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Social Media Driven Value Creation in a Corporate and Academic Learning Context

"An Explorative Study"

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Content Description: This Master thesis assesses sources of value creation in social media usage in corporate and academic learning situations. The consideration of obstacles in the value creation process complements the analysis.

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Abstract

This Master thesis aims to enhance the understanding of how value can be created using social media in corporate and academic learning situations. Based on the value creation theory by Normann & Ramírez network related, offering related and macro- level related factors are identified in a qualitative, deductive approach. Inductive elements arise as additional factors of value creation are derived from the findings. As a context specific factor to value creation it is assessed by means of quantitative research instruments whether technology acceptance of social media differs in informal learning situation compared to formal learning situations. Based on this analysis insights are gained for value creation. In a more explorative way, obstacles to value creation are brought up in the third part of the analysis. As a final step, factors of value creation and obstacles to this process are summed up in a conceptual framework. In the discussion ways to overcome the presented obstacles are briefly touched upon, considerations to informal learning are given as well as business opportunities and innovation with respect to social media tools in learning are discussed.

Key Words

Social Media, Learning, Training, Value Creation, Informal Learning, Formal Learning, Web 2.0 Technologies, Value Constellation, Technology Acceptance

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List of Abbreviations

EU 27 – European Union (27 Member States)

SDL – Service Dominant Logic

TAM - Technology Acceptance Model

MPCU – Model of PC Utilization

1 Social Media – A Source of Value Creation in Learning

"Social media is a great invention." (Strate, 2011) In today's world, web 2.0 technologies are gaining momentum in society as an increasing number of individuals adopt it. Taking the example of Facebook, one of the most popular social networks, a rapid development takes place. "While it took radio and television 38 years and 13 years, respectively to reach 50 million users, it took Facebook less than nine months to reach 100 million users." (Patel, 2010, p. 60)

Social media has the potential to provide a lot of value to the user. Engaging in social media "[…] is a way of building your networks, it is a way of actually more or less in real time to have the possibility to communicate with the people you know." (Strate, 2011) 57% of all internet users in the EU 27 use advanced communication services. In particular 35% of them use instant messaging, 26% of all internet users post messages and do telephone or video calls over the internet and 25% read weblogs. Statistics about the sharing of audiovisual content of the year 2008 reveal that 38% of all EU27 citizen or 61% of all internet users obtain and share audiovisual content. Activities in which individuals most often engage in is downloading, listening to music, watching films and playing games. Also podcasting and exchanging music and films is popular. Other activities comprise peer-to-peer file sharing, playing network games, podcasting, browser-based news feeds, uploading self-created content and listening to web radios (Redecker & Ala-Mutka & Punie, 2010).

From this informal leisure context, social media and the functionalities of web 2.0 are increasingly transferred to a business or academic context. In this new context social media is used for knowledge sharing, cooperation, communication, formal and informal learning. "I like it very much. I'm very positive towards it. It is the way to work in the future. A lot of people are used to it. Therefore it is really easy to get people to use it as well. We want everyone to contribute with their knowledge and social media is a good tool." (Melke, 2011) A rising number of academic institutions experiment with social media in education and simultaneously a lot of companies shift their investment to new communication tools.

In view of this development it becomes increasingly important to assess *how value can be created by means of social media in this corporate or academic learning context.* This represents a critical issue and therefore is chosen to be the main research question of this Master thesis. Additionally, it is of interest if technology acceptance of social media usage in formal learning situations compared to informal learning situation differs, especially if this

aspect is seen as a context-specific factor to value creation. Against this background, it is also of interest to analyze whether there are any obstacles to the value creation process, when implementing social media in an academic or corporate context. Possible solutions to overcome these obstacles are then presented in the discussion of this thesis. Subsequently, the rising use of social media in education, business and society as a whole is illustrated to the reader.

1.1 The Rising Use of Social Media in Education

Young people perceive the internet as a place to learn from another, meet people with similar interests and possibly receive expert knowledge (Redecker & Punie, 2010). The change in learning needs of the younger generation and the advancement of digital technology, lead a lot of educational institutions to experiment with social media in class, which resulted in an array of case studies. Within in-class experiments blogs (41%) and social networking tools (40%) are the most often used applications. Other tools comprise discussion platforms (29%), wikis (29%), photo and video sharing services (23%), podcasts and vodcasts (14,5%), social bookmarks (13%) as well as virtual realities (Redecker & Punie, 2010). The aims behind the introduction of social media in education vary a lot. They range from the development of new ways of learning (68%), over the improvement of collaboration (57%) to enhance students' motivation (49%). Other objectives include the introduction of peer-to-peer support, increase in the accessibility of learning, improvement in the learning results, introduction of self-directed learning, linking learners with society and the personalization of learning (Redecker, Punie, 2010).

1.2 The Growing Importance of Social Media in Business

Not only educational institutions also corporations have started to invest in social media tools. Social media is seen as a powerful learning tool, especially by younger workers who are born later than 1980, so called millennials, as a study by Patel (2010) has shown. 34,2% of the millennials think that social media helps to learn truly useful things, for generation X this percentage amounts up to 26,6% and 22,5% respectively for baby boomers. Beyond that 38,1% of the millennials judge social media as a tool with which you learn more in less time. For generation X, this share is 27,8%, and for baby boomers it represents 22,2%. Social media assists to get better work done - 29,6% of millennials share this opinion, for generation X and baby boomers the respective numbers are 22,2% and 19,3%. Beyond that 21,5% of millennials believe that social media assist to get more work done, for generation X the percentage is 14,9% and for baby boomer it amounts up to 12,5% (Patel, 2010). This statistic

indicates that in future the use of social media is increasingly gaining momentum as younger generations perceive it as a useful tool in their daily work. At the moment, shared work spaces, as SharePoint and Google Docs (42%) represent the most often used social media tools at work, followed by social networks (19,9%), wikis (19,2%), blogs (16,7%), podcasts (14,9%) shared media (11,6%). Less used tools represent micro-blogs (7,7%), social bookmarking (2,5%), virtual worlds (1,3%) and augmented realities (0,4%) (Patel, 2010). This is in line with another study by McKinsey which identifies peer-to-peer networks, collective intelligence, social networks, and blogs as the most often used social media tools in corporations (Bughin & Manyika, 2007). Companies use a combination of web 2.0 technologies to link with the customers (70%), e.g. receive customer-to-business feedback, to explore new customer and markets and for customer services. 51% of companies use social media tools as an interface between them and third parties as suppliers and customer mostly in order to improve integration and communication. The use of web 2.0 technologies to collaborate internally is also very important for 75% of the companies. Knowledge management and product design development are included in the latter point (Bughin & Manyika, 2007). Concerning return on investment in web 2.0 technologies, the majority of early adopters and fast followers is either very satisfied or somewhat satisfied. When rethinking their investment, 42% think they invested at the right time but should have invested more in the company's internal capabilities. 24% of the respondents share the opinion that they invested too late and that the technology impacted the industry. The top three social media tools in which companies plan or already invest in are web-services, collective intelligence and peer-to-peer services, while the least considered web 2.0 technologies for investment are mash-ups, blogs and wikis (Bughin & Manyika, 2007).

1.3 Social Media in Society and Informal Learning

Social media has the potential to further informal learning in society and thereby reinforce and complement the role of the internet as an important tool for information sharing and information gathering. An essential prerequisite for the use of social media is internet use. 60% of the population between the ages of 16 to 75 years in the EU27 use the internet at least once a week, 48% uses it on a daily basis. Seeking information is one of the most important motivations for internet use, whereby 51% search for information relating to goods and services, 33% for information about health and 31% seeks news and magazine stories. Beyond that 31% search information for learning and study related purposes, this represents a rise from 8% in the year 2007 (Redecker & Punie, 2010). These figures indicate that a lot informal learning does take place outside any institutional boundaries. In this context social

media has the potential to allow for a more interactive usage of the internet, as social media technologies facilitate communication interaction and sharing. Informal learning is not only existent outside institutions, however also plays an essential role within a company, as "[…] up to 83% of workplace learning occurs informally or incidentally." (Garrick, 1998, p. 129)

1.4 Significance of the Study & Contributions

The empirical background has illustrated to the reader that social media tools gain more importance in society in total, but also act as instruments to complement a learning situation or facilitate communication, interaction and sharing. More and more investment is considered in this area. Moreover, in today's time companies compete on the human resources and knowledge which they internally accumulate. Knowledge accessibility, idea generation and expertise sharing becomes an essential prerequisite to reach a competitive advantage (Macneil, 2001; Mayika & Roberts & Sprague, 2007). Also academic institutions experiment with new technologies and try to innovate their teaching approaches. Therefore, it is of uttermost importance to understand how value can be created with social media tools in learning situations. Secondly, it must be assessed if the technology is accepted in one context, e.g. the leisure environment in which naturally informal learning takes place compared to a more formal learning context. Implications for value creation, e.g. to leverage the characteristics of an informal learning should be analyzed. While the main analysis of this thesis does not differentiate in particular between value creation in informal and formal learning, these considerations are picked up in the discussion in the concluding part of this thesis. Based on the empirical findings obstacles in the value creation process are illustrated to the reader. While a lot of studies look at the exploitation of social media as a communication tool with external stakeholders, this study intentionally has an internal focus. Existing studies, as will be evident in the literature review, give an array of suggestions how different web 2.0 technologies can be used in training or education from a practical or learning theoretical perspective, however, these studies miss the direct link to value creation and mechanisms of value destruction are neglected.

1.5 Disposition

After the reader has been introduced into the topic from a practical point of view, the purpose of the study is outlined more detailed and important terms to this thesis are defined in chapter two. Chapter three consists of a literature review, which gives the reader a theoretical based reasoning for the importance of this thesis. Chapter four justifies social media usage in training situations from a learning theoretical perspective. However, this chapter stands

isolated from the theoretical framework, which is presented to the reader in chapter six and is solely based on value creation and technological acceptance theories. The mixed method research approach of this thesis is described in the methodology in chapter five. The analysis and main findings are contained in chapter seven, which is structured according to the identified sources of value creation. In the final part of this chapter obstacles to the value creation process are brought up. Chapter nine summaries the findings of this theses and a theoretical framework is brought up in the conclusion. Chapter ten discusses the use of social media in learning situations from a broader perspective, finally illustrates limitation to this study and gives suggestions for future research.

2 Purpose of the Study

The higher-level purpose of this study is to develop knowledge about social media usage in corporate and institutional learning situations. In particular this thesis equips the reader with valuable insights of how social media can create value in an educational context.

2.1 Managerial Implications

Managerial implications will be derived in the discussion from the results of the analysis and findings. It will be assessed if differences in technology acceptance of social media in formal learning situations compared to informal learning situations can be exploited in the corporate and academic context. Advices of social media usage in corporate or academic learning are given. Beyond that tentative approaches to overcome the identified obstacles in the value creation process are provided, however it is beyond the scope of this study to fully examine this aspect and therefore leaves room for further studies. Ultimately, it is also discussed whether the findings of this study can be transferred to another context.

2.2 Research Questions

In the process to develop knowledge about social media usage in an educational context, value creation is the focus of the first research question. The main analysis of this study is based on the value creation theory by Normann & Ramírez (1998). This theory assists to conceptualize, guide and structure the analysis. The first research question is the following:

1. How can value be created using social media in a corporate and academic learning context?

In order to gain specific, detailed and deep insights to the value creation process, a qualitative deductive approach has been selected to answer this question. Inductive elements arise as factors of value creation outside the ones of the employed value creation theory are searched for. Additionally, the insights from the second research question give input to assess if context-specific factors impact the value creation by means of social media in an educational context. Technology acceptance of social media in different situations is the focus of the second research question of this Master thesis. Quantitative research instruments combined with a deductive approach based on value creation and technology acceptance theory are employed in the answer for this question. Absolute levels of technology acceptance are not of interest in the analysis, but the difference of social media acceptance in different situations is the focal point. Subsequently, the second research question is presented:

2. How does the technology acceptance of social media usage differ in formal learning situations compared to informal learning situations?

While the employed theory focuses on value creation, it neglects any obstacles, which can arise in this process. The third research question therefore assesses this aspect:

3. Which obstacles arise in the value creation process, when implementing social media in an academic or corporate learning context?

The approach to answering this third question is inductive and explorative as it is based on empirical findings and not supported by theory.

2.3 Delimitations

Unlike other studies this study views social media exclusively as an internal communication and learning tool and not as an external marketing tool. Beyond that it limits itself to internal learning situations, and therefore does exclude learning situations between customers and the company, for instance situations in which a company learns about the customer's needs through a blog. Thus the focus of this study is the use of social media in higher education or corporate learning from a pure internal training perspective. Hereby, external parties to the learning process are considered to a limited extent only. Moreover, the analysis emphasizes value creation with social media in higher education and corporate learning. Therefore, other academic institutions, e.g. primary schools, are not considered in the analysis and discussion. However, some inferences from the analysis of this thesis might still be applicable to them as well. The main focus of this thesis is value creation. The analysis of technology acceptance of social media in different context, i.e. informal learning and formal learning, is only seen as a context-specific impact factor to value creation. The analysis of technology acceptance therefore only possesses a supporting role and is not the main focus. While the main research question of this paper is how value can be created using social media in formal learning situations, the question of additional value creation in informal learning situations in a leisure context is not examined in the scope of this study.

2.4 Key Definitions

In the subsequent section key terms, which are relevant for this thesis are outlined to the reader to increase his or her understanding of them.

2.4.1 What is social media?

A consistent definition of the term social media does not exist in the literature, but different authors emphasize different aspects in the overall concept of it. Kaplan & Haenlein (2010) highlight Web 2.0 technologies and user generated content, as they define social media as "[…] a group of Internet-based applications that build on the ideological and technological foundations of web 2.0, and that allow the creation and exchange of User Generated Content." (Kaplan & Haenlein, 2010, p. 61) In contrast to that Evans (2008), views social media in his expanded more ideological definition as a democratization instrument, which shifts a one-way broadcast mechanism, to a peer-to-peer communication network, which accesses the "wisdom of the crowds". Hence his definition of social media is the following: "Social media is the democratization of information, transforming people from content readers into content publishers." (Evans, 2008, p.33) The focus of the definition by Jue & Marr & Kassotakis (2009) lies on the participation and interaction between people in the form of sharing, collaborating, connecting and communicating. In their book, they adopt the definition of social media from the one of a senior manager at British Telecom, who said "Social media is all about participation." (Jue & Marr & Kassotakis, 2009, p. 4-5) This view on social media is the one which most important to the analysis in this thesis as value is first created in the interaction of users and social media tools only present the empty infrastructure. Therefore, the notion of interaction is essential. On a critical note Brogan (2010) asserts social media to be a buzzword with slightly different connotations, as user-generated content for instance. He simply defines social media as "the two-way Web." (Brogan, 2010, p.39) The conversation prism by Brian Solis and JESS3 (2011) gives an overview about different social media and is appended (Appendix I, Figure 4, p. 83).

2.4.2 Formal Learning, Informal Learning & E-Learning

Formal learning and informal learning are central to this study and will now be defined. The definition of formal learning by Coles and Werquin (2007) is adopted to describe how formal learning should be understood in the context of this study. According to them "Formal learning can be achieved when a learner decides to follow a programme of instruction in an educational institution, […] or in the workplace. Formal learning is […] recognized in […] a

certificate." (Coles & Werquin, 2007, p. 25) For the concept of informal learning a number of competing definitions exist. These definitions mostly differ in the following dimensions: the learning context, the level of intention, the structure of the learning process, the integration with daily life and the superiority to other forms of learning. Coles and Werquin (2007) stress that informal learning takes place outside organized education; "Informal learning results from daily work-related, family or leisure activities. It is not organized or structured (in terms of objectives, time or learning support). Informal learning is in most cases unintentional from the learner's perspective. It does not usually lead to certification." (Coles and Werquin, 2007, p.26) According to Marsick & Watkins (1990), however, informal learning can take place or be encouraged by institutions, and also more often in a leisure environment. It is typically not class-room based, nor structured, but the control is on the learner. Schugurensky, D. (2000) identifies three forms of informal learning based on the learner's intentionality and awareness of the learning situation. The author distinguishes self-directed learning, in which an individual engages in self-driven intended learning projects, the unintended but conscious incidental learning, and socialization. The latter is neither intended nor conscious and describes the learning of behavior and skills in everyday life. Eraut (2004) also differentiates between different forms of informal learning, however, only on one dimension, namely intention. Deliberate learning has a high level of intentionality, reactive learning a varying one and implicit learning is not intended at all. For the purpose of this thesis a broad definition informal learning is employed. Informal learning is any form of learning which is not specifically organized and conducted by an educational institution or company training department. Informal learning has varying degrees of intentionality, structure, control and spontaneity. While formal learning can take place in informal environments, informal learning can also take place in more formal environments as during daily work situations. Although sometimes used interchangeably, informal learning should be contrasted to the concept of non-formal learning. The latter can occur "when an individual follows a learning programme but […] and does not lead to certification. However, it can be structured by the learning institution and is intentional from the learner's point of view. " (Coles & Werquin, 2007, p.25 -26)

Finally, the term e-learning is briefly illustrated to the reader. While e-learning 1.0 represents a mostly one-directional teaching method through electronic means, the key characteristics of e-learning 2.0 is the social construction of knowledge in a more involving, engaging and interactive learning environment (Brown & Adler, 2008).

3 Literature Review

After the relevance this study has been introduced from a practical point of view, an overview of academic articles in the field is now presented to the reader. This gives a theoretical justification of the focus of this study. A tabular literature overview is appended (Appendix II, Table 5, p. 84 - 93). The nonexistence of articles which simultaneously analyze value creation by means of social media as well as context specific factors as informal and formal learning in a corporate or academic setting with regard to social media leads to the contemplation of a broader array of articles. Therefore, articles which involve social media usages in formal learning situations or informal learning situations are considered. Additionally, articles about the general concept of informal learning in an academic or corporate environment are included to deepen the understanding of existing research in this area.

Several authors have analyzed the use of one or several social media channels in formal education, of which virtual worlds represent the most researched one. Research about virtual worlds covers application, implementation, benefits and challenges (Wagner 2008; Case & King & DeSimone, 2010; Dreher, 2009; Eschenbrenner, Nah & Siau, 2008; Berger, 2008) and capabilities of virtual worlds for sharing and interaction are covered (Pollitt, 2009; Prasolova-Forland, 2004). Virtual worlds are also seen as a tool to provide richer information environments (Sidorko, 2009), to increase student engagement (Hornik & Thornburg, 2010) and to reach action (Wagner & Ip, 2009) or blended learning (Little, 2009). While Shen & Eder (2009) analyze students' intention to use virtual worlds Robbis & Butler (2009) link a framework about the purpose of virtual worlds with different instructional approaches. Blogs are researched as an instrument to span boundaries across isolated classes (Custin & Barkacs, 2010), to reflect upon subjects (Oikonomidoy 2009; Witt, 2010) to train critical thinking (Song, 2008), to build communities and reveal tacit knowledge (De Witt, 2010). Goldman (2008) evaluates if a seminar blog can enhance students' learning experience and it is also covered if the collaboration through blogs increases learning efficiency (Lu & Yeh, 2008). The application and implementation of a course wiki was assessed by Weyant & Gardner (2009) and the effect of virtual offices hours via Facebook on communication and perceived quality has been researched (Li & Pitts, 2010). Dunlap & Lowenthal (2010) explored whether the use of Twitter can enhance just-in time interaction and social presence in an online course.

While the aforementioned articles comprise only one type of social media, the subsequently described literature depicts general aspects of multiple channels used in formal education. A number of authors examine the opportunities, risks, challenges and benefits for different

stakeholders when introducing social media tools in education (Minocha, 2009a; Ashraf, 2009; Minocha, 2009b, Bhati et al., 2009). Wankel (2009) and Harris & Rea (2010) give an overview about specific usage possibilities of social media in education and the inherent advantages and disadvantages. The effects of social media usage on the learners' experiences and educational quality is also analyzed (Ashraf, 2009; Minocha, 2009a). Bhati (2009) emphasize the importance of environmental support during the implementation of a social media initiative. Beyond that, the impact of external forces on higher education and the resulting necessity to introduce online and social media tools is being illustrated by Folkers (2005). Most of the aforementioned articles about the use of social media tools in formal education involve the higher educational context. This stands in contrast to research, which encompasses social media usage in informal learning situation as these studies mostly include a corporate or leisure context. Terry (2007) points out inadequate characteristics of traditional training to render learning and communication challenges in corporations and suggests social media as a solution. Social media can be seen as a possibility to enhance human interaction in a corporation (Morris, 2008), a collaboration and learning tool within dispersed teams (Majchrzak, 2005) or as a information and learning tool between upper management and their surrounding (Dunn, 2010). The role of social media in relationship management, e.g. recruiting, enterprise learning and employee engagement is analyzed (Quish, 2010) as well as the importance in knowledge management with respect to open knowledge, knowledge clouds and open innovation is highlighted by other studies (Kambil, 2009; Mcafee, 2009). Other articles describe CEO's attitude on social media usage in companies (Hathi, 2007), ways to handle the rising use of social networks within corporations (Buck, 2007) and pitfalls and myths in the introduction of social media in companies (Meister & Willyerd, 2010).

