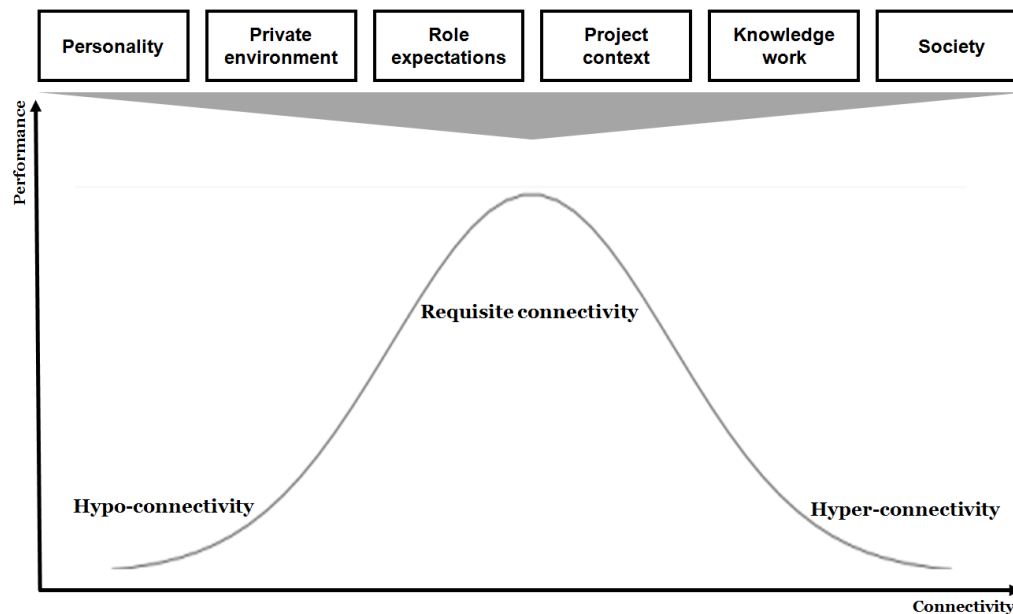

**Figure 1: Influencing factors that change the level of connectivity
(adapted from Kolb et al. 2008)**

Triggers that lead to changes of connectivity states

Personality

The team members' personality is usually reflected in their online behavior. Extroverts tend to communicate much more actively and enthusiastically online, tending to increase the connectivity level by

sending a lot of messages whereas introverts rather keep it short and feel distracted by too much information arriving.

"I see myself as person who slows down not the connectivity, well those goes back to me being an introvert, so I don't talk much, I write very short E-mails...I never ever send E-mails to the mailing list, so I direct contact people when I need some specific information". [and] "For example I am talking to you about a task...many people do not contact the person directly, they contact the whole group...so the mailboxes are overwhelmed with E-mails and of course the E-mail box has a pressure to at least to look what this is about so you get disrupted all the time." (junior researcher A)

This statement of an introvert person reflects the effort to prevent hyper-connectivity as he never uses the whole mailing list to communicate to just one person and therefore reduces the amount of information flowing around which helps other team members not falling into the trap of hyper-connectivity. He also points to the overwhelming effect of information flow, caused by other members, which increases the level of connectivity of all project team members and could result in hyper-connectivity due to pervasive interruptions and a ubiquitous pressure to answer such E-mails. The following statement of an extrovert person shows the impulsive way of solving problems by just connecting to other project members, increasing his and the other persons' connectivity level implicitly.

"It is personality because sometimes in order to clarify things, oh can we go on skype it is just 2 minutes I clarify this sentences which I don't understand, instead of saying I don't understand. Which is not so nice, maybe you have to interact with other ways for the information you need." (coordinator A)

As the following statement indicates, to connect or disconnect is a question of priority.