On a more theoretical level the advantages of web 2.0 and connected tools as a non institutional network-centric learning environment in higher education has been analyzed (Eijkman, 2008) and Anklam (2009) presents a model which describes how social media can enhance collaboration and communication by adding the dimension of peripheral awareness, crowd sourcing and network maintenance. Other articles describe general aspects of informal learning in companies and peer-to-peer learning (Redford, 2007), the acknowledgement of informal learning (Weeekes, 2009) and usage of social media and inherent implications for education (Gerlich & Browning & Westermann, 2010). The use of social media in informal learning within a leisure context has been analyzed as well by several authors. Johnson (2009) describe the social construction of knowledge in the interaction of players of an online multiplayer game and Cilesiz (2009) analyses informal learning in the form of adolescents use

of internet cafés in her context oriented study and gives implications resulting from an informal learning environment. Hongxin & Xiaoqing (2007) outline the impact of online learning communities on knowledge construction and the quality of the outcome.

The subsequent section of this literature overview outlines articles which describe informal learning in a corporate or academic context without social media usage. These are of interest to fully understand the phenomenon of informal learning and are likely to give insights for the discussion part of this thesis how social media can be further leveraged in formal and informal learning situations for instance.

Several articles describe different types of informal learning employees engage in (Berg & Chyung, 2008; Lohman 2009), factors inhibiting or enhancing informal learning (Berg & Chyung, 2008;Hicks et al., 2007; Garrick 1998),or general conditions and factors that impact informal learning activities in a company (Kyndt & Dochy & Nijs, 2009; Leslie & Aring & Brand, 1998). Leslie & Aring & Brand (1998) additionally describe the perquisites of informal learning and the process of informal learning. Else Ouweneel (2009) analyses in particular how task characteristics and social support from colleagues impact informal learning. Contrasting this Macneil (2001) assess how supervisors can improve informal learning within corporate teams and Campbell & Verenikina & Herrington (2009) illustrate the process of informal learning for a newcomer to a new workplace, which is dependent upon previous social and cultural experience for instance. Situation based informal learning is depicted in the following articles. Reardon (2004) analyzed informal learning after a reorganization of a company and Birdthistle (2006) explored informal learning situation in family-run business. Boud and Middleton (2003) identify informal learning communities as workplace, and describe the complexity and implications.

From a learning theory standpoint Gola (2009) argues that most informal learning is experiential and occurs in particular environments. A few authors also analyzed the interrelation between formal learning and informal learning. Marsick (2009) conclude that informal and formal learning are often intertwined and Svensson & Ellström & Aberg (2004) stress the necessity of combining formal and informal learning to reach a desired objective from a personal and organizational perspective. Edwards and Muir (2005) analyze combined informal and formal learning and teaching strategies to foster entrepreneurship. Also the validation and recognition process of non-formal and informal learning outcomes within the European Union has been illustrated (Tuomaite & Zusevicuitè, 2008). Conlon (2004) review the informal learning literature and includes areas as definition and problems of informal learning, theoretical approaches to informal learning, applications and challenges.

Subsequently a graphical representation of the literature overview is presented to the reader. While the vertical dimension of the matrix depicts informal or formal learning, the horizontal dimension shows the use or non-use of social media usage. The cell which describes formal learning and non social media usage is not of interest for this study.

	Social Media Usage	**Non Social Media Usage**
Informal Learning	▪ Non-Institutional learning environments in education (1) ▪ Role of collaboration tools for distance teams (1) ▪ Social media in Relationship Management (1) ▪ Social media in Knowledge Management (1) ▪ Corporate use of social media as information and communication tools (6) ▪ Implications for social media usage in education (1) ▪ Social media and innovation (1) ▪ Informal learning communities (1) ▪ Other (4)	▪ Conditions of informal learning, overview and definitions ,impact factors, barriers, facilitators (8) ▪ Validation and recognition (1) ▪ Role of supervisors (1) ▪ Connection between formal and informal learning (3) ▪ Informal learning in family run business (1) ▪ Informal learning in communities (3) ▪ Learning after corporate reorganization (1)
Formal Learning	▪ Virtual Worlds (14) ▪ Usage Suggestion for Different Tools (7) ▪ Blogs (6) ▪ Facebook (1) ▪ Twitter (1) ▪ Wikis (1)	(not of interest in the scope of this study)

Table 1 - Literature Overview

While existing studies explore social media usage either in formal learning or informal learning, or compare informal and formal learning without including social media, there is a need for a study which combines exactly these factors. Furthermore, it is important to not limit one's research to either the corporate or academic context, but consider both to assess the full effects of social media. From a thematic standpoint there exists no study which assesses value creation of social media in learning and takes the context specific factor of technology acceptance into consideration and thereby assesses the use of social media in formal and informal learning. Thus in the reviewed literature a clear explicit link between the use and different functionalities of social media and value creation theory is not apparent. Therefore, this study aims to establish the connection between value creation and social media usage situations.

Beyond that, it is conspicuous, that in the existing literature on social media in formal and informal learning situation the positive contributions of these media channels outweigh any

negative aspects or challenges which may exists. A very positive illustration of social media in formal and informal learning environments is created. This can be the effect of a mere exposure bias or an expectations bias of researches. The first describes the effect that social media and its potential application are liked as the researcher is exposed and familiar to it, while the latter depicts the situation that and individual is likely to avoid outcomes which are conflicting exiting beliefs and publish data which are in accordance with them This is in line with KTH-researcher, Pernilla Josefsson's (2011) thinking that existing literature is likely to be not completely objective as the underlying authors are fully immersed in social media themselves. This phenomenon calls for the need of a critical approach and objectivity in the analysis and discussion part of this thesis.

4 Social Media in Education – A Learning Theory Perspective

While the main analysis and the theoretical framework presented at a later stage of this thesis solely is based on value creation and technology acceptance theories, the reader might wonder how social media fits into training from a learning theoretical perspective. In this next section it is therefore outlined how the use of social media in formal education can be justified from a learning theoretical perspective. This short section has to be seen as giving the reader a solid introduction into the topic and stands isolated from the main analysis. In the discussion part of this thesis learning theories are briefly touched upon again. Additionally, this brief section can be viewed as a prerequisite for any further analysis, as learning in itself is the core process in any type of higher education or corporate training.

4.1 Social Media as a Tool to Cater Different Learning Styles

Cognitive learning theory is employed to understand how individuals gather and evaluate information differently. A simple framework by Jung (1923) as described in the article by Shipley & Johnson & Hashemi (2009) illustrates basic cognitive styles. This framework assists to illustrate how social media can be used to cater for different learning styles. The author differentiates between two information gathering strategies, namely a sensing strategy and an intuitive strategy and further subdivides information evaluation strategies into evaluation by feeling and evaluation by thinking. Individuals following a sensing strategy in information gathering focus on data specificity and a larger amount of data collection due to no preconceptions. An intuitive strategy entails a holistic approach, focus on the immediate experience and prejudgment of data relevance. Beyond that, information evaluation by feeling employs personal subjective values while evaluation by thinking is based on more logical processes. Each learner uses all four cognitive styles, however, returns by default into his or her preferred style. The functionalities of social media for instance to discuss, share and distribute information fit especially intuitive information gatherers as they tend to learn better through reading or discussions. By means of social media discussion can be extended beyond the class-room in forums, wikis or blogs. Feeling evaluators, requiring creativity and idea generation, can get inspired by the information richness and variety in social media (Shipley & Johnson & Hashemi, 2009). This supports a blended approach and the incorporation of social media channels in education.

4.2 Social Learning through Social Media

While the traditional content-focused Cartesian view of learning assumes a one directional knowledge transfer from teacher to student, the process-oriented concept of social learning

entails that knowledge and understanding of content is socially constructed through interaction. Social learning not only assists to build a complete understanding of a specific subject but also allows the learner to be an active participant in the field which is an important condition to master a certain area of knowledge. Social media offers all the functionality, which are necessary for the interaction and conversations, necessary for social learning. Open-source communities, like Wikipedia, are living examples and provide a visible transparent picture, how the knowledge creation process takes place in social learning. Through social media communities of experts connect and "knowledge clouds" arise. In this context the concept of "productive inquiry" arises, which implies that knowledge is accessed when needed – "knowledge on demand." Social learning gives the learner more flexibility, the possibility to fully immerse into the field and the possibility to engage in it in formal as well as informal learning situations. Thus social learning in education by means of social media is an important complement to traditional forms of teaching (Brown & Adler, 2008).

4.3 The Role of Social Media in the Progression from Instructivism to Connectivism

Instructivism describes the more Cartesian view of learning in which there is a one-directional knowledge flow from teachers to students. Technological and social breakthroughs then lead to the development of constructivism, which can be described as a two-way dialogue. Teachers are here seen as facilitators to discover and generate new knowledge. With more technology advancements a huge array of information is accessible. Individuals are not capable of learning all the rapidly changing knowledge in one field, but should engage in knowledge networks and therefore connectivism becomes prevalent (Tracey, 2009). The functionalities of social media tools assist to organize knowledge networks, connect learners within one field on a global scale and share, distribute and communicate information. While learning is progressing towards connectivism, it does not replace the aforementioned concepts. The correct base understanding of a subject, which is needed for connectivism, can be initiated with instructivism and deepened using constructivism (Tracey, 2009).

4.4 The Role of Social Media in Affective and Energetic Learning

"When basic mechanisms of emotion are missing in the brain, then intelligent functioning is hindered." (Picard, et al., 2004) Besides cognitive learning, affective learning takes place, in which affect impacts the learning process significantly. For instance a learner with a slightly positive mood has a tendency towards greater creativity and flexibility in problem solving and

more efficient in decision making. Being an active participant with control over the learning process and being engaged in a certain field of knowledge triggers different experiences than other forms of learning (Picard, et al., 2004). Social media can assist contribute significantly in the provision of the infrastructure needed for a connectivist learning approach. Beyond that, energetic learning stresses the importance of emotion. The emotional tag is directly linked to strength of cognitive connection and easiness of recall (Kluwe, et al., 2003). Learners, who are engaged in social media in their free time potentially, build up a greater engagement when this tool is used in a formal learning situation.

4.5 Social Media and the Self-Developed E-Learning Framework

Within the frame of an e-learning project, in which the author took part in, a conceptual framework was developed when an e-learning 2.0 solution fits into a training situation and complements traditional training. The question of how we learn and how this relates to different training methods was approached in a structured way. Parameters that are important to the social construction of knowledge were analyzed, in particular the variables variety, engagement, collaboration and intensity. While the learning related variables provide an aid in exploring the most suitable training method, the cost related variables help to clarify implementation constrains. These variables contain the cost ratio and number of learners. For further explanations of the variables please see the appendix (Appendix III, Table 6, p. 94). Within this framework the implementation of social media, e.g. the use of wikis or blogs, in a learning situation represents a simple cost-efficient way to achieve an e-learning 2.0 situation, characterized by high collaboration, high variability, medium engagement and intensity. Adding social media tools to a learning situation increases the variety in teaching methods and also the functionality of these tools support high collaboration. Simultaneously, these tools have low introduction cost, in contrast to simulations or other e-learning systems (Hallberg et al., 2010).

From a pure learning theoretical perspective benefits can be achieved by the introduction of social media into learning. However, to assess the potential success of social media in education, it is important to look at a combination of value creation and technology acceptance theories. Potential positive effects derived from learning theories can only be realized if superior value is created and the technology is accepted in a learning situation.

5 Methodology

5.1 Research Design

This thesis is part of a bigger learning and innovation project at Stockholm School of Economics. A prior study, which analyzed when and how e-learning 2.0 fits into training gave some of the learning theoretical background for this thesis as well as represented the trigger for the specific topic. The research for this study was carried out in close collaboration with another Master thesis project team, as encouraged by the tutors for both theses and the nature of the project itself. Due to synergies this represented a win-win situation. Hereafter the term "extended research team" is used to denote both master theses groups.

5.2 Mixed Method Research

A mixed methods research, in which quantitative and qualitative research has been combined, was employed in the data collection process for this thesis. While qualitative research instruments included semi-structured interviews, a case study set-up, focus groups and secondary data, the quantitative research part comprised different questionnaires. The criticism against mixed research includes that single methods are embedded in an epistemological and ontological context, and therefore cannot be combined (Bryman & Bell, 2007). Potential benefits of mixed research methods design, e.g. greater strength of data collection are perceived to outweigh the aforementioned criticism in the context of this study. The framework by Hammersley (1996) described by Bryman & Bell (2007) proposes three types of elements to mixed methods research, namely triangulation, facilitation, and complementarities. As the quantitative and qualitative parts of this research study reinforce and complement each other simultaneously, triangulation takes place. Thus the research results of both methods are cross-checked against each other (Bryman & Bell, 2007). Both methods also complement and facilitate each other. "Whereas quantitative research tends to bring out a static picture of social life, qualitative research is more processual." (Bryman & Bell, 2007, p. 650) In order to assess how the technology acceptance differ of social media between formal and informal learning situation, a quantitative approach therefore is chosen, which then presents a more static picture of the technology acceptance level within the sample. In order to assess the more in-depth, subjective question of value creation, a qualitative research design is selected. A mixed research method also has the potential to enhance the degree of generalization (Bryman & Bell, 2007).

5.3 Explorative Deductive Approach

The quantitative part of this research study has a supporting role, while there is an emphasis on the qualitative one. This research study, however, unlike most qualitative studies, follows a deductive approach and simultaneously has some inductive elements in it. This is in line with Bryman & Bell (2007, p. 408), who state that "some qualitative researchers argue that qualitative data can and should have an important role in the relation to testing as well." Thus value creation theory by Normann & Ramírez, is not only used to guide and conceptionalize the discussion and analysis, but at the same is tested for completeness. The question is raised, if there are any mechanisms of value creation, which are not explicitly described by Normann & Ramírez. This question and the need for a framework, which illustrate destructive forces or obstacles in value creation, represent the inductive elements in this study. The generation of frameworks and theory is the more common result for qualitative research (Bryman & Bell, 2007).

5.4 Qualitative Research Instruments

5.4.1 Semi-Structured Interviews

The extended research team conducted a total of 15 semi-structured interviews, with different actors involved in the usage, creation and implementation of social media in learning or training. The interviewees have on purpose been chosen to cover a wide range of actors in the value constellation of social media. An academic view on the research area has been reached by interviews with professors and PhD-students from Stockholm School of Economics, KTH and Duke University. Beyond that the perspective of a serious social media system provider in corporate training (Incentive) and a virtual world's provider (Interactive City) was gained in the interviews. Corporate as well as academic user of social media has been interviewed, as well as an agency view on the implementation process has been in gained. Other interviewed actors in the value constellation included a brand and marketing strategist and students, administrators and teacher, using social media in an academic setting. A link between different interviewees was also present as interviews with the aforementioned system provider Incentive and one of its users, namely SBAB, are part of the total array of interviews. Interviewed company representatives had decision power within the respective fields. Interviews were conducted via telephone and in person and the interview length ranged from 27 min to 60 min interview time. The author of this thesis and one representative of the other Master thesis team have at least been present at each interview. All interviews have been

recorded, in accordance with the interview participants and later transcribed. Interviewees were given the possibility to stay anonymous in the final thesis; however this option was rarely used. In order to not direct the conversation of an interview or impose a certain viewpoint on the interviewee, a semi-structured interview approach was taken, as this gives enough flexibility within the interview process. Thereby interviewees were given the opportunity to develop the conversation into a direction not priory anticipated. Also questions outside the ones determined in an interview guide were possible (Bryman & Bell, 2007). The research guide has been specified in a ways, that it represented questions, which are necessary to answer the author's research question as well as the research questions by the other Master thesis team.

5.4.2 The Media Management Platform – A Case Study

As the overall research set-up has cross-sectional characteristics, the subsequently described case was used as a supplement to triangulate and reinforce data found in other sources and ultimately adds to the nomothetic design of this study. The case can be defined as a revelatory case, as from the perspective of this master-thesis it gives new insights into how social media can create value in a training situation (Bryman & Bell, 2007). A self-hosted blog-like platform based on WordPress was introduced into a graduate Media Management class at Stockholm School of Economics of 60-70 students during the spring term 2011. The platform was enhanced with plug-ins and delivered the functionalities of a calendar, download-section, RRS-feet with subject-related news, chat function, a Twitter feet with important information and discussion forums, besides providing the possibility of writing normal blog entries. Later, search functionality and a member directory were added and the chat function removed. Media Management students were informed about the platform approximately six weeks before the course start by mail about the possibilities, and were given an introduction to it in the first week of the Media Management course. Tutorials, presentations and video on usage were additionally posted on the platform. The Media Management course consists of three modules, for which a number of activities were planned for each. For a tabular overview of all functionalities of the platform, planned activities and extended information on the case see appendix IV, p. 95.

Successful implementation and usage would entail the participation, collaboration and open-mindedness of all actors involved in this specific value constellation. This includes everyone as the Media Management course administrator, assistant, platform administrators, students,

teacher and potential guests brought into the course. While the platform usage for module two of the course was completely voluntarily, module one and three had some mandatory elements to participate in the platform, for instance to upload presentations on it. The platform activity has been closely observed during the total time of this case study, whereby the amount of blog-entries was of higher interest than other statistics as click-rates or side visits. Due to the time schedule for this master-thesis, findings from module three could only be incorporated on a limited extent.

5.4.3 Focus Group

In order to assess student's attitudes of the Media Management platform, a focus group was arranged, as this represents a suitable method to understand how people feel and view a certain topic (Bryman & Bell, 2007). Students of the Media Management class, in which the platform was introduced, were invited orally and written form to join a focus group. A free lunch was offered as an incentive for participation. Final participation was verified by calling the interested subjects. A self-selected sample of six students was present during a two hours focus group event session, of which 80 minutes were conversation. The focus group took place at FocusInn Stockholm - a location, which is made to conduct professional groups. While the group consisted of a mix of different nationalities, the mix in gender was skewed towards male participants. Excluding the lunch break, the focus group has been audio-and video recorded in accordance with all participants. Two copies of the recorded tapes have been kept by the extended research team to review the session and extract relevant information. The author of this thesis and one representative of the other Master thesis team were the moderators, while the second Master thesis team member observed participants behind a one-way mirror. Via Skype text chat this member was able as an observer outside the conversation to give comments to the moderators. A number of areas to be covered in the conversation have been identified beforehand; and general questions have been prepared. However, moderator involvement has been kept low, and new questions input were given to naturally guide the conversation. This is line with Bryman & Bells (2007) requirements for a focus group. Equal participation of participants in the conversation has been assured.

5.4.3 Secondary Data

Various sources of secondary data, as statistics and reports, have been used in the introduction of this thesis in order to show the relevance and future importance of social media to the reader. These sources comprised reports from institutions as the European Union, as well as publicly available articles and information from a major consultant company. The sources have been carefully selected in order to ensure trustworthiness and authenticity.

Source	Type
Patel (2010)	Publication of the American Society for Training and Development
Redecker & Ala-Mutka & Punie (2010)	Publications of the European Communities
Redecker & Punie (2010)	Publication of the European Conference On Technology Enhanced Learning
Bughin & Manyika (2007)	McKinsey Global Survey

Table 2- Sources of Secondary Data

5.4.4 Evaluation of Qualitative Research Approach

In order to evaluate this qualitative research approach subsequently, the concept of reliability and validity is discussed as well, as an alternative evaluation concept by Guba and Lincoln (1985, 1994) as described by Bryman and Bell (2007) is briefly presented. Similar to the concept of inter-observer consistency in this study internal reliability is reached, as the members of the extended research team have a consistent and unanimous view on the findings of this qualitative research. Also the evaluation of the importance of certain types of findings over others and the interpretation of them is shared among the extended research team members. Internal validity, which describes the match between research findings and developed or employed theoretical ideas, is guaranteed by nature of the research in itself. Bryman and Bell (2007, p. 410) pick up the idea of Le Compte and Goetz by arguing that "internal validity tends to be a strength of qualitative research ,[…] because the prolonged participation in the social life of a group over a long period of time allows the researcher to ensure a high level of congruence between concepts and observations." Additionally, discussions in the extended research team as well as with tutors have reinforced this aspect. External validity refers to the generalization of the results to other environments. In this study it is given to some extent, as the finding of this research study give general indications and insights of value creation with social media usage in academic and corporate learning

situations. Secondly, external validity is reached by the above mentioned diverse sample of interview participants.

In the next section, trustworthiness and authenticity are briefly discussed. These are defined as two important evaluation criteria for qualitative research in the framework set up by Lincoln and Guba (1985, 1994) (Bryman and Bell, 2007). Trustworthiness is established by the following criteria. Credibility, similar to the concept of internal validity is reached by respondent validation or member validation. In this study interview transcripts were partly verified by the interviewee or by another participant of the extended research team, who has not written that particular transcript. Transferability equals the prior discussed external validity. Dependability is kept low, as major steps in the research have been discussed with tutors, and thereby individuals not fully immersed in the research, and transcripts of interviews were carried out. Confirmability is ensured as all participants in the extended research team acted in good faith. Two types of authenticity can be found within this study, namely ontological authenticity and educative authenticity. Through this research individuals receive a better understanding of social media in education and secondly, different actors in the value constellation of social might be better able to understand each others' perspectives.

5.5 Quantitative Research Instruments

5.5.1 Questionnaire I

The technology acceptance of social media in formal learning compared to informal learning was assessed by a comparative quantitative survey in the form of a self-completion questionnaire. Two versions were constructed to assess social media acceptance in formal learning (version A) and social media acceptance in informal learning (version B). Both versions of the survey started off with a short general explanation on the questionnaire, followed by a short text on the use of social media in formal learning and informal learning respectively. Specific examples of each situation were provided to the test subject in order to ensure that the individuals understood the topic of the questionnaire. Apart from the introduction headlines and minor adjustments, the succeeding five blocks with six to eight statements on social media in formal learning/ informal learning were identical. On a 7-point Likert scale, test subjects had to decide between "agree completely" to "do not agree". Both questionnaires and explanations to them are appended (Appendix 4, p. 98 -101). The statements of both questionnaires are based on the Social Cognitive Model of technology acceptance as described by Venkatesh, et al., (2003). The respective variables of interest,

which impact technology acceptance are individual and performance outcome expectation, self efficacy, affect and anxiety. As further justified in the theoretical part of this paper, effort expectancy and social influence were also included as variables in the questionnaire. Before the questionnaires were finally handed out, they were given to other members in the extended research team and tutors to check if the design as well as the questions seems understandable and logical. Due to priming reasons, general questions about age, nationality, gender and computer skills were placed in the end of the form. Pre-testing was carried out only on small scale, as established questions were taken from existing questionnaires about technology acceptance. In this previous contexts questions were pre-tested.

Unlike other questionnaires, the absolute level of social media acceptance in formal learning and informal learning is of minor importance in this context. However, it is of high interest if the degree of technology acceptance is context specific, as this would also impact ways in which value can be created using social media. Thus, it will be assessed if for each statement respondents of version A answered significantly different than respondents of version B. The questionnaires were targeted at students of higher education, which have naturally grown up with newer technology and social media. Reponses from students, who are 30 years and older were therefore excluded from the analysis. The sample of version A comprised SSE, KTH and Stockholm University students, the sample of version B consisted of Stockholm University, KTH and respondents from an online version of the questionnaire. The online questionnaire was distributed via snow-ball sampling through social media as Facebook. It deemed important to distribute the latter questionnaire in a more online environment.

5.5.2 Questionnaires II

While the aforementioned questionnaires are an important component of the research to this study, the subsequently described ones are primary part of the other Master thesis team within the extended research team. However, single results might also be of interest to this study, therefore the purpose, outlay and sample is briefly illustrated. The quantitative part of the other Master thesis team's research consisted of a total of three self- completion questionnaires within the frame of the earlier mentioned case study, in which a blog-like platform was introduced into the Media Management course. Therefore the sample directly comprised students from the Media Management course at Stockholm School of Economics in spring 2011. One questionnaire was handed out in the beginning of each of the three modules of the course. All questionnaires were three to five pages long, had a clear outlay

and started off with an explanatory text about the purpose of the study. Due to priming reasons, the order of the questions has been carefully considered and questions asking for secondary things as age, gender and computer skills have been placed into the end of the questionnaire. All three questionnaires were based on technology acceptance theories, experience theories, learning theories as well as a self-developed framework, which tries to assess when e-learning 2.0 is a suitable solution. Central to this self-developed framework are the variables variety, engagement, collaboration and intensity. The questionnaires assessed these variables as well as the overall quality of the course. As some of the questions were identical throughout the three questionnaires, some examined aspects were analyzed within the frame of a longitudinal design. Questionnaires were handed out either in the end or in the break of a class or during a tutoring session for a project.

5.5.3 Evaluation of Quantitative Research Approach

In the next section the concept of stability and reliability is discussed for the first described set of questionnaires, which are more relevant to this thesis. For a discussion of reliability and validity on the other questionnaires, please see the Master thesis by Jarméus & Sundberg (2011). Factors involved in the concept of reliability are stability, internal reliability and inter-observer consistency (Bryman & Bell, 2007). Stability is low, as it was not possible to conduct a test-retest method in the frame of this thesis, as it seems unreasonable to ask test subjects about the topic. The way students were sampled, which was the random selection of individuals, also made this approach impossible. The nature of the subject itself also has little inherent stability, as with the increase of social media in society in general and informal as well as formal learning in particular, the technology acceptance level for this type of technology is changing. Internal validity within the quantitative research instrument is partly reached as each of the described variables involves several sub-questions as well as for test reasons some of the questions are asked twice. These double questions then can give an indication about the internal consistency, with which people have answered these questionnaire. Inter-observer consistency is reached as results were given to other members of the extended research team and interpretations and findings have been agreed upon. As the measures to assess technology acceptance in the context of this study are established, face the suitability, and thereby face validity of these measures is given. Construct validity, is reached as the choice of theories and fit of them to the research question has been discussed within the

extended research team and agreement was prevalent. The identified variables and respective questions represent established one which have been tested in other contexts before.

Bryman and Bell (2007) describe that a representative sample is a representation of the population that it was drawn from. The sample in this study was constructed in a way that it represented students of different higher education institutions in Stockholm and also other institutions to a limited extent. Therefore, the finding of the quantitative part can be generalized on students of higher-education in Sweden over the next few years. The findings cannot be generalized to a greater time-horizon in the future, as the perception and social media is likely to change in the future.

5.6 Structure of Carried Out Research Process

Due to time considerations and the scope of this Master thesis research project, the described quantitative and qualitative research has been carried out simultaneously. The quantitative part of this research has a subordinated role and supports the qualitative one.

5.7 The Necessity of a Literature Review

A literature review of academic articles is carried out as part of the thesis in order to assess what has been already been covered in the broader research field relevant for this thesis. This assisted to avoid the pitfall to simply "reinvent the wheel" (Bryman & Bell, 2007). Furthermore, it helped to refine the research question and it assisted to assess the significance, credibility and importance of this study compared to other research studies in the field. Existing literature also can also be employed in the analysis and discussion of thesis to emphasize a particular viewpoint (Bryman & Bell, 2007). There exist no articles which analyze technology acceptance of social media in informal and formal learning and the resulting consequences for value creation as well as general value creation using social media in an academic or corporate learning situation. Therefore a broader array of articles is considered in the literature review.

6 Theoretical Framework

The theoretical framework which guides the subsequent analysis is now presented to the reader. As the principal research question is about value creation, value creation theory is put first in the succeeding presentation and development of different theories. First the selected value creation theory is justified to the reader. As a second step it is explicitly elaborated on the specific sources of value creation. Afterwards it is argued for the existence of additional sources of value creation, as context specific factors. At this point technology acceptance theory is connected to value creation theory. As a final step a conceptual model is derived, which guides the presented findings and analysis.

6.1 Value Chains versus Value Networks

In the next section two important views of value creation theory are reviewed, namely the industrial view and the co-production view. It is argued for, that the co-production view found in the value creation theory by Normann & Ramírez (1998) is the more suitable one to be used in the frame of this thesis. The value creation theory by Normann and Ramírez (1998) in combination with technology acceptance theory and socio-cognitive theory will assist to explain the logical reasoning why particular findings occurred in the qualitative research of this thesis and support insights from the quantitative survey.

The industrial view of value creation, which is for instance taken by Porter, assumes that the value creation process is sequential and unidirectional and can be described in value chains. In contrast to that the co-productive view of value creation contains that different actors are organized in value constellations and value is generated in their interaction (Ramírez, 1999). Incorporating social media into a learning situation, e.g. introducing a blog-like platform into a course requires a network of individuals, as administrators, teachers, learners, and other contributors, e.g. as industry professional being part of this particular learning network. Value is then created in the simultaneous interplay between all these actors. Without interaction a social media channel would represent abandoned infrastructure without any value. In the industrial view of value creation actors within the value chain hold one distinct role and often one company is the main point of analysis. In the co-production view actions of different actors in the network are emphasized in the analysis and actors are capable of holding different roles simultaneously (Ramírez, 1999). Established industry boundaries are challenged (Normann & Ramírez, 1998). This is in line with prior mentioned social construction of knowledge or connectivism, in which learning is created in the interaction. Traditional roles as teacher or student are blurred. Not the teacher is important in an analysis of knowledge creation but the behavior of all parties involved. While a student can learn from

post on a course blog on one topic, on another one he or she might be the expert and actively contribute to knowledge of other contributors. The conceptual idea of school being the physical place for learning also becomes obsolete in this context, as already a course blog can extend the learning experience beyond the class-room. In the industrial view of value creation value is added at each stage of the chain and it is readily measurable, while in the co-production view some type of value is not quantifiable (Ramírez, 1999). Thus, the latter view supports the idea of brand value and the power of having access to a large network for instance. A strong point of difference between the two concepts, is their standpoint on when value is created. The industrial view contains that value is constructed during the production stage but it is later destroyed during consumption, while the co-productive view sees the customer as an important value co-creator during consumption (Ramírez, 1999). The view is in line value in use concept and the idea that companies can only make value propositions, supported by Service-Dominant Logic (SDL) of Vargo & Lusch (2004). The value in use concept represents well when value is created using social media in a learning situation, as only in the interaction knowledge and thereby value is created. Social media in itself only present the infrastructure or empty system to be filled. Both concepts also differ in their view in what a product is. The industrial view sees it as end output, which carries value, from the production. The industrial view distinguishes between services and products, whereas the co-productive view defines a product as a "physical embodiment of an incredibly complex set of activities performed by a very large number of actors." (Normann & Ramírez, 1998, p.26) Thus in the case social media being used for formal learning, the ultimate value proposition can include an improvement of the learning experience which is reached through the actions of numerous actors within the value constellation, e.g. administrators set up a course like platform, students contributed content other individuals read the blog and so on. What makes the co-productive view, represented by Normann & Ramírez even more compelling is its inclusion of the impact of technological revolution on economic activity. Concluding, it is visible from the discussion that the co-production theory of value creation is the more suitable in the frame for assessing the value creation in the introduction of social media in formal learning situations. The next section highlights to the reader how value can be created according to Normann & Ramírez co-production view of value creation.

6.2 Types of Value Creation according to Normann and Ramírez

According to Normann & Ramírez (1998) the invention of the microprocessor radically changed economic activity and serves as a prerequisite to create value through functional re-

aggregation. The concept of liquidity and density take an important role in this context. The concept of liquidity includes that prior established barriers to time and space can be removed with newer technologies. Additionally, the density concept describes that offerings can become more dense in time and space, e.g. time is enriched by an increase in the options offered in a given time period. As a result "Value has become more 'dense' as we can put more and more opportunities for value creation into any one offering." (Normann & Ramírez, 1998, p.75)

Each offering also incorporates and mirrors its respective value constellation network and the network members' activities. The relationship between members within in the value constellation in itself can give the potential for value creation. Value can be created by means of exploring and building new relationships, which result in optimized types of co-productions. The mere size of the network can also have an effect on value as indicated by Metcalfe's law, which states that the value of a network is more than proportional to the number of its members included (Ramírez, 1999). Reconfiguration of activities represents an important step for optimization and value creation. By shifting activities, actors can either be relieved or enabled, which leads to optimized co-production structure and generation of value. The concept of leverage contains, that the offering "make the customer more effective, thus creating value in a better way." (Normann & Ramírez, 1998, p.57) The value in a co-production relationship between actors is also determined by the actors' ability to handle costs, their motivation to assess, reduce and counter risks, and their ability cushion and sustain negative consequences. Apart from the manifestation of relationships of actors, offerings are also organized along the variables of time and space. As indicated above, offerings can become more dense and liquid. To take the example of time, time savings or time enrichment can occur due to newer technology, e.g. the ability of web-based booking of cinema tickets safes queuing time. Additionally, new technologies allow for simultaneous activities instead of sequential ones. Beyond that, other dimensions of an offering determine the potential value it creates, as for instance, time-span or option. The first describes if the actor relationship is transactional or long-term, while the latter illustrates if it is a bundled offering composed of single offerings or if it is an unbundled one. Normann & Ramírez (1998) define the offerings' code as the net value, which takes into account all the value creating activities of value constellation actors including the customers' ones. While the aforementioned discussion mainly referred to networks and the product perspective, value creation can also be reinforced on a macro level by business development, which is necessary due to new offerings, intra-

institutional and inter-institutional reconfiguration and new configuration of mental concepts and structures (Normann & Ramírez, 1998).

From this theoretical review of value creation possibilities, several categories of value creation are subsequently depicted. These represent the first step in the construction of a framework which will assist to structure the analysis part of this thesis. One can differentiate between value creation activities connected to the network and network actors, value creation linked to the offering and value creation for the business on a macro level. The subsequent table gives the reader a detailed overview on the categories:

Macro-Level Related	Offering Related	Network Related
▪ business development, e.g. due to new offerings	▪ increase in the liquidity of an offering (time/ space)	▪ new actors
▪ inter-institutional or intra-institutional change	▪ increase in the density of an offering (time/ space)	▪ activity reconfiguration (enabling/relieving), leverage
▪ construction of new mental concepts	▪ other product dimensions (e.g. bundling/ unbundling)	▪ characteristics of network-actor relationship
		▪ other (e.g. size of network, simultaneous actions of instead of sequential ones)

Table 3 - Sources of Value Creation

6.3 Beyond the Value Creation Theory by Normann & Ramírez

While Normann & Ramírez (1998) consider specific value constellation networks, the authors do not assess, if context specific or sociocognitive dimensions impact the value creation process. These aspects are, however, of high interest to the analysis of this study as social media tools or the functionalities of them are transferred from a more leisure environment in which informal learning takes place into a pure formal learning situation. Thus, social media is to be used in two different contexts by one individual, where one context represents the established one and the other one the new one. In this more transitory stage, in which social media functionalities are transferred, it is important to assess how individuals create meaning of social media in this new situation. The latter aspect is assessed by the more practical question if social media in informal learning is more accepted in contrast to more formal learning situations. This can have an impact on the value creation process. Socio-cognitive theory helps to establish the link between value-creation theory and technology acceptance theory. As described above Normann & Ramírez (1998) define an offering as “the physical

embodiment of an incredibly complex set of activities […]"(Normann & Ramírez, 1998, p.27) The array of activities not only includes the physical production of the product, but also for instance actions to establish a technological knowledge base in a consumer, so that he or she can ultimately derive value from an offering. On a more abstract level, the actions Normann & Ramírez (1998) refer to, can also include the conceptional activity of meaning creation of a new or altered product by actors in the value network. Rosa et al. (1999) describe with their Socio-cognitive theory, the dynamics which take place in a product market. According to them product markets are conceptionally constructed by a network of market participants. This view of markets being arranged as networks is in line with the previous described value-constellation networks of the co-production view. According to Rosa et al. (1999, p. 67) market participants "[…] use their conceptual systems to enact meaning for physical artifacts they encounter and to link the products to usage conditions and […]." For the meaning of social media this could entail that market participant link these channels to leisure activities and other informal situations outside of school and work. This is reinforced by the media, as they not write about e.g. "Facebook – The next big learning tool" but rather "Facebook a place to connect to friends". Referring back to the conversation prism, most listed services are not communicated for learning purposes but rather networking or file sharing. While formal learning is not connected to them, a lot of informal learning does take place in these situations anyway. While the conceptual meaning creation process of social media offerings has been stabilized in society, it represents a challenge for new late-entry offerings to launch in the market. On the one hand they belong to the same product category but are on the hand are perceived as different due to different usage situations for instance (Rosa et al., 1999). This potentially complicates the transfer of social media functionalities in formal learning situations. Individuals have to make sense of new experiences, e.g. new uses of old products, which require behavioral adjustments. Conceptual systems are destabilized and recombined into new representations. Market stories, e.g. about market actors assist to create meaning in this reconfiguration stage (Rosa et al., 1999). In this transitory stage, in which a new use in formal learning is introduced for an established one, it is therefore important to assess how people make sense and accept the medium in the new usage situation compared to the established one, as this can have an effect on the value creation. It can also have an effect on how the value must be communicated so that the customer notices the value proposition in the first place. In order to assess how people make sense of social media in formal learning compared to informal learning social media, technology acceptance is taken into account as a simplification for the process of meaning creation.

6.4 Technology Acceptance Theory

There are several theories, which analyze individual technology acceptance. One of the well known models is the Technology Acceptance Model (TAM), which defines perceived usefulness, perceived ease of use and subjective norm as the most decisive variables. In their paper "User Acceptance of Information: Toward a Unified View", Venkatesch et al. (2003) attempt to compare and unify eight different models. One of them is based on Social Cognitive Theory by Bandura, which seems to be the most applicable one in the context of this study. While Compeau and Higgins have applied Social Cognitive Theory for the use of computers before, Venkatesh et al. (2003, p. 432) conclude that the "nature of the model and the underlying theory allow it to be extended to acceptance and use of information technology in general." The core constructs of this model contain outcome expectation on performance and individual base, self efficacy, affect and anxiety. The underlying social cognitive theory sees behavior, personal and cognitive factors and environmental impact as the three most important variables. These three factors are affected by a reciprocal causational relationship (Bandura, 1988). According to Social Cognitive Theory outcome expectation refers to the personal or performance based consequences of a specific behavior (Venkatesh et al., 2003). Compeau and Higgins (1995) reason that behavioral consequences represent strong determinants to human actions. "Individuals are more likely to undertake behaviors they believe will result in valued outcomes than those which they do not see as having favorable consequences." (Compeau & Higgins, 1995, p.122) Establishing a link to value creation theory by Normann & Ramírez, this potentially entails that individuals are not willing to part of a value constellation network and engage in the required actions, unless they see a distinct value proposition for them derived from their actions. Thus, whether social media is accepted as learning tool in formal learning depends on outcome expectations and whether individuals feel they can derive value from it. Self-efficacy describes an individual's ability to perform a certain task and impacts outcome expectations significantly (Compeau & Higgins, 1995). "The outcomes one expects derive largely from judgments as to how well one can execute the requisite behavior." (Bandura, 1978, p. 141 as quoted by Compeau & Higgins, 1995, p.122) Facilitating conditions include previous execution of the behavior. The Model of PC Utilization (MPCU) also considers facilitating condition an important variable and defines them as "objective factors in the environment that observers agree make an act easy to accomplish." (Venkatesh et al., p. 430) Both variables, outcome expectations and self-efficacy, are seen as the most important variables which determine information technology acceptance (Compeau & Higgins, 1999). Affect describes if a person likes a certain behavior,

while anxiety refers to the cause of anxiety in the performance of a certain behavior. Both variables also impact outcome expectation (Venkatesh et al., 2003). While Social Cognitive Theory limits itself to the aforementioned described variables, in the context of this thesis two further determinants, which are also considered by other technology acceptance models are included in the analysis. These two variables are social influence and effort expectancy. Social influence, which is also employed by the MPCU, is defined by Thompson (1991, p. 129) (as quoted by Vankatesh et. al., 2003, p. 430) as "the individual's internalization of the reference group's subjective culture, […]". In the case of social media it might be a strong determinant for technology acceptance if an open-culture of sharing ideas, documents and thoughts is prevalent or not. Effort expectancy assesses if an individual thinks that a specific technology is difficult to use, and thereby is directly connected to the variable ease of use. The latter is important to many technology acceptance models and therefore should also be assessed in this context (Vankatesh et. al., 2003).

It is important to outline that in this study, the technology acceptance model is used with a different emphasis than in other studies, as technology acceptance is not the main focus of this thesis but represents an impact factor to value creation. Due to this situation, the absolute degree of technology acceptance of social media in informal and formal learning is of less interest than the relative technology acceptance incorporated in the two scenarios. Thus the difference of technology acceptance of social media in formal compared to informal learning is of interest. The technology acceptance analysis serves to gain insights to value creation and to find obstacles in the value creation process.

6.5 The Derived Conceptual Model

From the above discussion, a conceptual model is derived which assists to structure the analysis and guides the discussion. The underlying central research question is how value can be created using social media in formal learning. In order to assess whether the context specific factors have a significant impact on value creation, the question is answered how technology acceptance differs using social media in formal learning situations compared to informal learning situation. The context as an impact factor to value creation has not been explicitly mentioned in Normann & Ramírez theory of value creation. While Normann & Ramírez explain the dynamics of value creation in detail, obstacles are left out. Additional an open-minded approach in the analysis is required to stay alert for any upcoming value creation factors not mentioned by Normann & Ramírez. The conceptional aim of this paper is based on analysis to extend the below illustrated framework with factors impacting and destroying value.