"...in this kind of project...you have to learn how to manage connectivity and information...because there is always hyper-connectivity...you have to manage and to prioritize things...there are times with a lot of things coming and times with less things coming." [and] "Of course, because if there is an urgency, the urgency has to be taken care of no matter what time in the day." (coordinator A)

Depending on the status of work in the team member's life they choose to connect and answer E-mails during the weekend as it is part of their self-conception to be available all the time and everywhere. Others decide consciously to disconnect caring for their personal work-life balance. These different attitudes towards work reflect their ambitions and values as traits of their personality and either push them to or prevent them from being constantly connected and suffer from hyper-connectivity.

Private environment

The circumstances in team members' private lives play a big role for their connectivity patterns. The following statement shows that familial duties help knowledge workers to escape from the virtual world, so that family and friends trigger to go "offline".

"Coming Debbie home from school so ten to 3 I have stop what I am doing if I can and go down to say hello so greet, so it is a definite thing and this is the main one I think, and then just generally I just get a bit fed up and I go downstairs and just need a break and I have a bad back so I just stretch my legs a bit." (team leader A)

As this quote indicates, the health status is another factor influencing the behavior of being online. Some interviewees realized that the ubiquitous and pervasive availability reduces their quality of life and diminishes their well-being as it increases the workload, the stress level and the information overload. They went through a learning process and go consciously offline to take time for themselves, do sport or meet friends physically, outside of the virtual world which is mirrored in the two following statements.

"...and then in the evening I typically go home early, last year I used to stay here till six or seven o'clock but this was not very healthy...so I basically go home at five, go to the gym, meet some friends and after that I was also working last year but I try to change that because I stayed up always till one, two or three o'clock in the morning to work on some papers and reports but this is currently changing...working on the work-life balance, as everybody does " (team leader B) [and] "...and I might pop off to the gym and go back to do some more work." (team leader A)

Role expectation

Depending on the job role, project team members face different expectations concerning availability and responsiveness.

"The only time I am away from this is sometimes I refuse to answer anything and I actually move into my living room I leave my phone in the office, I don't listen to Skype and then people get very angry with me "I tried to talk to you the whole day why didn't you answer me?" (team leader C)

This quote shows the team members' shared understanding that team leaders should be constantly online and fulfill their collaboration and coordination roles to supply their team members with sufficient information. These expectations put pressure to be available around the clock and increase the number of requests if team leaders are not approachable which could drive them into hyper-connectivity.

As project team members do not just have one job role but many of them work in several projects or several roles, being for example a team leader, a lecturer and a programmer at once, the combination of these job roles have to be considered regarding overall communication patterns.

"...and I am not just working on this project, I have other projects going on of course because I am leading the social computing group here...so information overload is a good aspect in this respect..." (team leader B)

Hence, having different job roles could lead to information overload due to various distractions and requests from the respective project teams. While one job role might not lead to a state of hyper-connectivity, having responsibilities in different projects could lead to an excess of online activities as not just one, but several teams expect team leaders to be constantly available.

Project context

A drastic event like an exiting project partner increases uncertainty in the project team and therefore the amount of information circling rises rapidly as the remaining partners search for a solution, driving the whole team into hyper-connectivity, as stated in the following quote.

"...as a partner left the project and there were discussions of course going about on how we distribute the personnel and the money and that is typical a time when people having their own agenda and then they do not necessarily to be transparently and then there were discussions going on..." (coordinator A)

The connectivity level is correlated to the project timeline and goes up if there is a looming deadline. Moreover, the project culture plays an important role concerning team members' connectivity patterns. As the following statement shows, there is an underlying pressure and expectation of being available and responsive, so team members are urged more or less unconsciously to be "online" all the time and everywhere, resulting in a state of hyper-connectivity.

"...we have work package flash meetings traditionally, which means that we connect with the people who work online, then there is work package C flash meeting that takes us three hours of the day, but you also have the E-mails coming in...you have things coming in and going and also you have to rely people to finish up thing...some days if I have too much actually I wake up at four in order to process things." (senior researcher A)

Knowledge work per se

Knowledge workers operate most of their time in the virtual world. They connect to gather and share information, to solve problems and to understand how to proceed or to obtain work assignments. Members of distributed teams use communication media to coordinate and collaborate as the following quote indicates. To get connected is critical and therefore the nature of knowledge work itself is a trigger to be online.