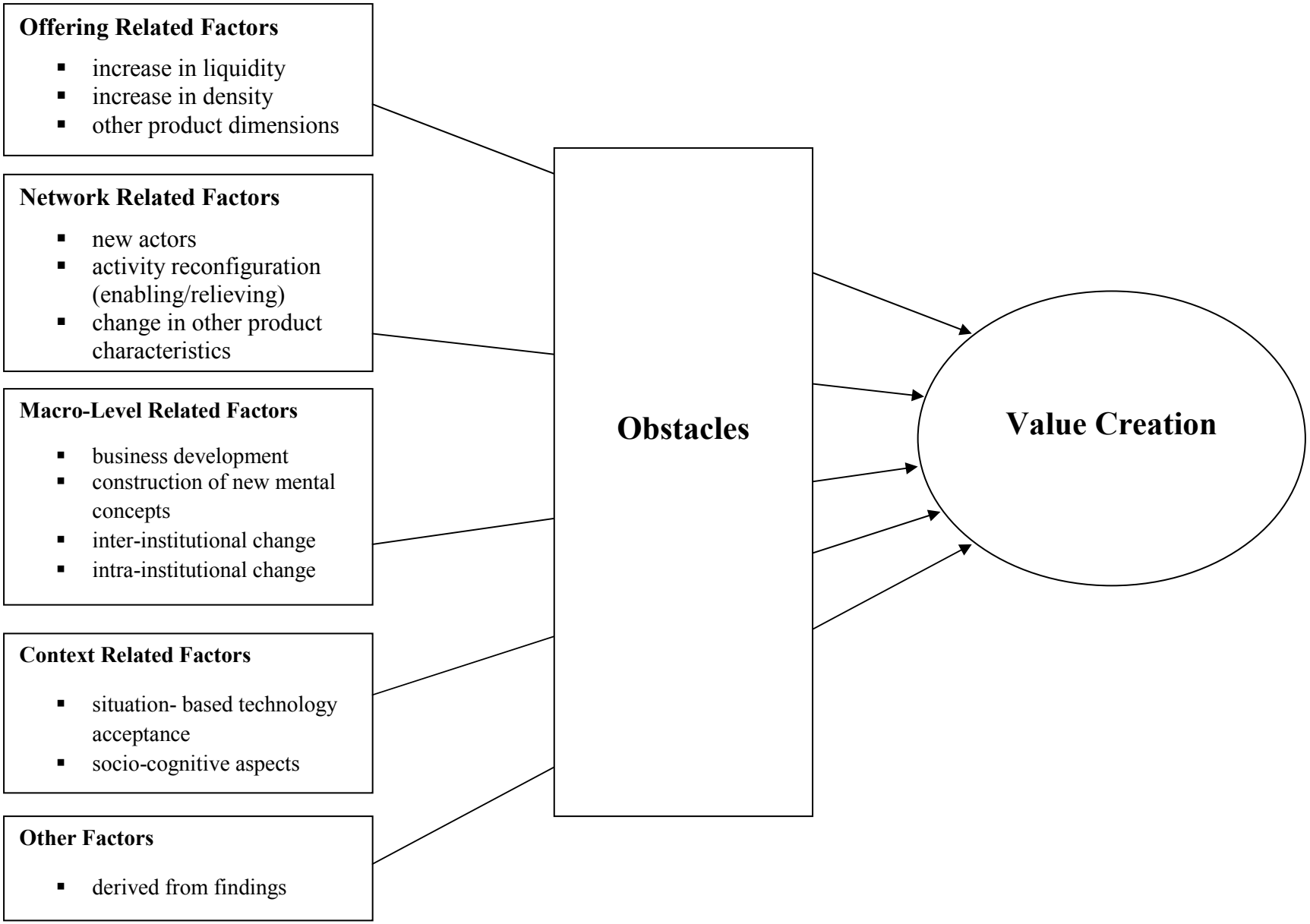

Figure 1 - The Conceptual Model

7 Findings & Analysis

First the qualitative findings are presented to the reader which are connected to the main research question, namely how value can be created by means of social media. Secondly, the quantitative findings answer the question if technology acceptance of social media differs in an informal learning context compared to a formal learning context. Obstacles to the value creation process are considered as a third point. While the quantitative findings differentiate informal and formal learning, the qualitative analysis assesses learning in general. The differentiation between formal and informal learning for the latter is addressed in the discussion.

7.1 Qualitative Findings & Analysis

The adoption and use of social media in informal as well as formal learning situations, depends on the additional value, which the technologies can provide to the actors in the value constellation of an offering. This is corroborated by the following quote of an user from the focus group, which refers to the blog-like platform, introduced into the 2304 Media Management course: " I guess currently, when the platform does not give you the additional value in your studies really, it just has some materials and there is no real value, let's say it will help you study better or it will, you know, somehow optimize your study process, anything like that, then there is no real point in using it. " (Focus Group, 2011) This quote reinforces the importance of analyzing value creation. The subsequent part of this thesis therefore describes sources of value creation derived from the qualitative part of this study and simultaneously analyzes them. First sources of value creation, which can be explained by value creation theory of Normann and Ramírez are illustrated to the reader.

7.2 Sources of Value Creation based on Normann and Ramírez

7.2.1 Offering Related Value Creation – The Concept of Liquidity

As a start offering related sources of value creation based on the previous established conceptual framework are discussed. At first findings, which incorporate liquidity related value creation triggered by the removal of barriers of time and space are presented to the reader.

Removing Barriers of Time and Space

From an academic point of view social media can enhance the service quality of a course by reducing existing barriers of space. Teachers around the world can collaborate and engage in

joint teaching approaches, e.g. a course can be taught by a Swedish and an Australian teacher. Thereby, virtual office hours or e-mail support can be provided basically 24/7 for the students of that course, which results into fast response time to questions for instance (Josefsson, 2011). Beyond that the barriers of a traditional class-room interaction are removed, and can be extended to the online space. This is in line with Harris & Rea (2010), who describe that a class-room can be made available 24/7 by means of newer technologies. With respect to virtual office hours, Li & Pitts (2010) found the existence of virtual office hours increased students' satisfaction of a class compared to one which has traditional office hours. However, simultaneously their findings indicate that students preferred other ways of interaction than virtual office hours. The authors foreshadow that with the increased familiarization of virtual office hours, students will eventually see it as a normal extension of the physical class-room. While value is created by reducing the physical boundaries of a class, value can also be achieved by eliminating the compartmentalization of single courses from a learning perspective. Via social media an ongoing learning community can be achieved by spanning boundaries across different classes. This encourages the application of knowledge across classes (Custin & Barcacs, 2009). Social media can also be employed to overcome barriers of time and space in a meeting situation, e.g. by virtual conference if the participants are physically in different place. Serdar Temiz (2011) from Interactive City illustrated the idea of mixed reality, e.g. by means of advanced forms of social media a person can virtually take part in a real life meeting.

Another finding suggested that the use of social media can free the time of employees, who represent information hubs in companies, and thereby are disturbed often by the inquiries of other employees (Hansson, 2011). Parts of the knowledge of these employees can be internalized and made accessible by means of wikis for instance. This also has the side-effect to reduce the dependency of a company on key employees in case of absence and also make knowledge accessible beyond the normal working hours of that specific key employee (Melke, 2011).

Intensifying Relationships

Value can also be created by social media in the way that it intensifies existing human relationships. The distance of different employees, located at different geographic locations can be reduced by e.g. communicating instantaneously through social media. This can lead to a greater feeling of a community among the employees and also facilitates interaction (Melke, 2011). In an academic context, the gap between the academic world and practitioners can be reduced by means of social media. For instance a web designer can answer questions in a

forum of a web-design class for a specific number of contracted hours per week. KTH researcher Pernilla Josefsson suggest, that this type of interaction increases the value and relevance for students of a certain subject and simultaneously also increases the professionals' understanding of academic work and the differences inherent in the working style. Taking the example of a Twitter channel Dunlap & Lowenthal (2010), illustrate the value of connecting to a professional community of practice through social media channels. They suggest that "besides the networking potential, students receive immediate feedback to their questions and ideas from practicing professionals, which serves to reinforce the relevance of Twitter participation and enhance their understanding of our course content and their enculturation into the professional community of practice." (Dunlap & Lowenthal, 2010, p.132) The latter aspect is likely to be applicable to other social media channels as forums or wikis in which practitioners and students are present, and not solely applies to Twitter. Several interviewees indicated that social media creates value by reducing distance between different hierarchical levels within a company and thereby also leadership can appear more human (Cecilia, 2011). One the one hand employees on lower levels can assess and envision employees at the top better, if these for instance engage in writing a blog in which they reflect upon their actions in the company and on the other hand top level management can engage in an active dialogue with employees in their companies. While a lot of top management employees are critical to social media, the CEO of Best Buy, Brian J Dunn, actively uses Twitter and Facebook to communicate with his employees. He tweets about several work related and informal subjects, learns about the latest trends, and engages in a dialogue with employees. He concludes that "Facebook turns out to be a very relevant way of connecting to our employees, given the company's demographics." (Dunn, 2010, p. 44 - 45) A more human leadership is likely to have a positive effect on employee satisfaction and employee attractiveness. Hence a greater amount of talents might be attracted.

7.2.2 Offering Related Value Creation – The Concept of Density

In the next section density related sources of value creation which incorporate an increase in the number of options in a certain time period or space are illustrated.

Increase in Interaction – Time-Sensitive Information

Social media can increase the amount of interaction in a given time period and allows for more communication. This characteristic of social media has been noted by almost all of the interviewed professionals for this study. A more thorough analysis shows that specific social media channels, as microblogs, are especially useful in improving the communication of time

sensitive information. Dunlap and Lowenthal, (2010) describe in their article that students used Twitter for questions on the clarification of critical content, which can be answered in a timely manner. “On a few occasions we were able to intervene before an issue spiraled out of control, as with a team having trouble meeting the requirements of a project.” (Dunlap & Lowenthal, 2010, p. 132) The interaction between students, professors and faculty is important for the level of engagement. The latter aspect directly impacts motivation and involvement (Dunlap & Lowenthal, 2010).

Increase in Interaction – Two-Way Communication

Value can also be created by increasing the interaction in a traditional class-room environment. For example, microblogs, as Twitter, can be applied to communicate comments and questions on a separate screen to a presenter during a presentation. Microblogs and rating systems can additionally be used to give instantaneous feedback to a presenter from the audience (Focus Group, 2011). This way of using social media enhances the social presence in class-room (Dunlap & Lowenthal, 2010). Value can also be created by using time in which a certain number of actors is meeting more efficiently. By transferring less relevant communication to an online environment, real-life time can be reserved for critical issues.

Avoidance of Repetition

Social media also assists to avoid the repetition of task. Pia Melke at SBAB, described that being able to store information in a wiki or forum, can assist employees to assess the existing knowledge base and avoid the doubling of work, as some information is already present. Another example is incorporated in the in-class instructions of Robin Teigland, who encourages students to take the insights from existing presentation at SlideShare, a file sharing network, and do not start to collect primary and thereby engage in activities which have already been executed by others (Teigland, 2011). On another level, other types of social media, as Q&A forums and its inherent transparency can assist to avoid repeating answering the same questions all over again. By social media time can be used more efficiently from a macro perspective, as there is no doubling of activities among different actors and thereby there is a greater number of different activities among the actors of a value constellation in a given time span. Taking the ecosystem of a corporation, the avoidance of repetition, can lead to time and financial savings.

7.2.3 Offering Related Value Creation – Other Product Dimensions

Bundling of Functionalities

Normann and Ramírez (2007) suggest value can be created by altering dimensions in an offering, e.g. one way represent to bundle or unbundle different functionalities in an offering. Different social media channels possess different functionalities and thereby different benefits. For instance a Twitter channel can be used for instant and time sensitive communication, while a Wiki's best application is for the accumulation and internalization of knowledge over a longer time horizon. Therefore, the value of social media can be enhanced by bundling their functionalities into a platform. This is in line with Gustav Jonsson (2011), who remarks that "[…] the real value, from my point of view, is when you build these techniques together, because you can do a lot of different stuff."

The Integration and Aggregation of Different Systems

Value can also be generated by giving the user the possibility to integrate or aggregate different system. On the one end, this might represent the integration of the social intranet into the e-learning system (Melke, 2011), and on the other it might a product like tweet deck, which aggregates status updates of different social media channels. Insights from the focus group about the Media Management platform reinforce the importance of seamless integration of different channels. Students judged it as barrier to upload a presentation first on SlideShare and as a second step to create a post on the aforementioned platform which included a link to their presentation. They criticized the number of accounts. In this case most value could be created by only having one account and platform acting as the interface of different types services, which to some extent act as one stop shop for information. An official platform has the side effect to give credibility to the presented information (Focus, Group, 2011).

The Incorporation of Key Functionalities

The bundling of social media functionality with search functionality is one of the most important value drivers in the integration of different functionalities. Incentive initially thought that they were "selling wikis, blogs, microblogs, and feets and so on. […] But then we have come to realize that we actually selling search." (Jonsson, 2011) Employees get up to 10% more efficient by finding information faster internally by using the search functionality (Jonsson, 2011). Thus, it is not only important to provide the infrastructure for interaction, sharing and communicating, but also the possibility to retrieve information from the aforementioned activities.

The Importance of Simplicity

Another product dimension which can create value is the design of the solution itself. There was unanimity among the interviewees that easiness of use and intuitive interface were the most important design criteria. Simplicity of the interface and a tendency towards less buttons are also emphasized by Incentive's solutions. Taking an analogy to other services in the online business, the most successful search engine worldwide, Google, also relies upon simple looks. "From the start, Google's clean, pristine look attracted computer users hunting for information. In a cluttered world, its primary colors and white background conveyed purist with universal appeal." (Vise & Malseed, 2008, p. 39- 40) Focus group participants also favored a simple, non cluttered user interface, and therefore suggested to remove unnecessary buttons at the posting backend interface of the Media Management platform for instance. Pia Melke at SBAB also noted that the employees find obstacles in any writing interface which is dissimilar to Word for instance. (Melke, 2011) Thus in order to create value interfaces must be simple, intuitive and similar to programs, for which users already have an experienced usage behavior.

7.2.4 Network Related Value Creation

While the previous section discussed ways of value creation directly linked to the offering, the subsequent part of this thesis describes types of value creation associated with the network of actors inherent in the value constellation of an offering. Social media allows for a new as extensive ways of networking. With respect to learning, "Web 2.0 opens a whole new world of social interconnectivity in which academics, experiences professionals and students alike can now much more easily network with each other for life-like collaborative knowledge construction." (Eijkmann, 2008, p.97) There exists several aspects which reinforce the value creation with respect to networks.

Access to New Actors

By means of social media it is easier to connect and communicate with experts in a specific field around the world. Thus, existing value constellations can be supplemented by the expertise of new actors, which were not available before due to financial, space or time constraints. Experts might be added as an instructor in an online remote training session in a corporation (Bueno, 2011) and also in higher education the opportunity exists to invite experts via Skype on a specific subject outside the institution to contribute with their knowledge to

the learning development of a class (Josefesson, 2011). It is not only possible to connect experts with non-experts in a specific field, but also experts among themselves can use social media to facilitate their interaction. Steve Mahaley, Director of Learning Technologies at Duke Corporate Education, introduces the service of a platform to connect different professionals in a field. Beyond that Per Andersson, sees opportunities in linking alumna of the Media Management course at SSE with current students of the course, as he often receives student related requests from alumna and ultimately views the boundaries between student life and working life become increasingly blurred (Andersson, 2011). Thus by means of social media existing value constellations can connect to experts and access their knowledge on a much lower cost than before the existence of web 2.0 technologies. The findings also show that social media empowers actors of existing value constellations to link to new actors with different level of expertise, ranging from newly graduated alumna on the way to become experts to long-time experienced professionals. This is in line with Eijkamnn (2008), who states in his articles "It is now much easier to establish or link up with knowledge-producing networks in which students can readily share multimedia files, engage in conversations, and disseminate ideas across the hierarchies of expertise that comprise their networks of practice." (Eijkamnn, 2008, p. 97)

Cultivation of Larger Networks at Lower Cost

Social media represent tools, which allows individuals to cultivate larger networks at lower costs. The mere size of the network can be value-creating. This is indicated by Metcalfe's law, which states that the value of a network is more than proportional to the number of its members included (Ramírez, 1999). Although the author referred to telephone networks, the same is likely to be applicable to knowledge networks as well, as the knowledge which one additional member brings to the network is valuable to everyone more than proportionally.

Enabling and Relieving Actors

Other network related value creation mechanisms are represented by activity reconfiguration, in particular by the concept of relieving and enabling actors. Enabling and relieving represent "opportunities based on the better utilization of the joint resources of both parties, […]" (Normann & Ramírez, 1998, p. 59) and it is also about discovering "new ways to create more value through more effective means of matching shared activities."(Normann & Ramírez, 1998, p. 60) The findings of this study indicate that by means of social media enabling and relieving of actors can take place. The previously discussed access to experts, e.g. in a class-room setting, relieves the instructor to lecture about a topic in which he or she prepares and gives a lecture at a rather high cost. High costs arise, as the lecture must read up on the topic

as he or she is not an expert in. If the expert is empowered, he or she can at lower cost convey timely and accurate information and therefore create value. The same logic holds for discussions forums in a corporate setting or Q&A forums in a class room environment. While traditional answerers of questions are relieved, e.g. the instructor, previously hidden experts are enabled to distribute their knowledge. For instance within a corporation an employee might pose a question into a discussion forum, and an unknown employee with the right expertise at the other side of the world answers it. The quality of the expert information in itself is likely to create value as well as it is more timely, accurate and relevant (Bueno, 2011). On a more macro-level perspective on learning the concept of engaged partiality can also be connected to the mechanism of relieving and enabling. The concept of engaged partiality incorporates the idea that "the rate and complexities of knowledge production precludes any one individual from claiming exclusive ownership of, or full proficiency in the domain." (Eijkamnn, 2008, p. 99) While one single individual is relieved of knowing everything about a specific subject area, as this is not possible any longer, a network of actors is empowered to become specialists in a subfield. Thus, web 2.0 not only cause and propel this development but social media can also assists as a cost-effective tool to efficiently support and coordinate the aforementioned phenomenon.

Change in the Sequence of Actions

According to the value creation theory by Normann & Ramírez value can also be created by altering the sequence of actions between actors. Previously sequential executed actions can now be carried out simultaneously. This is in accordance with suggestions of focus group participants who proposed that the utility of the Media Management platform would be increased, if it could be exploited in a way than online on-platform discussions during presentations or instantaneous feedback upon presentation end could take place. Thus time is saved as actions are carried out at the same time. This is only possible to the point where the full attention capacity of actors is used up. This example illustrates how social media can create value by allowing for simultaneous transaction of actors and also by engaging more actors in a certain action.

7.2.5 Macro-Level Related Value Creation

According to Normann and Ramírez (1998) value creation processes on a macro level include or are triggered by business development, inter-institutional or intra-institutional change and the construction of new mental concepts.

Intra-Institutional Change: Innovation of the Innovation Process

An intra-institutional change by means of social media and its inherent value creation mechanisms is visible in how Gustav Jonsson, Marketing Manager at Incentive, depicts the journey of an idea within a company. He describes that an idea might be initiated on a microblog, is picked up in a meeting, where meeting notes are written down in a wiki, from those notes someone might report on an internal blog and the idea finally grows into a project and ultimately in a patent or certified document (Jonsson, 2011). This represents an example how social media tools innovate the innovation process within a company, which represents a type of intra-organizational change. Traditionally, the task to innovative has been reserved to scientist, engineers, designers, lead users or employees in the R&D department, as they were said to have the right qualifications and experience. Companies increasingly question this approach and let other actors participate in the innovation processes as well, in which social media assists to facilitate interaction, communication and sharing of idea (Mcafee, 2009). The focus is in the inclusion of customers and supplier for instance. Companies should not neglect the ideas and innovation power of employees in these processes. Open-innovation creates value in the way that it can reduce costs and simultaneously increases the number of profit generating innovation. "A recent McKinsey survey found that 20% of companies have opened up their innovation processes to employees and customers and they report a 20% rise in the number of innovations, on average." (Mcafee, 2009, p. 80) Additionally, the use of different social media tools also results in the innovation process being more transparent (Jonsson, 2011). This transparence has the potential to reward everyone, who contributed to the generation of an innovative idea and not only the one, who finally published it or picked it up in a project.

Inter-Institutional Change: Facilitating Interaction with Outsourced Experts

Next two examples of inter-organizational change, the role of social media in it and inherent value creation are shown to the reader. As described above the findings of this study indicate that different social media tools are seen as cost efficient way to connect with internal and external experts and facilitate interaction on a global scale (Bueno, Joefsson, 2011). This finding can be connected to the trend, which is illustrated by Mayika & Roberts & Sprague, (2007, p. 3) as follows: "As more and more sophisticated work takes place interactively online and new collaboration and communication tools emerge, companies can outsource increasingly specialized aspects of their own work and still maintain organizational coherence." The authors subsequently describe that the top talents might be a freelancer in

India or an employee of a small company. “Software and Internet technologies are making it easier and less costly for companies to integrate and manage the work of an expanding number of outsiders and this development opens us many contracting options for managers of corporate functions.” (Mayika & Roberts & Sprague, 2007, p. 3) Thus, social media tools play a central role in driving this trend further as web 2.0 technology lays the foundation for the cost-efficient interaction with experts. Ultimately, this trend also gives rise to new business development, which is also identified as one value driver by Normann and Ramírez (1998). A new talent deployment model was initiated for software developers; more specifically an organization called TopCoder was founded. The company has built a network of software developers, whose knowledge can be accessed in the form of orders by outside companies (Mayika & Roberts & Sprague, 2007).

Inter-Institutional Change: Interaction as a Source of Value

Steve Mahaley emphasizes that learning is often enhanced by interactions, based on learning theories on the social construction of knowledge. Organizational learning is often accelerated by dialogue, shared experiences, personal relationships and other forms of informal learning. Social media tools focus on connecting people to people and therefore can play a significant role in fostering and supporting the above mentioned situation (Mahaely, 2011). Social media can therefore be a major value driver in the trend, which can be described as gaining more value from interactions by Mayika & Roberts & Sprague (2007). According to the authors, companies in developed countries offshore transformational activities as production to a greater extent as well as transactional work, consisting of clerical work. The remaining tasks within developed countries require conversation, interaction, negotiation and collaboration, which are labeled as tacit interaction. To illustrate the dimensions of this trend by 2015 44% of all employment in the USA will consist of tacit interaction. Social media tools can assist employees who mainly interact tacitly to become more effective, by creating an environment in which knowledge is more accessible, timely and relevant. Ultimately companies will engage in managerial innovation in creating more value in their interaction, which potentially gives a company the competitive edge as networks of people and talents as well, as processes are hard to copy (Mayika & Roberts & Sprague, 2007).

Both trends show that it is becoming increasingly important to make the knowledge of employees more and more accessible, also as today a competitive advantage is not reached by superior technology anymore, but by attracting the greatest talents (Mayika & Roberts & Sprague, 2007). Therefore it will become increasingly important to facilitate interaction, sharing and collaboration among the employees of a company. A modern communication

culture in a company might ultimately be a positive aspect in any personnel marketing strategy to attract young talent.

According to Normann & Ramírez (1998) the construction of new mental concepts can also lead to value creation. The finding for this study indicated the traditional definition of a teacher and student increasingly becomes blurred in higher education. Teachers rather take the important role of a guide and facilitator in the interaction process. Learners engage in discussions and socially construct knowledge (Andersson, 2011). Social media can create value in this trend as interactions can be transferred to digital dimensions or parallel interaction processes, e.g. a presentation is accompanied by a Twitter feet, by digital technologies.

7.3 Sources of Value Creation – Outside the Theory by Normann and Ramírez

This section illustrates sources of value creation by means of social media not explicitly mentioned by the value creation theory of Normann & Ramírez. These sources concern side-effects, context-specific factors or actor-specific factors on a micro level. While they also might be implicitly derived from the value creation theory by Normann & Ramírez their importance speaks in favor of a separate analysis.

Generation of a Value Creating Environment

Value can be created by generating the right environment in which social media is used by the respective actors of the value constellation. One of these context-specific factors includes the incentive system of engaging the actors in the desired behavior. This is especially important as web 2.0 technologies merely give the infrastructure, however the behavior is needed to turn the technology into social media. The theoretical framework incorporates a value-in use idea, e.g. value is created in the interaction of actors in the value constellation. More practically, this means that value is first created when individuals share, interact and communicate via social media. Therefore, the right incentive system to start the interaction and the characteristics of social media reinforce each other. According to the findings of this study recognition and feedback are two drivers of individuals engaging in social media informally (Strate, 2011). Hence it is important to transfer these processes into the formal use of social media. Gustav Jonsson emphasized that to trigger a sharing behavior user must recognize “If I share, then I get something back.” (Jonsson, 2011) Beyond that is essential to make the sharing process transparent, e.g. top contributors are visible to satisfy the need for recognition. From a theoretical stand-point the need for recognition can be explained by Maslow’s pyramid of needs, which describes the hierarchical order of human needs. Recognition can be

categorized as a self-esteem needs and self-actualization need (Maslow Online, 2011). As social media content potentially is visible to a large audience, recognition can be gained from a higher number of individuals. Common methods to give transparency to the sharing process and highlight top contributors are rating systems, top contributor lists and similar rewarding mechanisms as FourSquare uses. Additionally, real-life or virtual rewards can be tied to the performance of top contributors. Rewards, however must be relevant and value adding to the to be rewarded employees to have an impact on their behavior (Strate, 2011). Other mechanisms, which encourage the interaction between users and finally assist value creation, are the gamification of the internet and inbuilt competitions (Strate, 2011). Competitions must be adequately constructed and a superior goal must be visible in competitions which individuals try to reach. Otherwise individuals may refuse to engage in sharing behavior, as they feel they give up their competitive advantage in the form of exclusive information or knowledge compared to other actors in the value constellations. Therefore, different layers of interaction within social media might be the prerequisite for a usage behavior of individuals. For instance if there is team based evaluation, the communication among one set of team members should not be visible to the other teams, however simultaneously, some possibility of interaction between teams must be existent (Rosenqvist, 2011).

Opportunities of Creating Transparency

Other context-specific factors with regard to social media, which are likely to create value are social media's potential to generate a more transparent environment, in which information are more timely and relevant. From an economic perspective, social media can therefore render information asymmetries in a market. On an abstract level a market can be the internal level for information and ideas within a company. In a global corporation an upcoming question can easily be posted in an internal discussion forum and answered by an expert in another part of the world (Bueno, 2011). Value can therefore be created in the form of better decisions or higher quality output due to more timely and relevant information. That transparency can lead to higher quality could also be concluded from the focus group. Within module one of the Media Management course students had to upload several presentations to the blog-like platform, which were then accessible to all students before a respective deadline. Several students described that they looked at uploaded presentation to assess the standard and quality of them before they created their own presentation. One student, who was short in time, even took key outtakes from other presentations and recombined them into his new own one (Focus Group, 2011). In contrast to the found positive effects, it can be questioned if an increase in the level of transparency only leads to positive effects. Individuals competing for high-quality

presentations in the above mentioned scenario can fall captive to a "rat-race" behavior, which describes a situation in which individuals excel an increasingly pointless amount of effort to reach a certain goal, however, it can ultimately lead to self-destruction.

Abundance of Other Technologies

A rather paradoxically value creating side effect in the increasing use of social media represents the abundance of other technologies. Several interviewees view the value in the increased application of discussion forums and wikis to organize projects and teams, in the decreased use of e-mail technology. Hence the overload and clutter of inboxes is cushioned as for instance a project wiki can be used to upload meeting protocols and multiple version of the same document is not sent around (Melke 2011; Jonsson, 2011). Considering the scope of a global corporation the increased use of social media technologies for aforementioned purposes can entail costs savings in the form of less data storage or time savings on an individual employee level. For instance employees do not need to browse their inboxes for specific documents for a considerable amount of time, but can simply go to the respective project wiki.

Adjustment to Different Learning Styles

Value creation on a micro actor-specific level by means of social media can include catering for different learning styles in higher education for instance. This is achieved by complementing traditional teaching methods with web 2.0 technologies. While an extroverted learner prefers to participate in a real-life in-class discussion, an introverted one is likely to favor to take part in virtual conversation on an online blog for instance. Thus by means of social media, more learning styles can be minded in a very cost-effective idea. As a result social media can play an important role in satisfying a more pluralistic and diverse set of needs in a training situation.

7.4 Quantitative Findings & Analysis

Subsequently, the findings of the quantitative analysis are presented to the reader and insights are developed from them. The objective of the quantitative survey was to assess if context specific factors with respect to social media had an impact on technology acceptance and thereby also influenced value creation. In more detail it was examined if technology acceptance of social media in informal learning compared to formal learning differs. In this context the quantitative analysis takes a secondary role and is supportive to the qualitative analysis. Both versions of the questionnaire were based on the Social Cognitive Model of technology acceptance as described by Venkatesh et al. (2003). Version A describes

technology acceptance of social media in a formal environment, version B refers to the informal environment. In total there were 102 respondents to version A of the questionnaire and 61 individuals answered version B. 3,9% of the responses of version A of the questionnaire disqualified, while for version B this percentage amounted up to 11,5%. The prevailing reason for disqualification was the age of participants. Responses of subjects who are older than 30 were excluded, to attain an array of individuals, who has grown up with digital technology and sees the different type of media as an extension of their lives. The slightly higher disqualification rate of version B was caused by sampling technique in a slightly less controlled setting, namely Facebook. Except in the online environment, potential respondents were directly asked if they could complete a questionnaire. This direct approach of test subjects lead to a response rate of about 80% in the non-online environment. In order to check for respondent reliability, different values for Cronbach Alpha were computed for both versions of the questionnaire. For version A, the number of items included ranged from two to four. The five values of Cronbach Alpha which were calculated ranged from 0,642 to 0,895. Only the value of the lower bound indicates a questionable result, however, three out of five values were above 0,8. Hence, the results point at an acceptable to good respondent reliability for version A of the questionnaire. For version B of the questionnaire four values of Cronbach Alpha with each two items were computed. These ranged from 0.686 to 0.816. One value of Cronbach Alpha hints at questionable response reliability, two at an acceptable one, and one value speaks in favor of good response reliability. Neglecting the lower bound, it can be concluded that version B has acceptable response reliability as well.

7.4.1 Descriptive Findings

In this part only the most important results of the descriptive analysis are presented to the reader. Complete tables of the descriptive statistics can be found in the appendix V, p. 103 - 111. For version A of the questionnaire, the average respondents' age is 22,29 years and the average computer skills on a scale from one to seven is 5,21. In the results of version A it was conspicuous that a lot of the means were around 3,5. Thus 37,1% of the variables means' were in the interval [3.3 – 3.7], 40% of the variables means were below this interval and respectively 22,9% were above this interval. These values indicate that on average respondents showed more agreement than disagreement to the presented statements in the questionnaire. For version A the three lowest mean values are attached to the following statements, which refer to the use of social media in formal learning. "Social media is easy to use", with a mean value of 2,28 on a scale from 1 (strongly agree) to 7 (strongly diasagree),

then “Because I have the knowledge to use social media” with a mean of 2,45 and “Learning to use new social media channels is easy” with a mean of 2,46. The three highest means are linked to the subsequent propositions: “Using social media is frustrating for me” (mean: 5,36), “I perceive it as inappropriate to use social media” (mean: 5,23) and “Not engaging in social media decreases my reputation” (mean: 4,8). Statistics of relative frequencies reinforce that the mean values are not impacted by extreme outliers but represent the sample. Standard deviation range from 1,23 (“Social media is easy to use”) to 1,75 (“Once I use social media, I find it hard to stop.” On a scale from one to seven, respondents’ answers covered the whole scale for 86% of the statements. For version B of the questionnaire, which describes the use of social media in informal environments, the descriptive statistics look slightly different. The average age of a version B respondent amounted up to 23,52 years and the average computer skills are 5,46. Compared to version A, in version B only 20% of the variables’ mean values are in the interval [3.3. – 3.7], whereas 60% are below this interval and 20% of the variables’ mean values are above this interval. This already indicates that respondents’ answers on average are more shifted towards the “Agree Completely” alternative compared to version A. The statements, with the three lowest mean values on which respondents seem to agree the most for version B are “Social media is easy to use” (mean: 1,63), “I like using social media” (mean: 1,83) and “Learning to use new social media tools is easy” (mean: 2,00). The three propositions, which are connected to the highest mean values are the following: “I perceive it as inappropriate to use social media” (mean: 5,61), “Using social media is frustrating for me” (mean: 5,44) and “Not engaging in social media decreases my reputation” (mean: 4,74). According to relative frequencies, these values represent the sample population. Standard deviations cover a range from 0.78 (“Social media is easy to use”) to 1,86 (“The main purpose I use social media for is not connected to learning.”). On a scale from one to seven, respondents’ answers covered the whole scale for 54% of the statements. For version A the high percentage of mean values being centered around 3,5 could be a sign for inadequate question design, however, pretests of the questionnaire did not reveal any difficulties in completing it. Secondly, the same questions coupled with a different introductory text have been used for version B, which resulted in a less percentage of means taking a value close to 3,5. This difference in mean value could be triggered by the context. Thus, while respondents seem to be more opinionated and determined on social media in informal learning, they are less decisive on the use social media in formal learning situations. This could also be corroborated by the fact that respondents’ answers covered the whole scale in less percentage of the statements for version B.

7.4.2 Explorative Findings

The aim of the quantitative part is to assess if technology acceptance of social media in informal learning compared to formal learning situations differs. From this interferences are drawn for value creation. Therefore, as a next step the mean values linked to 30 identical statements in both version of the questionnaire were compared and tested if they were significantly different. Based on Technology Acceptance Model, the statements can be grouped into the following categories: individual outcome expectation (IE), effort expectancy (EE), social influence (SI), self efficacy (SE), facilitating conditions (FC), affect (AF) and anxiety (AX). As a prerequisite step, the data of both samples were tested for normality. Based on graphical analysis and the results of a Kolmogorov-Smirnov-Test with 5% significance level the assumption of normal distribution was turned down. Therefore the Mann-Whitney-Wilcoxon Test, a non-parametrical test to compare independent samples, has been selected for the analysis of mean values of the different variables, which are represented by the statements. The results of the Mann-Whitney-Wilcoxon test with a 5% significance level can be grouped into three categories: First, means are significantly different based on exact one-sided and two sided significance, second means are not significantly different and third the computed values for one-sided and two sides significance delivered an ambiguous end result. In all cases in which the means were significantly different, respondents of version B tended more towards the "Agree Completely" option. A verbal overview of the results follows, while a table with numerical results is appended (Appendix V, p. 105 -111).

Means are significantly different.	**Means are not different.**
A_OEI3: I find it easier to use social media instead of other means to accomplish the task.	A_SI3: Not engaging in social media decreases my reputation.
A_EE1: I believe it is easy to use social media for the required task.	A_SE2: By asking colleagues to give me hints, where to find information.
A_EE2: Social media is easy to use.	A_SE3: If I'm having a lot of time to find the relevant information.
A_EE3: Learning to use new social media channels is easy.	A_FC1: Because I have used social media in another context.
A_SI1: People, who are important to me, think I should use social media.	A_FC3: Because I have the knowledge to use social media.
A_SE1: Without further instruction.	A_FC4: Because the technical requirements to use social media are supported by my technical equipment.
A_FC2: Because I have used social media in a formal learning environment before.	A_AF3: Using social media is frustrating for me.

A_AF1: I like using social media.	A_AF4: Once I use social media I find it hard to stop.
A_AX1: I feel comfortable using social media.	A_AF5: Social media makes work more interesting.
	A_AF6: Social media makes learning more fun.
Ambiguous Results	A_AF7: I perceive it as inappropriate to use social media.
A_OE1: I will be perceived as skilled using social media.	A_AX2: Information retrieved from social media lacks the required quality and deepness.
A_OEI2: I will develop skills that are relevant for future tasks/ work.	A_AX3: The quantity of information which I retrieve from social media is not sufficient.
A_EE4: I'm open-minded to use new media channels.	A_AX4: I miss important information using social media.
A_SI2: Supervisors and teachers encourage the use of social media.	A_AX5: Social media is not suitable due to the aggregation or incompleteness of information.
A_AF2: I'm looking forward to tasks which require the use of social media.	A_AX6: The information retrieved from social media lack impartiality.

Table 4 - Verbal Results of the Mann-Whitney-Wilcoxon Test

7.4.3 Insights Drawn from Quantitative Findings

Subsequently, the most important insights, which are drawn from the quantitative results, are summarized. In cases where the mean value attached to one statement differs significantly between version A and version B, one can conclude that the described context, e.g. informal or formal learning lead to a different perception of the presented statements. Thus in the context of informal learning individuals perceive to a higher degree that social media is easy to use and that learning to use new social media channels is easy. Additionally, there was a higher agreement to the statement "I like using social media" and "I feel comfortable using social media." This higher degree of liking and perceived ease of use in an informal learning context raises the question if it is more beneficial and value-creating to provide social media as an additional communication channel in a corporate or academic without incorporating it explicitly in formal training, course or as mandatory tool for project management. This then creates an informal learning context. Organic growth of use out of this informal learning context even into formal learning at a later stage then is likely to lead to a higher value creation. Additionally, there can be more acceptance in the beginning. Beyond that in the formal learning context, respondents showed less agreement to the statement "I know how to use social media, without further instruction." Thus, value might be created by explaining explicitly and showing ways in which social media can facilitate formal learning. A clear and hands-on value demonstration is important, as individuals only know and associate social media to an informal context, e.g. for instance to connect to friends. Furthermore, in the

informal learning context individuals seem to prefer social media to accomplish a certain learning task to a higher degree and thinks it is easy to do so. Thus, in informal learning individuals seem to be more open-minded and accepting. Three of the described statements are included in the category of effort expectancy. The results indicate that the informal learning context is likely to have a positive effect on effort expectancy (EE), while it does not have an effect on other dimensions, as anxiety (AX), affect (AF), facilitating conditions (FC) and self-efficiency (SE). For instance the context has no effect on the perception that by means of social media learning becomes more fun or that the quality and quantity of the information is not sufficient or inadequate. The results only show rough indications and should be reinforced by other studies, however give an idea what impacts value creation.

7.5 Obstacles to Value Creation & Situations of Value Destruction

While the value creation theory by Normann & Ramírez describes in great detail how value is generated, it does not explicitly look at obstacles in the value creation process or even mechanisms of value destruction within a value constellation of an offering. Therefore, the subsequent part does exactly this and simultaneously complements the prior established conceptual framework. An analysis of those mechanisms is important in a practical sense as they can lead to resistance and decrease of use of the respective technology. That these mechanisms are at work can be seen at the following example, e.g. in regard to virtual office hours or adoption of social media higher education "[…], our study found that students usually prefer other means of student-faculty interaction such as e-mail rather than using traditional or virtual office hours." (Li, Pitts, 2010, p. 181) During the implementation and use of the Media Management platform in class, there was less interaction than expected among students. The following described obstacles to value creation and mechanisms of value destruction has been directly found or implicitly derived from the qualitative findings of this study.

7.5.1 Wrong Cost Assumption

In analogy to the use of social media for external communication, often wrong cost assumptions are associated with social media in training. Decision makers often pass social media for cost effective communication and interaction tools. While in external communication the pitfall consists of passing social media for a one-way communication channel, similar mistakes are visible in training situations. First after a while, actors in the

value constellation begin to realize "[…] it is not costly in terms of software but it is costly in terms of man hours - you have to be there." (A.M., 2011) Also, Rickard Hansson, CEO of Incentive, emphasizes "When we have a successful case with our clients, it is 100% always a real driving force within the organization, […]". In the case of Incentive's clients, this driving force constitutes lead users, so called ambassadors, who are willing to invest a lot of time and energy not only in the beginning stage, but also in the ongoing process (Hansson, 2011). Beyond that all actors of a value constellation need to spend time on social media, and additionally time cannot be simply shifted from group of actors to another. The introduction of the Media Management platform into the Media Management class illustrated the latter aspect quite well. It was not sufficient that only the platform administrators tried to stimulate interaction among other actors of the respective value constellation, namely students, teachers, and potential guests. However, teachers played a key role in this value constellation and would have needed to engage themselves more to spark more non-mandatory interaction. Secondly, in the planning stage of the Media Management platform the costs of implementing and running the technology were taken into account, while man hours on the part of teachers, were not explicitly calculated. As a result of wrong cost assumption, there was insufficient resource allocation in terms of man hours and ultimately low interaction levels. Wrong cost assumptions represent obstacles in the value creation process, especially as social media incorporates the value in use idea. "If a student does not receive comments from his peers on his blog, or on his photographs on Flickr, then he may not derive the intended value from contributing on these tools." (Minocha, 2009, p. 388)

7.5.2 Shifts in Power Structures

One obstacle in the value creation by means of social media represents shifts in power structure for actors in the new value constellation. The use of social media can involve the loss of control for one group of actor while others are empowered. Additionally, roles of actors from established value constellation are likely to be questioned. For instance, in the case of the Media Management platform teachers feared the loss of control over discussion, if these were transferred or extended to the online platform. In such a situation their role as a facilitator and guide of a discussion to achieve a certain learning objective would be partly abandoned as teachers are only able to monitor the discussion for a limited amount of time (Andersson & Sutton, 2011). With regards to the change in role of educators, Minocha (2011, p.387) remarks "The perception might be in conflict with that of the educator's who may still

see his (or her) role as delivering education and instructions." Drawing a parallel to brand management, in this field, the loss of control over a brand has represented a great fear to managers as well. Hence, teachers, who are unwilling to give up power, are not fond of or even show resistance to transfer of discussion to an online space. Other example of power changes apparent in the findings of this study were the following. By engaging in open innovation, companies empower every employee to contribute their ideas for instance in a forum or wiki, while there is a change in the power of R&D departments or product development teams. As a result they lose their exclusivity of delivering suggestion for innovation. In some cases IT departments in companies lose control or their role to explain new computer systems, as social media has a very intuitive interface. The authority of IT departments has been undermined completely in the case of a company, where employees introduced Yammer, an enterprise social network without the permission of the IT department (Jonsson, 2011). Concluding, obstacles in the construction of new value constellation are likely to occur, when there is a loss of power or change in roles of actors compared to established value constellations.