"I use Skype a lot, Skype is the most critical medium...my organization got now 40 employees they are scattered one in Greece, one in we have got one in Paderborn, we have got one in Bremen, we have got some in West Wales, we have got one in England we are scattered at length and we all work from home

so communication media are critical to us as we communicate through Skype…I spend a lot of time online on Skype and in flash meetings.” (team leader C)

Working from home seems to become more and more popular and colleagues meet in the virtual world as a substitute for the usual office and connect with each other switching from a state of disconnection to virtual connection as the following statement shows.

“…society change plus of course that phenomenon that more people are working from home. I mean we have an increasing level of people work from home. If you go back to the 1980s it would be very uncommon for people to work from home now it’s pretty normal.” (team leader C)

However, many interviewees claim that they have to go “offline” to work constructively and in a concentrated way and disconnect from the flood of information. Knowledge workers are highly dependent on their technological equipment, though, and if there is any dysfunction, e.g., deficient access to a collaboration tool or sluggish Internet connection, work will be impeded respectively impossible driving them into a state of hypo-connectivity which is indicated in the following quote.

“…too little information arrives me as I do not have access to all systems yet and I mean although we have asked for access it is really a problem of IT administration and the people are aware that I need the access and they said that they provide it but it is actually not working just technologically…” (junior researcher B)

Society

Today’s society experienced a great and ongoing change in terms of connectivity as mobile devices have become peoples’ permanent companions and changed the way people live, work and communicate. As the following quote indicates, a “Pavlovian impulse” in people’s behavior is observable, as connect if they just have the possibilities to get connected. Being “online” becomes a virtue in the community we are part of and pushes us indirectly in the direction of hyper-connectivity.

“You do things automatically so there are habits…and I think we are, in terms of connectivity, we are in a situation where it is becoming more to be connected all the time and that is like eating all the time or watching all the time or playing all the time…” (senior researcher B)

The improving technological infrastructure provides new possibilities and it has become normal to chat with friends while waiting for the bus or checking E-mails while sitting down for lunch. The following statement indicates the shift of technological standards which does not just provide the possibility to get online but also the general expectations of ubiquitous connectivity leading to the thinking that hyper-connectivity becomes just normal. So people are in a state of hyper-connectivity and do not even know respectively do not even care about the overwhelming amount of information flowing in.

“If you learned to be pretty much always online you find it very hard not to be, which again raises questions. Once you get that level of ubiquitous connectivity what we are likely to see I guess …it would be in 2-3years you get, you find wireless everywhere that does have implication for the way you work, live and communicate.” (senior researcher B)

Moreover, the following statement shows that not just project partners or colleagues are distributed around the world, but also family members and friends. Being physically disconnected could be seen as a trigger to connect virtually to stay in contact and to maintain relationships.

”…it depends on how dispersed your social life is, I mean my girlfriend lives in Spain…and I live in Germany and in the UK…and this is not uncommon for a lot of people, now use these means…it become so critical to your social life…and I talk to her everyday, normal it is just normal. I mean ten years ago you couldn’t do that”…there is a huge a movement, a huge change in the way we live in a very short period of time and it’s ongoing.” (team leader C)

Conclusion

Connectivity is ubiquitous and pervasive in our everyday life. People become dependent and even addicted to technology. Still, this field is widely under researched (Bianchi and Phillips 2005). Our findings build on the model of states of connectivity developed by Kolb et al. (2008) and on MacCormick et al. (2012) who present the typical hyper-connectors, hypo-connectors and dynamic connectors. We

investigate why and how knowledge workers shift between the levels of connectivity. Our findings can be used to develop Kolb et al.'s (2008) connectivity model further as we identified influencing factors that lead to changes of connectivity states and grouped them into six dimensions. Understanding these triggers leading into hyper-, or hypo-connectivity is crucial for managers to effectively control for dysfunctional connectivity and therefore enhance their teams' productivity and efficiency. It is important not to take the dysfunctional connectivity patterns of project team members as given, but search for reasons in the six dimensions and to implement best practices to guide them into requisite connectivity.