7.5.3 Is your Company Culture Compatible with Social Media?

The culture of an organization or academic institution can either be an obstacle or a driver to the use of social media and its inherent value creation. Rafael Bueno, who is closely affiliated to a global corporation states, "People here tend to share a lot because one way you are rewarded is also by sharing things and when people reapply things you have done, you get your credits on this. It is about our culture. "While the importance of incentive system is highlighted in the next section, a culture in which individuals are encouraged to share ideas and thoughts plays a major role in the adoption of social media tools. Beyond that a bottom-up culture is likely to foster the use of web 2.0 technologies. By means of social media a larger share of companies is empowered in an organization and simultaneously hierarchical structures are flattened to some extent. Another cultural element, which can be reinforced by social media is giving feedback, e.g. to colleagues, superiors or subordinates. For instance positive ratings and feedback to an employee's answer to a question in a forum are likely to lead to the same employee answering other questions as well. Every cultural element, which differs significantly or represents the opposite brings about an obstacle in the value creation process of using social media tools.

7.5.4 Inadequate Strategy and Incentive Systems

Willyerd & Meister (2010) describe in their article the common myth that if you provide social media tools, the users and their interaction will automatically follow. They explain that "social media is not an add-on or an accessory to communications or learning, but it is surprising to see companies suggest they need to add some social media to the mix." (Willyerd & Meister, p. 5, 2010) An alignment with the overall management strategy, the individual workflow and the employer brand is necessary for social media to be successful.

The following section illustrates the dilemma of introducing social media tools in higher education. Incentive systems are taken as an example for one part of a strategy. Actors to the new value constellation of using social media in higher education are still confronted with non-adjusted incentives systems for this new tool. This situation ultimately represents an obstacle to value creation. Thus teacher, who still bear a critical role in this new value constellation, have no incentives to experiment, try out and constantly use social media in class, as they receive no credit, reward or recognition for it (Josefsson, 2011). This situation changes slightly, if teachers publish articles of the results of their social media experiments and thereby gain recognition. On an institutional level innovative teaching approaches and the use of web 2.0 technologies might be encouraged in statements and policies, however, these aspects are not factored into the target agreement or evaluation of a teacher's job. Thus, no meaningful incentive is established (Rosenqvist, 2011). Due to this situation, time is not seriously allocated to the familiarization with social media, unless a personal interest is prevalent (Josefsson, 2011; Andersson & Sutton, 2011). Although the functionally of social media, which facilitates sharing ideas and files provides value and a superior approach over other ways to sharing on a peer-to-peer level, teachers are very much engaged into a routine behavior of employing long established methods (Rosenqvist, 2011). On an individual level the costs for leaving this routine behavior are likely to be very high, especially if no incentives are given which would increase the pay-off of a behavioral change. An adequate incentive system must not only be provided to teachers but also other critical actors in the value constellation as students. Some individuals resist to sharing ideas and knowledge as they think that they will lose their competitive advantage (Strate, 2011). This type of behavior and logic can also arise on a team-level. A second impediment to sharing represents relative evaluation of students' performance or team performance, which is most existent in a class-room environment. "Whenever rewards of any kind are based on relative performance, workers have little incentive to cooperate and every incentive to compete." (Lazear, 1998, p. 266) Thus, if several teams work on a case study and are graded based on the other teams'

performances they have no incentive to share critical ideas on a blog or in a wiki for instance. Hence, some higher type of objective, on which each individual is evaluated on his or her absolute performance, should be added. For a Media Management class a higher objective which encourages sharing on a blog could be a competition for a relevant internship, whereby the performance on the blog is decisive for the placing decision (Strate, 2011). It could also be a scrapbook, which incorporates the most interesting discussions and articles along with the CVs of class participants. This book takes the role of an advertising tool and is send to relevant companies in the media industry (Rosenqvist, 2011). This discussion demonstrated the importance of adjusting a company's or educational institution's strategy to achieve a value creating environment for social media.

7.5.5 Digital Natives – Do they exist?

One perceived obstacle in the diffusion of social media tools in organizations or academic institutions is the resistance or incapability of older individuals towards web 2.0 technologies. Age is seen to be a decisive factor in the adoption of social media and thus an obstacle to value creation. This view is partly reflected in the qualitative findings of this study as well. However other perspectives were also present. On the one extreme, KTH researcher Pernilla Josefsson (2011), describes that it is pushed "too far to say there is a new generation, because I do not think it is about age, it is about the interests." Hence, the individual preferences and interest of a teacher are reflected in his or her teaching style and willingness to incorporate social media. On the other extreme a digital apartheid between digital natives and digital immigrants is said to be existent (A.M., 2011). While opinions about this issue are also mixed in academic articles, some empirical statistics reinforce the perspective that the decisive factor is interest and not age. Willyerd & Meister (2010) illustrate that multiple generation use social media. Social games, as Farmville and Mafia World have more than 100 million users in the United States and United Kingdom. The average user age is 48 years. Additionally, "the fastest growing segment on Facebook is people between the ages of 35 -49 years old." (Willyerd & Meister, p. 5, 2010) These figures show that there is a significant share of digital immigrants, who are interested in social media and simultaneously there is a rising trend among them to adopt web 2.0 technologies. However, it is very likely that at the moment a greater share of the younger generation shows an interest in social media and has a routine usage behavior. Simultaneously, there exist young individuals who are not fond of using social media at all. This clearly demonstrates that it is more a question of interest than of age.

Individuals with an established usage behavior can easily transfer their skills to more formal social media tools, while the cost for non-interested individuals to adjust their established working flows might be very high.

7.5.6 Top Management: Obstacle or Value Guard?

Similar to the question of age, the findings on the role of management in the adoption process of social media were mixed. However, there was unanimity that the full support of the top management is an important prerequisite for a successful implementation of web 2.0 technologies (Hansson, 2011). The attitude of top management towards social media technologies can vary a lot and is also impacted by the age or more adequately interest of individuals. Findings included that the top management is now more open-minded to experiment with newer communication technologies than a few years ago (Bueno, 2011). The upper management was easy to convince, as employees who initiated a social media initiative also belonged to the top management (Melke, 2011). Another finding was that top management took a very critical role towards the implementation of social media tools and first had to be demonstrated the value proposition inherent in social media. Initial attitudes were that "A lot of C-level management sees these techniques as being stuff that their employees should not be doing in their working time."(Jonsson, 2011) The demonstration of value creation is most important aspect in top managements' eyes. In the latter case the top management can be seen to some extent as an obstacle in the value creation process as they show some resistance to social media initiatives. However, their critical role can also be passed as fulfilling an important function, namely to ensure that there is a clear value proposition inherent in social media tools for their specific company. One approach to measure this value, is to assess the time savings of finding things faster e.g. in wikis by employees (Jonsson, 2011). Meister and Willyerd (2010) also counter in their article the common assumption that the effects of social media and the technologies return on investment are difficult to assess. They suggest that employee engagement scores, employee productivity, increase in new hires and retention of employees could give an indication for the success of social media technologies. The findings were divided on the issue on how top management should contribute to social media once it is implemented and in use. Some interviewees took the view that the engagement and contribution of upper management to internal social media solutions could further the adoption of these technologies by other employees. This perspective was often combined with the idea that the language used in social media solution

was semi-formal, not as formal as in official e-mails, however, more formal than if you use social media in your leisure-time (Bueno, 2011). One other side, some interviewees emphasized that top management should not tamper into wikis and blog, unless a specific question was directed to them. This behavior of management in combination with a rather loose language within the solutions supports interaction and engagement of employees (Jonsson, 2011). These results show that is it likely to be case sensitive, if and how top management should engage themselves into social media solutions and decisive factors can be the company culture and the attitude of employees towards management.

7.5.7 Other Obstacles in the Value Creation Process

The following section summarizes other obstacles in the value creation process of social media. One critical step in the implementation process of social media in learning represents the introduction of the respective tools to employees or learners. This can represent an obstacle in the acceptance and use of social media (Jonsson, 2011). As illustrated before, inherent in social media tools, there is a value-in-use context, thus value is only created and visible in the interaction of individuals. Therefore, in the introduction stage the solution is empty and the value is not readily accessible. That is one reason for which Incentive first introduces their solutions to a small group of enthusiastic employees, so called ambassadors, and let the use the solution before it is gradually spread in the company. It is not pushed out in a campaign, but interested employees are introduced to the solution by brand ambassadors. As the solution has been used by brand ambassadors, the value is more visible to other employees in this situation (Jonsson, 2011; Hansson, 2011).

Several interviewees also indicated that in order for an individual to try out a new social media, the first step to actually use must be very low. Thus, a clutter-free, intuitive interface, in which main functionalities are readily visible assist to lower the barrier for usage (Jonsson, 2011). Counterproductive to lowering this first step are for instance the requirement to enter one or several log-in information before a tool can be accessed, as it was initially the case with the Media Management platform (Focus Group, 2011). Especially for blogs the comment function must be very visible and comments should be possible without log-in (Teigland, 2011). While a log-in function increases the barrier to usage, it might be necessary, as sensitive information are posted by actors of the value constellation. Additionally, there is the threat that students are concerned that their posts, ideas and presentations are publicly accessible to everyone (Minocha, 2009).

Mandatory uses of web 2.0 technologies can represent an impediment to the quality of the information and ideas shared. KTH research Pernially Joefsson (2011), made a certain amount of participation mandatory in one of her classes in which she introduced the blog. Without any further specification this resulted in a number of "I agree" comments to a post. This type of behavior did not add any additional ideas and thoughts, and ultimately value to the situation (Jonsson, 2011). Thus, the value proposition of a social media tool should be as strong to trigger intrinsically motivated usage behavior.

Another obstacle in the value creation process of social media is that individuals have created a certain meaning and associations towards a specific technology. This is also in line with Social Cognitive Theory on which the conceptual framework is partly based. This framed thinking inhibits potential user to adopt the new technology in another context. For instance, there is the need to rebrand tools that carry social media functionalities to avoid words as "social media", "wiki" or "RSS-feed". While the latter terms sound too technical, the first term sounds too much like a tool to be used in a leisure context (Melke 2011; Jonsson, 2011).

Other mental obstacles to the full usage of social media tools are that employees are very much used to a folder-like structure of documents organized in different levels, while social media offers a less structured environment and an emphasis of the search functionality (Jonsson, 2011). The outbreak of an established thinking and behavior represent the obstacle hereby. Even in if there is regular usage of social media in a leisure contest, a transfer of usage behavior to another context does not readily take place. While students used a blog in one class, they did not transfer the usage behavior to another class in which a similar course blog was present (Josefsson, 2011).

As social media is a about sharing and contributing, freeriding can and does take place. To take the example of Wikipedia, while about 80% of the users read articles only 20% actively contribute as well (Jonsson, 2011). This situation represents a potential obstacle, as the contributors might feel exploited and only be given a return to their contributions to limited extent. As a consequence active contributors might turn passive in the worst case scenario.

A consequence of social media usage can be that hidden problems within a corporation can surface, as employees use the characteristics of a new communication channel to voice their opposition to a company policy for instance. Individuals might find it easier to organize resistance in a forum instead of openly meet in the corridor of a company. A company, who introduces social media tools must be prepared to experience that issues are voiced and they have to have an adequate strategies to counter this (A.M., 2011).

Another concern of individuals, and therefore a potential obstacle in the value creation of social media, is that individuals perceive social media to accelerate transactions. As a result individuals, who use social media channels, lose out on things. For instance this loss can include the personal contact to learners, in case classes are transferred to the virtual space (Joefsson, 2011, Andersson & Sutton, 2011). This perceived threat to individuals is only partly justified as social media also has the described potential to intensify relationships.

8 Conclusion

In the subsequent part the main findings from the analysis are summed up and based on the research questions a conceptual model is presented, which incorporates the obstacles in the value creation process. Derived from the value creation theory by Normann & Ramírez

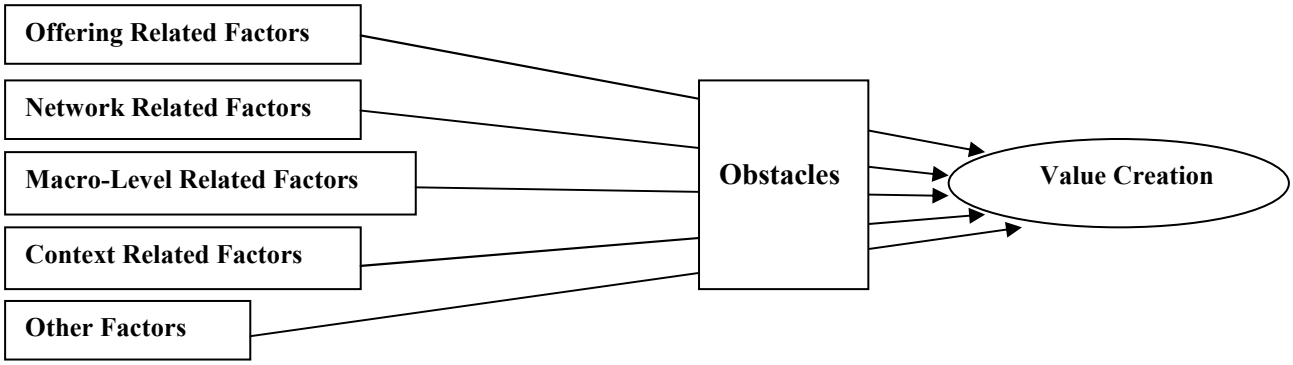

Figure 2 - Overview Conceptual Model

(1998), three categories of value creation have been identified, namely offering related value creation, network related value creation and macro-level related value creation. Liquidity related value creation includes an increase in service quality of formal learning, e.g. by virtual office hours or worldwide collaborations, the elimination of traditional barriers or artificial compartmentalization of courses, virtual meetings, internalization of critical knowledge and intensifying of existing relationships, e.g. by the reduction of the distance between practitioners and learners. Density related value creation is especially valuable for the communication of time sensitive information. Beyond that real life meeting time can be used more efficiently as non critical conversation can be moved to an online space and also the doubling of the work can be avoided. Value can also be created by bundling of different social media functionalities into a platform, seamless integration or aggregation of different systems, the incorporation of key functionalities, such as a search function and the design of the solution itself, e.g. a simple, non-crowded or intuitive interface. Network related value creation possibilities are associated with the interaction or incorporation of experts in a specific value constellation at lower cost as well as the cultivation of larger knowledge

networks. By social media specific actors in a network can be enabled or relieved, e.g. in a Q&A forum learners can respond to each others' questions and instructors are relieved. Macro-level related value creation via social media contains intra-institutional change, e.g. social media can innovate the innovation process within a company and inter-institutional change, which can include the optimization of interaction with outsourced experts. Social media can also assist to gain more value from interaction, as this becomes an increasingly important aspect in gaining a competitive advantage and also play a major role in the construction of new mental concepts e.g. the increasingly blurred roles between learners and instructors in higher education. Beyond these identified sources of value creation derived from the value creation theory of Normann and Ramírez (1998), other sources of value creation have been visible in the findings. As the value-in-use idea is incorporated into social media it is essential to set the right environment and incentive systems to trigger interaction. Recognition and feedback are two important drivers of interaction, as well as a transparent sharing process and real life or virtual rewards tied to the performance. Additionally game-like elements and inbuilt competitions can raise the interaction level and thereby increase value. Social media contributes to a more transparent interaction environment and thereby can reduce the cost of information asymmetries. The abundance of other technologies in the increased use of social media can also render the search cost associated with filled search boxes. Furthermore on a micro-specific actor level social media can be used to cater for different learning styles and thereby create value in learning situations.

Findings from the quantitative research give indications to the research question how the technology acceptance of social media usage in formal learning situations compared to informal learning situation differs. Major insights include the following. An informal learning context has a positive impact on liking, perceived easiness to use, perceived feeling of comfortableness of use and the perceived easiness to use new social media types. Therefore it might be more value-creating to introduce social media as an additional communication channel instead of a mandatory tool to keep the informal learning context. Value might also be created by explicitly explaining learners how to use social media for formal learning situations. Beyond that individuals seem to be more open-minded towards and accepting towards social media in the informal learning context. The results indicate that the informal learning context is likely to have positive effects on effort expectancy, while it has no impact on other dimensions as anxiety, affect, facilitating conditions and self-efficiency.

While the described aspects represent the factors of value creation, dynamics or obstacles in this value creation process have been visible in the findings, which have not been explicitly

described by the main value creation theory employed. A first obstacle is that social media is often passed as a low-cost alternative to other tools. Often wrong cost assumptions lead to an insufficient resource allocation of man hours which is essential to engage in interaction and thereby create value. Another obstacle to the successful implementation of social media represents shifts in power structure compared to the situation without social media and inherent resistance to a loss in power of actors in the value constellation. Company or institutional cultures which are top-down and represents impediments to sharing also represent obstacles in the introduction of social media into a learning situation. Inadequate incentive systems or non-adjusted ones to the new situation with social media can discourage actors to fully engage in social media. The assumption that digital immigrants show resistance or are incapable of using social media is questionable as it is a question of interest and additional value gained. Top managements' critical attitude towards the introduction of social media tools can either be seen as an obstacle or their role can be seen as a value guard. Other obstacles in the use of social media are the value demonstration in the introduction stage, as value is first visible in the interaction, barriers which do not lower the first step of an individual trying out the solution, the mandatory use of systems, an individual's association of social media being a part of a leisure context and freeriding. The following figure sums up factors of value creation and obstacles in a graphical form again:

Offering Related Factors

- increase in liquidity
- increase in density
- change of other product dimensions

Network Related Factors

- new actors
- activity reconfiguration (enabling/relieving)
- change in other product characteristics
- other (e.g. size of network)

Context Related Factors

- situation- based technology acceptance
- socio-cognitive aspects

Macro-Level Related Factors

- business development
- construction of new mental concepts
- inter-institutional change
- intra-institutional change

Offering Related Factors

- enhanced service quality
- removes barriers of traditional class-room interaction
- ability to free time of critical actors
- intensifies existing human relationships
- increase in amount of interaction in a given time period
- ability to use time more efficiently
- avoid doubling of work
- bundling of different functionalities into a platform
- integration and aggregation of different systems
- design of the solution
- incorporation of key functionality, e.g. search

Network Related Factors

- link to new actors, as experts
- easier connection of experts with experts and experts with non-experts
- activity reconfiguration (enabling/relieving)
- cultivate a bigger network at lower cost,
- change in the sequence of actions, simultaneous versus sequential

Context Related Factors

- informal learning context leads to higher degree of liking, preference, perceived ease of use, acceptance and open-mindedness
- impact on effort expectancy
- no impact on anxiety, affect, facilitating conditions and self-efficacy

Macro-Level Related Factors

- adding inclusivity and transparency to the innovation process
- definition of the roles of students and instructors increasingly become blurred
- facilitates interaction with outsourced experts
- underlines the importance of tacit interaction, as becoming more important

Obstacles

- wrong cost assumptions
- shifts in power structure
- incompatible company culture
- inadequate strategy and incentive systems
- focus on age and not on interest
- inertia of top management
- demonstration of value before use possible to a limited extent only
- non-intuitive interface
- mandatory use
- established associations towards a certain technology
- freeriding
- hidden problem surface in the interaction
- acceleration of interaction leads to a loss of things

Other Factors

- context-specific factors
- side-effects
- actor-specific factors

Other Factors

- setting adequate incentive systems, importance of recognition and feedback
- transparent sharing process
- different layers of interaction
- abundance of other technologies
- cater for different needs more cost efficiently

Figure 3 - The Summarized Conceptual Model

9 Discussion

While in most of the presented analysis and findings to the main research question no specific distinction has been made between informal and formal learning situations this aspect is brought up first in the discussion. It is discussed how the combination of formal and informal learning situations can be exploited from a learning perspective and in particular how social media can foster informal learning. Secondly, some approaches to overcome the presented obstacles are presented to the reader. As a third point in the discussion, it is questioned how much activity reconfiguration can take place for the value constellation to fully function and other aspects on value creation are considered. Finally, business opportunities and room for innovation based on the findings of this Master-thesis are assessed.

9.1 Informal Learning & Formal Learning & Social Media

The combination of informal as well as formal learning is highly relevant for corporate learning, as both types of learning reinforce each other. "This is especially true in a formal setting when employees bring real-world experiences to their learning. At the same time informal learning is enhanced when workers understand a company's formal work model." (Leslie & Aring & Brand, 1998, p. 15) Corporate learning is the result of the interaction between formal and informal learning. "The two types of learning complement each other and lead to further improvements and innovations." (Leslie & Aring & Brand, 1998, p. 14)

While the aforementioned sources of value creation were primarily linked to a formal context informal learning is highlighted now. To emphasize the importance of informal learning the following section briefly connects the functionality of social media to this context but limits itself to a few examples. Sources of informal learning are rich, intense and include a lot of collaboration activities, as meetings, customer interaction, cross-training or documentation (Leslie & Kosmahl & Brans, 1998). For instance, Ouweneel et al. (2009, p. 37) found that "colleague support has a significant positive effect on managers' informal learning in the workplace." Social media has therefore the potential to provide the infrastructure for extended sharing, interaction and communication functionalities. The "lack of expert guidance", "reluctant experts" and "opaque knowledge" are identified as obstacles to informal workplace learning by Hicks, et al., (2007, p. 64). Other barriers to informal learning activities include distance to colleagues' work areas, inaccessibility of coworkers and absence of meeting space (Lohman, 2009). Hence, social media can assist to build a more extensive network of individuals, and thereby also connect to motivated experts or achieve proximity to colleagues. However, social media can represent itself a technical barrier. Beyond that, informal learning

networks are passed as an important tool to assess less tangible dimensions of a job (Boud & Middleton, 2003). Social media can potentially play an important role in extending these networks and facilitate interaction and exchange of ideas and knowledge. Especially in certain situations, as organizational change, peer-to-peer learning can play an important role to learn new workflows or linking to other professionals in the industry in order to build new expertise (Reardon, 2004). As a conclusion one can say that the functionalities of social media support some of the conditions necessary to foster an informal learning environment and also potentially remove some of the barriers to an informal learning context. Thus social media can not only be used to enhance formal learning but also informal learning situations. Companies introducing web 2.0 technologies should be aware and assess if social media should be used as an additional communication tool to foster informal learning or used in more formal ways. Hybrids forms of usage are also possible as for instance social media tools can first be introduced for informal usage, and thereby support informal learning. From this informal learning context more formal usages can arise more naturally, e.g. that some functionalities of social media tools are used for projects officially. The quantitative results of this study speak in favor of this hybrid approach as the informal learning context leads to higher degree of acceptance and liking.

9.2 Learning Theories and Value Creation

Subsequently, some considerations are given to the connection of value creation and learning theories, which were presented to the reader in the introduction of this thesis. As mentioned in the beginning, each individual has his or her preferred cognitive style towards learning. Social media can especially assist intuitive information gatherers as these individuals learn better through discussions and reading (Shipley & Johnson & Hashemi, 2009). Thus, for these individuals value can not only be created by the incorporation of social media tools, as wikis or blogs into a learning situation, but also by the identified network related factors of value creation. For instance experts can add expert knowledge, deepness and relevance to a discussion, which is useful and valuable to intuitive information gatherers. Feeling evaluators, which require creativity and idea generation, benefit from the information richness and variety of social media. Offering- related factors of value creation, as for instance the bundling of different social media functionalities or the incorporation of key functionalities as search can be especially valuable for them. In this case, the bundling of different functionalities ensures the variety of different information sources while the search functionality assists feeling evaluators to find information. Additionally, the progression to connectivism becomes more prevalent, and links to possibility to cultivate bigger knowledge networks at lower costs. This

is necessary, as in today's flood of information nobody has the capability anymore to be expert in one field, but a number of individuals become experts in a sub field. With respects to affective and energetic learning, the more positive state of effort expectancy in informal learning situations should be considered in an social media implementation strategy as learners with a slightly positive mood has a tendency towards greater creativity and flexibility in problem solving and more efficient in decision making.

The development of virtual worlds compared to more simple social media systems should be closely monitored, as from an experiential and energetic learning point of view virtual worlds can enhance the learning experience even more as the user is emerged into the virtual environment. However, due to technical considerations the barrier to use virtual worlds is currently higher than for less advanced web 2.0 technology tools. Therefore more business opportunities are probably connected to the latter.

9.3 How to Overcome Obstacles?

Managerial implications based on the presented obstacles to the value creation process are depicted in this part of the thesis. Some approaches and considerations are illustrated however a full analysis would be beyond the scope of this study. Major identified obstacles were wrong cost assumptions, shifts in power structure, inadequate company culture, inadequate incentive systems and structure, inertia of top management and categorization of employees into digital natives. Wrong cost assumptions can be countered by actively calculating the necessary man hours into the schedule of an employee. For instance if a social media tool is introduced into a class in higher-education, teachers connected to it, should be released from some of their tasks to actively familiarize and spend time with the social media tools. These additional personnel costs must be considered in the introduction and implementation of social media into a class. In the implementation process of a social media tool shifts in power structure should also be assessed. Anxieties and concerns of actors in the value constellation must be analyzed and taken into consideration. For instance if discussions are moved to an online platform, instructors, who previously guided the discussion, experience a loss of control. A R&D department in a company or a business development team can experience a decrease in power if the innovation process in a company is opened up. Actors who lose power, should be actively compensated for this loss, so that they are open minded and see value in using social media tools. An inadequate company culture can be top-down or competitive, with individuals who are unwilling to share. As a company culture cannot be easily changed, the introduction of social media tools in such an environment should be

scrutinized. The partial introduction of social media tools in certain departments or social media tools which allow for different layers of interaction and less transparency could be a solution. In order to achieve the desired adoption of and interaction in social media tools, incentive systems must be altered to the new situation. The use of web 2.0 technologies should become relevant for users by providing financial incentives, recognition, feedback and rewards. The role of management can vary. Having a critical attitude can foster value creation; however on the other extreme inertia of management can be prevalent. In the latter case a successful introduction of social media tools requires a strong driving force within the company and is still questionable as management support is seen as a strong prerequisite for success. The categorization of employees into digital natives and digital immigrants can be misleading, as the decisive variable is interest and not age. While it might be true that among the younger generations a higher degree of interest is prevalent, there can exist older employees in a corporation with high interest, who could represent valuable lead users as they might also have leading positions in the company. Thus in the implementation of web 2.0 technology into a company, one should not categorize employees upfront but assess their interest through interviews and surveys for instance.

9.4 Value Considerations

The following section highlights considerations to the creation of value in a network, which are derived from the findings. In order for a social media value constellation to fully function, the value constellation must give value to all actors in the value network. It is not sufficient that value is received by some actors, while others only bear the cost. In the ideal case a win-win situation is existent. For instance in the case of the blog-like platform in the Media Management course, a number of different participants were reluctant to contribute to it, as they could not see the additional value it presented to them. As social media gains value from the interaction of participants as well as the number of participants, it is important that value is generated for all actors in the value constellation. While it is possible to shift tasks, by relieving or enabling actors, some critical tasks cannot be reconfigured. In the before mentioned case, this entails that teachers actively engage and contribute to the blog as they fulfill a critical role within the value network, especially with respect to student's engagement. To emphasize these aspects on can think of an "individual value equation", which as a result must give a positive net value. While the generated value can consists of time savings for instance, the costs can represent to leave established routine behavior. Only if

the value outweighs the costs, an individual has a potential personal interest to use social media, as it provides additional value to him or her.

One critical aspect in moving social media usage from a leisure environment to a formal environment either for informal or formal learning is to transfer the acceptance and engagement from the leisure environment as well. Closely, connected to this point is the question, which value is created for users of social media in a leisure context. Two important aspects apparent in the findings of this thesis are recognition and feedback. Thus, these must be replicated in the formal environment as well.

From the point of view of this thesis value creation is the decisive factor for technology acceptance, as an individual is likely to adopt a certain technology, which gives value to him. Here, the individual value equation is of importance as the cost of that individual to use social media should not outweigh the additional value provided.

9.5 Business Opportunities & Innovation

Business opportunities based on the findings of this Master thesis are discussed in the subsequent part. As social media allows for building and maintaining networks at lower cost as well as connecting to other individuals, new forms of training can emerge. As apparent in the findings, new corporation between teachers or instructors can arise, which can ultimately lead to higher quality and value to the learner. Business opportunities can arise for business schools as they can advertise and promote these corporations to their future students to some extent. Additionally, by means of social media instructors for a specific field can enter new geographical markets which could not be easily served before due to high travel costs for instance. Virtual lectures and training session can bridge the geographical gap. Learners can benefit if practitioners and experts are incorporated into the curriculum for a specific subject. With respect to this point a new market can emerge. Experts and practitioners can rent out their expertise and knowledge in the form of time to universities or corporate training. For instance a practitioner in the field of e-commerce can answer questions in a forum or give virtual lectures in the frame of an Online Marketing course for a contracted amount of hours per month. While this is already existent in a decentralized manner, a platform based online service can arise, in which universities and corporate training departments can state, what they search for, e.g. practitioner in web-design for ten hours a month searched for. Simultaneously, experts and practitioners can voice their offers. As a result a transparent and accessible market for renting out single practitioners and expert hours can be created on a worldwide scale. Simultaneously, the traditional teaching concept is questioned as the one directional flow of

knowledge from instructors to learners is replaced by various two – directional flows from information distributors to information receivers, whereby traditional roles are blurred.

Beyond that as visible in the findings the innovation process within a company can become more transparent and inclusive by means of social media. New networks with new actors can be formed to foster the innovation process in a company. This is in line with Birkinshaw et al. (2007) who describe that especially for discontinuous innovation companies should create new networks not existent before, e.g. idea networks, cross-industry alliances or communities of practices. Two of their identified barriers to finding prospective partners, namely geographical or institutional could be potentially be overcome by means of social media (Bikinshaw et al. 2007).

Furthermore, open-innovation can arise in the form of new behavioral processes. To really assess, which functionalities are valuable to users in a specific learning situation, an on-going process of user co-creation of a web 2.0 technology learning platform or tool should take place. This in itself represents a form of innovation as traditional a learning approach towards a subject was determined by the instructor of a course.

9.6 Theoretical Implications

To assess value creation in corporate and academic learning situations by means of social media, the value creation theory by Normann & Ramírez delivered a structured approach to different sources of value creation. Especially, its network approach and value-in-use idea were suitable in this context. As a result, this theory and the established conceptual framework developed in this thesis can assist to evaluate value creation in similar situations in which the idea of networks and value-in-use are prevalent. However, the value creation theory should not be seen as complete. Therefore, an open-minded approach towards other factors of value creation should be taken. Secondly, any dynamics of value destruction or obstacles should be carefully assessed as these are left out in the theory by Normann & Ramírez.

9.7 Limitations

As this thesis is part of a Master thesis project, it was limited in time and scope. Therefore, the majority of the interviewees were from Sweden and the quantitative part of research, except the online questionnaire, was conducted at three institutions of higher education in Sweden. This approach leads to a limited geographical generalization of the results beyond the Swedish market. Additionally, the results and implications of this thesis are likely to be of greater value to the academic world. This is due to the fact that the mixed method research of this thesis was skewed towards research instruments which gave insights into the academic

perspective. As social media is an evolving and developing technology, attitudes and opinions about it can change. Therefore the time horizon, over which this study can be generalized, is also limited, as also newer technologies might emerge in future, which replace the classical social media systems of today. However, due to the broad approach of this thesis some implications of social media usage are probably also applicable to another context outside the one studied. Simultaneously, a limitation represents the nature of the topic itself, as it is very broad. However, the evolving nature of the specific field and the absence of other studies on this specific topic required this broad approach. Future research can incorporate more specific aspects in the field. This thesis tried to follow a critical approach, however as the author is involved in social media herself, a mere exposure bias might be prevalent.

9.8 Future Research

There are a number of areas derived from this study which provide room for future research. In this study approaches to overcome the obstacle presented in the value creation process have only been briefly discussed. Hence, future research can analyze the conditions which represent obstacles in more detail and find ways to solve them. Beyond that the quantitative analysis linked to the question, if social media based technology acceptance differs in formal learning compared to informal learning represented only a context-specific factor to value creation in this study. This question could be selected to be the main focus of another study and therefore looked upon in a more differentiated way. Another interesting aspect to further analyze in more detail is the question, which value is created with social media usage in an informal leisure context. Inferences for more formal learning situation should be derived. Taking a broader scale, it is also of interest to find out if the trend for the social construction of knowledge is accepted by the generation, which is often named digital natives or if they prefer different ways of learning. This small overview of potential future research areas shows that there are plenty of opportunities for further research, also as the field is developing and new technologies and communication tools are emerging.

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Interviews

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Temiz, S. (2011), (Interactive City), Director of Innovation and Entrepreneurship, ICYou AB Birger Jarlsgatan 53,111 45 Stockholm, Sweden, 24.02.2011.

The following interviewees preferred to stay anonymous:

A.M. (2011), (Freelancer), Brand/ Marketing Strategist, 18.02.2011.

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Focus Group

Focus Group (2011) - The focus group took place on, Wed. 23.02.2011, at Focus Inn, Stockholm. The focus group consisted of students of the Media Management course at SSE/ spring 2011. Participants preferred to stay anonymous.

Appendix

I Overview of Different Social Media

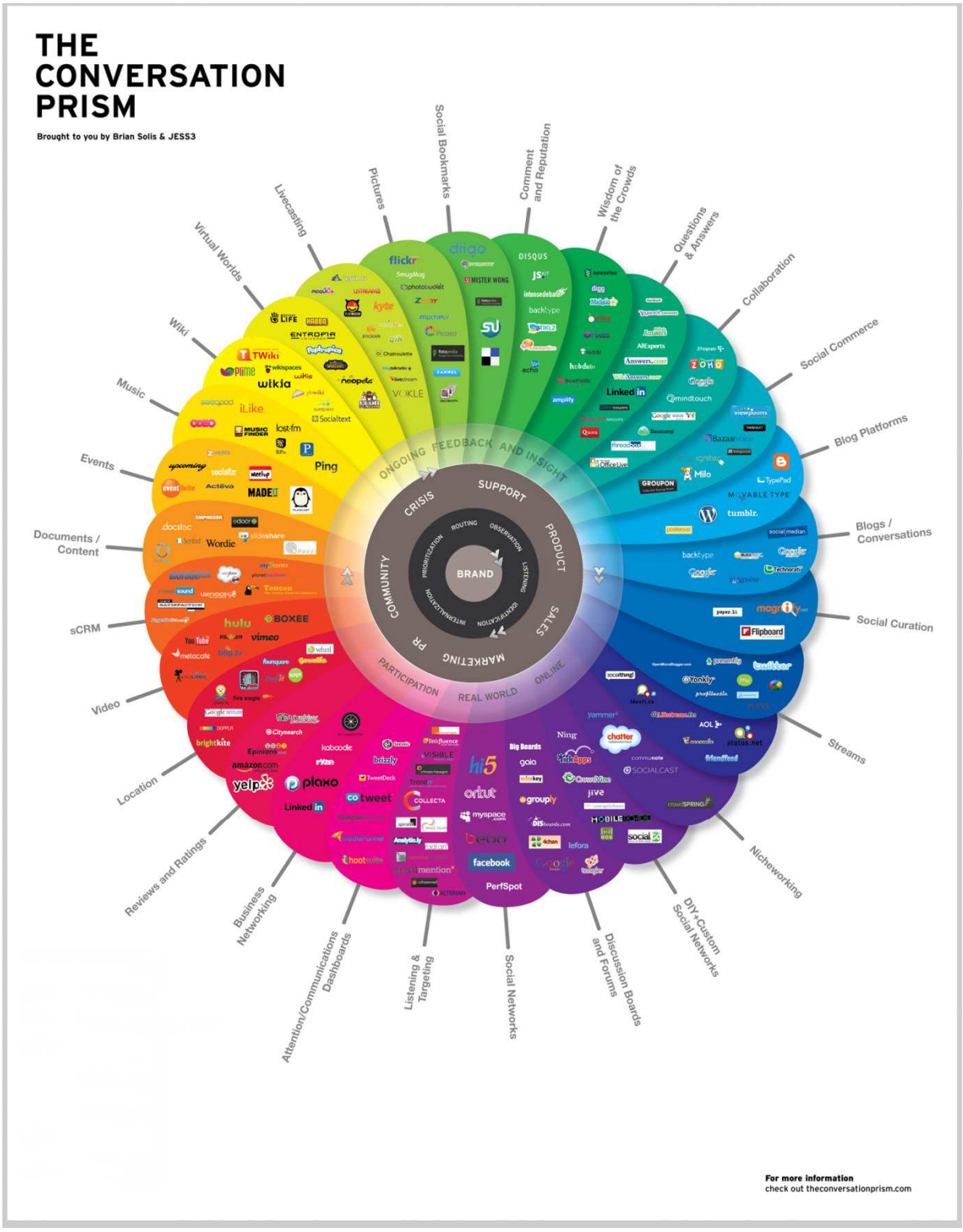

Figure 4 - The Conversation Prism (Solis, B., JESS3, 2011)

II Literature Overview

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
1	Anklam, P.	2009	The Learning Organization	Ten years of network	Social Media and Knowledge Management	A model is presented how social media has enhanced communication and collaboration, social media has added other dimensions: peripheral awareness, crowd sourcing and network maintenance
2	Ashraf, B.	2009	Education + Training	Teaching the Google-eyed YouTube Generation	Characteristics of Today's Students	Benefits, opportunities and risk of using social media, question of quality, enhancement of learner's experience
3	Berg, S.A., Chyung, S. Y.	2008	Journal of Workplace Learning	Factors that influence informal learning in the workplace	Corporate Informal Learning	Factors that influence informal learning in the workplace, types of informal learning activities that people engage in
4	Berger, M.W.	2008	Technology and Culture	Manon of Second Life - Teaching in the Virtual World	Virtual Worlds in Higher Education	Description of using virtual worlds in higher education
5	Bhati, N. et al.	2009	International Journal of Pedagogies and Learning	Barriers and Facilitators to the Adoption of Tools for Online Pedagogy	Online Tools / Barriers and Facilitators	Barriers and Facilitators, staff, perceptions, cost effectiveness, type of support, institutions strategic initiative, importance of environmental support
6	Birdthistle, N.	2006	Journal of European Industrial Training	Training and learning strategies of family business: an Irish case	Informal Learning in Small Corporations	Informal learning in family run businesses
7	Boud, D., Middleton, H.	2003	Journal of Workplace Learning	Learning from others at Work: Communities of Practice and Informal Learning	Informal Learning in Communities	Identification of informal learning communities at workplaces, complexity of the situation, implications
8	Buck, J.	2007	Strategic Communication Management	Managing the Rising Use of Social Networks at Work	Social Networks in Corporation	(Very Short) article on how to handle the rising use of social networks in corporations

Table 5 – Literature Overview

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
9	Campbell, M., Verenikina, I., Herrington, A.	2009	Journal of Workplace Learning	Intersection of trajectories: a newcomer in a community of practice	Informal Learning in Communities	The process of informal learning for a newcomer to a workplace is impacted by a number of interconnected factors: previous social and cultural experience, associations from these to the new community and participation practices in the new community, example of a police officer
10	Case, C., King D., DeSimone, K.	2010	Research in Higher Education Journal	Virtual world: An exploratory study of undergraduate behavior	Virtual Worlds in Higher Education	Applicability of virtual worlds as a learning tool, familiarity and interest in virtual worlds compared to other sides, virtual worlds are in their infancy
11	Cilesiz, S.	2009	American Educational Research Journal	Educational Computer Use in Leisure Contexts: A Phenomenological Study of Adolescents' Experiences at Internet Cafés	Informal Learning in Informal Learning Context	Educational computer use and informal learning of adolescents in Turkey in internet cafés, a context-oriented study, implications of an informal learning environment
12	Conlon, T.J.	2004	Journal of European Industrial Training	A review of informal learning literature, theory and implications for practice in developing global professional competence	Literature Review on Informal Learning	Definitions and problems of informal learning, informal learning theoretical roots, informal learning theoretical research, applications for informal learning in practice, informal learning challenges
13	Custin, R., Barkacs, L.	2010	Journal of Instructional Pedagogies	Developing Sustainable Learning Communities through Blogging	Blog as Tool	blog as tool for boundary spanning across classes, use of the Socratic method in undergraduate educations via blogs, communities of perpetual learners, blog as constructivist learning tool
14	De Witt, A. O.	2010	American Journal of Business Education	Song of The Open Road: Business Students Blog About Tacit Knowledge in Their Internships	Blog as Reflection Tool	community building through interns, nuanced critique of professional blog-writing, tacit knowledge content discussions, reinforce link between tacit knowledge and career success, emphasize the value of tacit knowledge to the success of the organization