Acknowledgements

REFERENCES

Ayyagari, R., Grover, V., and Purvis, R. 2011. "Technostress: Technological Antecedents and Implications," *MIS Quarterly* (35:4), pp. 831-858.

Barley, S. R., Meyerson, D. E., and Grodal, S. 2011. "E-mail as a Source and Symbol of Stress," *Organization Science* (22:4), pp. 887-858.

Bianchi, A., and Phillips, J. G. 2005. "Psychological Predictors of Problem Mobile Phone Use," *CyberPsychology and Behavior* (8:1), pp. 39-51.

Csikszentmihalyi, M. 1990. *Flow: The Psychology of Optimal Experience*, New York: HarperCollins Publishers.

Flanagan, J. C. 1954. "The Critical Incident Technique," *Psychological Bulletin (*51:4), pp. 327-358.

Fontana, A., and Frey, J. H. 2005. "The Interview," in *The Sage Handbook of Qualitative Research*, N. K. Denzin and Y. S. Lincon (eds.), Thousand Oaks, CA: Sage, pp. 695-727.

Griffiths, M. 1996. "Gambling on the Internet: A Brief Note," *Journal of Gambling Studies* (12:4), pp. 471-473.

Keil, M., and Mähring, M. 2010. "Is Your Project Turning into a Black Hole?," *California Management Review* (53:1), pp. 6-31.

Kolb, D. G. 2008. "Exploring the Metaphor of Connectivity: Attributes, Dimensions and Duality," *Organization Studies* (29:1), pp. 127-144.

Kolb, D. G., Caza, A., and Collins, P. D. 2012. "States of Connectivity: New Questions and New Directions," *Organization Studies* (33:2), pp. 267-273.

Kolb, D. G., Collins, P. D., and Lind, A. E. 2008. "Requisite Connectivity: Finding Flow in a Not-So-Flat World," *Organizational Dynamics* (37:2), pp. 181-189.

Kolb, D. G., Prussia, G., and Francoeur, J. 2009. "Connectivity and Leadership: The Influence of Online Activity on Closeness and Effectiveness," *Journal of Leadership and Organizational Studies* (15:4), pp. 342-352.

Jarvenpaa, S. L., and Lang, K. R. 2005. "Managing the Paradoxes of Mobile Technology," *Information Systems Management* (22:4), pp. 7-23.

MacCormick, J. S., Dery, K., and Kolb, D. G. 2012. "Engaged or just Connected? Smartphones and Employee Engagement," *Organizational Dynamics* (41:3), pp. 194-201.

Maier, C., Laumer, S., Eckhardt, A., and Weitzel, T. 2014. "Giving Too Much Social Support: Social Overload on Social Networking Sites," advance online publication of the *European Journal of Information Systems, pp. 1-18.*

Mazmanian, M. 2013. "Avoiding the Trap of Constant Connectivity: When Congruent Frames Allow for Heterogeneous Practices," *Academy of Management Journal* (56:5), pp. 1225-1250.

Mazmanian, M., Orlikowski, W. J., and Yates, J. 2013. "The Autonomy Paradox: The Implications of Mobile Email Devices for Knowledge Professionals," *Organization Science* (24:5), pp. 1337-1357.

Middleton, C. A., and Cukier, W. 2006. "Is Mobile Email Functional or Dysfunctional? Two Perspectives on Mobile Email Usage," *European Journal of Information Systems* (15:3), pp. 252-260.

Murphy, P. 2007. "You Are Wasting My Time: Why Limits on Connectivity are Essential for Economies of Creativity," *Business Review University of Auckland* (9:2), pp. 16-26.

Robey, D., Ross, J. W., and Boudreau, M. 2002. "Learning to Implement Enterprise Systems: An Exploratory Study of the Dialectics of Change," *Journal of Management Information Systems* (19:1), pp. 17-46.

Soror, A. A., Steelman, Z. R., and Limayem, M. 2012. "Discipline Yourself Before Life Disciplines You: Deficient Self-Regulation and Mobile Phone Unregulated Use," in *Proceedings of the 45th Hawaii International Conference on System Sciences,* Los Alamitos, CA: IEEE Computer Society Press.

Strauss, A. L., and Corbin, J. 1990. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*, Newbury Park, CA: Sage.

Tarafdar, M., Tu, Q., and Ragu-Nathan, T. S. 2011. "Impact of Technostress on End-User Satisfaction and Performance," *Journal of Management Information Systems* (27:3), pp. 303-334.

van de Ven, A. H., and Poole, M. S. 1995. "Explaining Development and Change in Organizations," *The Academy of Management* (20:3), pp. 510-540.

Wajcman, J., and Rose, E. 2011. "Constant Connectivity: Rethinking Interruptions at Work," *Organization Studies* (32:7), pp. 941-961.

Appendix

Interview guideline

The actual guideline contained a description about the phenomenon of connectivity in general, the purpose of this study and a short presentation of the three different states i.e. hyper-, hypo-, and requisite connectivity.

Introduction (project information)

Firstly, would you mind to tell us something about your role and function in "Project X", what you have to do and what are your responsibilities?

Dynamics of connectivity

When you think back to the first year of "Project X" can you remember any critical incident more precisely any specific day or even project phase where you suffered from too much connectivity respectively too little connectivity in order to fulfil your tasks effectively?

Could you focus on one specific day where such a state of hyper-, respectively hypo-connectivity occurred and describe when and for which reasons be it professional or private you use communication media during the day?

Referring to this critical day or phase did you have any specific group or colleagues with whom you are connected the most?

Could you identify any specific influencing factors respectively triggers why such an escalation of connectivity respectively a lack of connectivity occurred?

How do you experience such critical incidences and do you have any tricks how to cope with them?

Thinking back to this day respectively period do you think the amount of connectivity (being available and responsive) has any impact on the project outcome respectively the outcome of the work package?

What do you think is your role in this whole communication and connectivity process? Can you talk about any critical incidences where you have influenced the level of connectivity and the amount of information flowing around?

Can you think of any other critical incidences where you experienced a change in the connectivity level and what triggered this change?

Negotiation process

We assume that there happens a mainly unconscious negotiation process concerning the "right" connectivity level within the team.

Can you tell us about a specific incident where you experienced such a conscious respectively unconscious "negotiation process since the start of the project?

Could you even describe the process of levelling out the connectivity patterns, when did it take place and in which context? Can you remember how long it took or even holds up this negotiation process?

What respectively who were the decisive factors in this process?

Intended and unintended effects

How do you experience the use of mobile devices and the various communication media in your professional but also private life? Can you think of any advantages or disadvantages?

How quick do you respond to messages in general and do you expect that the others are as available and responsive as you are?

How do you feel in general about the amount of information flow in the project team? Do you think there is a prevailing state of hyper-connectivity or rather hypo-connectivity or even a perfect level in order to work efficiently?

Can you describe any specific incident where you get interrupted all the time and couldn't concentrate on your work anymore?

Regarding the daily routine of the project…Can you think of any instances where the project has influenced your private life?

What do you think is going wrong concerning the communication patterns in the project team?

Do you have any recommendations to improve the situation concerning the connectivity patterns?

The faster we act – the faster we must act!" and "The society is moving in internet speed" What do you think about these statements in the project-related context of "Project X"?

Thank you very much for this interview and your time!