Table 5 -Literature Overview - continued

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
15	Dreher, C. et al.	2009	Journal of Information Systems Education	Virtual World as a Context Suited for information Systems Educations: Discussion of Pedagogical Experience and Curriculum Design with Reference to Second Life	Virtual Worlds in Higher Education	Underutilization of virtual worlds in educational contexts, second life as an intrinsically motivating, safe and low cost environment, can be used to learn programming, requirement analysis, systems development, project management and business process modeling
16	Dunlap, J.C., Lowenthal P.R.	2010	Journal of Information Systems Education	Tweeting the Night Away: Using Twitter to Enhance Social Presence	The Use of Twitter in Higher Education	Twitter as a tool to encourage, free-flowing, just-in-time interaction, increase of social presence in online courses, instructional benefits and guidelines
17	Dunn, B.J.	2010	Harvard Business Review	Best Buy's CEO on Learning to Love Social Media	Social Media as a Communication Tool in Corporations	Use of Facebook and Twitter as a communication and information tool for a company's CEO
18	Edwards, L.J., Muir E.J.	2005	Journal of Small Business and Enterprise Development	Promoting entrepreneurship at the University of Glamorgan through formal and informal learning	Formal and Informal Teaching	Combined strategic development of formal and informal teaching and learning.
19	Eijkman, H.	2008	Campus Wide Information Systems	Web 2.0 as a non-foundational network-centric learning space	Role of Informal Learning	Advantages of Web 2.0 as a non institutional network-centric learning environment in higher education
20	Else Ouweneel, A.P. et al.	2009	The Journal of Psychology	How Task Characteristic and Social Support Relate to Managerial Learning: Empirical Evidence From Dutch Home Care	Informal Learning	Impacts of task characteristics and social support from colleagues and supervisors on informal learning. High task control and supervisor support are associated with high levels of informal learning.
21	Eschenbrenner, B. , Nah, F. F.-H., Siau, K.	2008	Journal of Database Management	3-D Virtual Worlds in Education: Applications, Benefits, Issues and Opportunities	Virtual Worlds in Higher Education	current applications, benefits and challenges

Table 5 -Literature Overview - continued

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
22	Folkers, D.A.	2005	Information Resources Management Journal	Competing in the Marketspace: Incorporating Online Education into Higher Education - An Organizational Perspective	Online Tools	External forces that are challenging higher education, introduction and cultural issues
23	Garrick, J.	1998	Human Resource Development Quarterly	Informal Learning in Corporate Workplaces	Corporate Informal Learning	Informal learning of two practioners working at game construction sides, problems, processes, factors affecting it
24	Gerlich, R.N., Browning, L., Westermann, L.	2010	Contemporary Issues in Education Research	The Social Media Affinity Scale: Implications of Education	Usage of Social Media, Implications for Education	Females do not report higher usage of social media, no significantly higher overall affinity
25	Gola, G.	2009	Journal of Workplace Learning	Informal learning of social workers: a method of narrative inquiry	Corporate Informal Learning	Informal learning is often experiential and occurs in a particular environment.
26	Goldman, R.H. et al.	2008	American Journal of Public Health	Using Seminar Blogs to Enhance Student Participation and Learning in Public Health School Classes	Seminar Blog	Evaluation if seminar blogs, enhances students' learning experience in a large graduate level health school class, 60% of students said that it enriched learning experience, opportunities for increased student participation, interactivity, collaboration + learning
27	Harris, A.L., Rea, A.	2010	Journal of Information Systems Education	Web 2.0 and Virtual World Technologies: A Growing Impact on IS Education	Social Media in Education	Overview of different social media channels and how to use them in higher education, advantages and disadvantaged of using social media in education
28	Hathi, S.	2007	Strategic Communication Management	CEOs stand divided on social media	Skepticism of CEOs towards Social Media	(short) article on CEOs sharing different opinion on social media, (also Nissan N-square)
29	Hicks, E. et al.	2007	Journal of Workplace Learning	Canadian accountants: examining workplace learning	Corporate Informal Learning	Formal and informal learning strategies, facilitators and barriers to informal learning, Example of accountants at three different levels,trainess, managers and partners

Table 5 -Literature Overview - continued

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
30	Hornik, S., Thornburg, S.	2010	Issues in Accounting Education	Really Engaging Accounting: Second Life as a Learning Platform	Virtual Worlds and Higher Education	Usage of Second Life to increase student engagement in accounting class, link between student engagement and performance
31	Johnson, N.F.	2009	International Journal of Emerging Technologies and Society	Exchanging Online Narratives for Leisure: A Legitimate Learning Space	Informal Learning	Description of simultaneous learning activities and game playing
32	Kambil, A.	2009	Journal of Business Strategy	Obliterate knowledge management: everyone is a knowledge manager!	Social Media and Knowledge Management	The future of knowledge management: open knowledge, like open innovation, internet tools are better than intranet, we are smarter than me, idea of "knowledge clouds"
33	Kyndt, E., Dochy, F., Nijs, H.	2009	Journal of Workplace Learning	Learning conditions for non-formal and informal workplace learning	Corporate Informal Learning	Analysis of conditions for informal workplace learning: communication, interaction, cooperation and participation, feedback, evaluation, coaching and reflection, information
34	Leslie, B., Aring, M.K., Brand, B.	1998	Economic Development Review	Informal Learning: The New Frontier of Employee & Organizational Development	Corporate Informal Learning	Overview of Informal Learning, prerequisites for informal learning, how does informal learning takes place, comparism between formal and informal learning, implications for educators
35	Li, L., Pitts, J.P.	2010	Journal of Information Systems Education	Does it Really Matter? Using Virtual Office Hours to Enhance Student-Faculty Interaction	Social Media to Increase Teacher - Student Interaction	Use of virtual office hours (Facebook) to increase communication, no differences in usage, increase in perceived quality, students prefer other means of interaction
36	Little, B.	2009	Industrial and Commercial Training	Immersed in learning	Virtual Worlds and Blended Learning	Blend virtual with real world learning activities to enhance the learning experience
37	Lohman, M.C.	2009	Information Technology, Learning, and Performance Journal	A Survey of Factors Influencing the Engagement of Information Technology Professionals in Informal Learning Activities	Corporate Informal Learning	Factors inhibiting IT professionals in informal learning, ways of informal learning, personal characteristics enhancing informal learning

Table 5 -Literature Overview - continued

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
38	Lu, L.-C., Yeh, C.-L.	2008	International Journal of Distance Education Technologies	Collaborative E-Learning Using Semantic Course Blog	Introduction of Course Blog	collaboration increases learning efficiency, collaborative e-learning can bring about more intense communication, blog as a way to achieve this outcome, blog consists of following parts: homepage, announcement, outline, schedule, grade book, discussion, query, collaboration scenarios,
39	Macneil, C.	2001	Journal of Workplace Learning	The supervisor as a facilitator of informal learning in work teams	Role of Supervisors in Informal Learning	Supervisors can improve informal learning within corporate teams, however the must be encouraged and have the possibility to execute their communication skills.
40	Majchrzak. A. et al.	2004	Harvard Business Review	Can Absence Make a Team Grow Stronger?	Collaboration Tools in Distance Team Management	The role of collaboration tools in managing distance teams and their expertise. Dispersed teams can yield higher results than non-dispersed ones.
41	Marsick, V.J.	2009	Journal of Workplace Learning	Towards a unifying framework to support informal learning theory and practice	Characteristics of Informal Learning	Informal and formal learning are often intertwined
42	Mcafee, A.P.	2009	Harvard Business Review	Enterprise 2.0: How a Connected Workforce Innovates	Role of Social Media in Innovation	(Very Short) article on the role of social media in open innovation processes
43	Meister, J.C., Willyerd, K.	2010	People & Strategy	Five Myths and Realities About Using Social Media in Your Company	Myths of Social Media in a Corporate Environment	Social Media is a time waster, Social Media is a fad, if you build, they will come, my employee population is too for social media, Social media is difficult to measure in terms of ROI

Table 5 -Literature Overview - continued

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
44	Minocha, S.	2009a	Education + Training	An empirically-grounded study on the effective use of social software in education	Challenges and Benefits in the Use of Social Software in Education	Benefits to organization (student-retention, image-building, alumni community building), challenges to the organization (public domain vs. VLE, usage, firewalls), benefits to educators (add interactivity, tracking, review of contributions), challenges to the educator (change in teaching, diverse needs of students, workload issues, perceived role of educator , benefits+ challenges to students, recommendations
45	Minocha, S.	2009b	Education + Training	Role of Social Software Tools in Education: A literature Review	Literature Review of Social Software Tools in Education	Paper answers following sub-points: motivating factors for using social software in education, definition of Web 2.0 and social software, who benefits from social software, where is social software used, how is social software used, when is it used, experiences of using social software, risks and opportunities, quality of using social software in education
46	Morris, S.	2008	Industrial and Commercial Training	Virtual team working: making it happen	Virtual Worlds and Teams	Ways in which technology can be used to enhance human interaction instead of replacing it
47	Oikonomidoy, E.	2009	Multicultural Education & Technology Journal	Conceptual collective Online Reflection in Multicultural education classes	Conceptual Collective Online Reflection Using Blogs	Conceptual collective online reflection using blogs
48	Pollitt, D.	2008	Training & Management Development Methods	Learn-while-you-play programme gets IBM recruits up to speed	Corporate Use of Virtual Worlds	Mingling interacting and sharing between employees in different locations, games, simulations and virtual worlds as a tool to give introduction to employees in remote areas
49	Prasolova-Forland, E.	2004	International Journal of Distance Education Technologies	Virtual Spaces as Artifacts: Implications for the Design of Educational CVEs	Virtual Worlds in higher education	Virtual worlds as new spaces for social interaction, sharing and communication, user can impact and create their environments, role of artifacts in virtual worlds and user experience

Table 5 -Literature Overview - continued

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
50	Quish, R.	2010	People & Strategy	Social Media: Creating Richer Relationships in the Workplace	Social Media in Relationship Management	Social Media in relationship management: recruitment relationship marketing, enterprise learning and employee engagement
51	Reardon, R.F.	2004	Journal of Workplace Learning	Informal learning after organizational change	Corporate Informal Learning	Learning after corporate reorganization, informal learning
52	Redford, K.	2007	Training & Coaching Today	Any place, any time anywhere	Informal Learning	(short) article on informal learning, some general thoughts on peer-to-peer learning
53	Robbins, R.W., Butler, B.S.	2009	Journal of Information Systems Education	Selecting a Virtual Worlds Platform for Learning	Virtual Worlds in Higher Education	Establishment of a framework, virtual world's capabilities can be characterized according to their purpose (special/ multiple) and the incorporation of a few or many knowledge resources, this is matched with a framework describing the instructional approach and learning objective, selection advises
54	Shen, J., Eder, L. B.	2009	Journal of Information Systems Education	Intensions to Use Virtual Worlds for Education	Virtual Worlds and Higher Education	Analysis of students' intentions to use SL for education based on Technology Acceptance Model, perceived ease of use/ perceived usefulness, important indicators
55	Sidorko, P. E.	2009	Library Management	Virtually there, almost: educational and informational possibilities in virtual worlds	Virtual Worlds and Libraries	Virtual worlds provide a rich learning and information environment, limitations and possibilities for libraries

Table 5 -Literature Overview - continued

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
56	Song, C.-R.	2008	Online Information Review	Educational Games with Blogs - Collaborating to Motivate Second Language Critical Thinking	Blog as Tool to Train Critical Thinking within the Frame of Language Education	Training of critical thinking by using blogs
57	Svensson, L., Ellström, P.-E., Aberg, C.	2004	Journal of Workplace Learning	Integrating Formal and Informal Learning at Work	Integration of Formal and Informal Learning	Necessity of combining formal and informal learning to achieve desired objectives from and organizational and individual perspective.
58	Terry, C.	2007	Industrial and Commercial Training	Enabling staff to access the knowledge they, when they need it	Corporate Informal Learning	Businesses face challenges in the area of learning and communication, that are not adequately addressed by traditional training.
59	Tuomaite, V. , Zuzevicuitè, V.	2008	Organizaciju Vadyba: Sisteminiai Tyrimai	Validation and Recognition of Non-Formal and Informal Learning	Validation and Recognition of Informal Learning	Process of validation and recognition of nonformal and informal learning outcomes within the European Union.
60	Wagner, C., Ip R. K.F	2009	Journal of Information Systems Education	Action Learning with Second Life - A Pilot Study	Virtual Worlds in Higher Education	Second Life as a platform for action learning, tested in a class of management information systems students, SL gives the user the possibility to plan, implement, observe and draw conclusions
61	Wankel, C.	2009	Organization Management Journal	Management Education Using Social Media	Social Media in Management Education	Digital natives feel comfortable with the use of online collaboration, description of how the following social media types can be used in education: facebook, blogs, YouTube, Twitter, My Space, Virtual Worlds, games, role-plays, simulations and virtual internships
62	Wagner, C.	2008	Journal of Information Systems Education	Learning Experience with Virtual Worlds	Virtual Worlds in Higher Education	Value, opportunities and implementation challenges of virtual worlds
63	Weekes, S.	2009	Training & Coaching Today	Go with the Flow	Informal Learning and Social Media	(Short) article on informal learning and web 2.0 tools, formalize informal learning,

Table 5 -Literature Overview - continued

	Athour(s)	Year	Journal	Title	"Category"	Content/ Key Findings
64	Weyant, L. E., Gardner, C.	2009	Proceedings of the Academy of Educational Leadership	Wikis: An Application in Undergraduate Management Education	Functions of a Course Wiki	Description of experiment: implementation of course Wiki in course, individuals as producers and distributers, adopt to learning styles, wikis as starting point for educators to learn new tools
65	Xiaoqing, Y. , Hongxin Z.	2007	Canadian Social Science	Online Learning Community Building - A Case Study in China	Informal Learning in Communities	Impact of online learning communities on knowledge construction, in particular quality.

Table 5 -Literature Overview - continued

III A Learning Theory Perspective

This table gives further explanation to the self-developed conceptual framework, named VECICoN framework.

Variable	Description
Variety (V)	Variety is contained in the different tasks the user of an e-learning solution performs, in the different types of ways the user performs these tasks, and how many situations or environments the user is present in. Variety affects one's ability to learn from experience. A high level of variety can cater for different cognitive styles.
Engagement / Involvement (E)	Engagement/ Involvement refers to state, when the user is emerged in to the program and experiences it. Also it includes if the user receives feedback on his/ her actions, the level of the graphics and sound of the solution, number of senses used and the level of emotion and arousal as a result of usage. This variable can have a strong link on how we learn.
Collaboration (C)	Collaboration is when two or more participants engage in joint actions or social exchange in regard to a certain topic. Collaboration can be a way to find untapped knowledge, can be a prediction factor for students' success and can improve a workforce's performance.
Intensity (I)	Intensity is how much the e-learning solution requires the user to issue actions. With high intensity the user is allowed little to no time to reflect on potential consequences. Low intensity on the other hand provides the user with the opportunity to reflect before taking action. High intensive solutions allows for more spontaneous and creative thinking to occur.
Co (Co)	The cost ratio describes the potential training budget for one employee in a specific time period. This variable impacts the type of the solution as it can represent limitations.
N (N)	The variable N describes the total number of learner to be trained to achieve a certain learning outcome. It is closely connected to the cost ratio.

Table 6- Explanation of the VECICoN Framework

IV Methodology

Module	Activities	Status
1	Simulated business game	Planned/ Not Implemented
1	Exchange of presentations	Not Planned/ Implemented
2	Creative reporting on cases	Planned/ Not Implemented
2	Female guest lecturers via a virtual class-room	Planned/ Not Implemented
3	Extended information on guest lecturers and possibility to post questions	Planned/ Implemented
3	Present project to other groups on platform	Planned/ Not Implemented
3	Forum to exchange project experience	Planned/ Partially Implemented
3	Virtual coaching sessions	Planned/ Not Implemented

Table 7- Overview of Platform Activities

Platform Functionalities	Status
Reference Section in which alumni advertise the course	Planned/ Not Implemented
Upload/ Download functions (e.g. for articles)	Planned/ Implemented
Event calendar with class schedule	Planned/ Implemented
Membership directory	Planned/ Later Implemented
Mobile access	Planned/ Not Implemented
Q&A section	Planned/ Implemented
News channel for class related information (Twitter)	Planned/ Implemented
News feet with recent news on class related topics	Planned/ Implemented
Top contributor ranking	Not Planned/ Implemented
Search functionality	Not Planned/ Implemented
Password protection	Planned/ Implemented / Abolished

Table 8 - Overview of Platform Functionalities

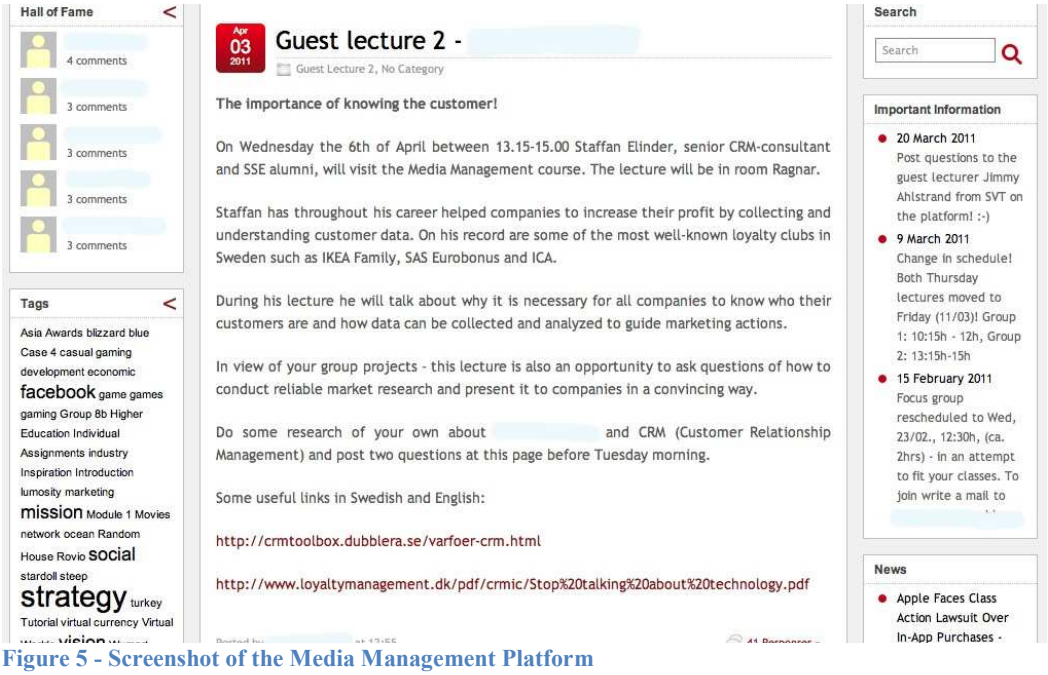

Figure 5 - Screenshot of the Media Management Platform

The Media Management Platform – Extended Information

This section of the appendix provides additional information to the briefly described case study in the methodology part of this thesis with respect to the origin of the idea, the construction stage and choice of the platform and course specific information.

Origin of the Idea

Within the frame of a bigger project about e-learning, the e-learning market has been analyzed and in particular it has been investigated when the more interactive and collaborative form of e-learning 2.0 fits into a learning situation. In particular, e-learning 2.0 emphasizes the social construction of knowledge between different learners. Variety, engagement, collaboration and intensity have been identified as important variables which are decisive for an e-learning 2.0 learning situation. These can ultimately enhance or add to the learning experience. However, academic institutions and companies face a limited training budget and varying number of learners to achieve a specific learning objective, which turn cost and number of learners into important variables as well. Based on this project social media has been found to be a cost efficient solution to add an e-learning 2.0 experience into a learning situation. This initiated the idea to introduce some combination of social media tools into a graduate Media Management class at Stockholm School of Economics to gain practical insights and confirm and complement the theoretical findings.

Choice of Platform

A number of criteria and functionalities have been specified on which different free e-learning platforms and services have been evaluated. In particular, these criteria included the content of the free offering, the constraints to the free offering, scalability of the solution without additional costs, add-ons to the free solution, easiness of use, implement and administer, technical requirements, hosting details, feasibility to integrate with other systems, security and adaptation of the interface to the corporate course design. Easiness to administer and low cost solution were decisive factors in the choice of platform as the administrators had no specific programming skills and were faced with a tight budget. Based on these criteria a self-hosted blog-like platform consisting of WordPress was chosen. The platform was enhanced with plug-ins and delivered the functionalities of a calendar, download-section, RRS-feet with subject-related news, chat function, a Twitter feet with important information and discussion forums, besides providing the possibility of writing normal blog entries. Later, search functionality and a member directory were added and the chat function removed. The choice

allowed for enough flexibility to add functions via plug-ins, while simultaneously was relatively easy to administer and required no programming skills.

The Environment

The Media Management course consists of three modules and deals with media strategy related topic and the media industry in general. With regard to the social media based platform a number of activities were planned for each of the three modules. For a tabular overview of all functionalities of the platform, planned activities and a screenshot of it please see appendix IV, p. 95. Module one of the course is about strategy in general. Simultaneously, within module one a number of additional tools, as second life or keepandshare is presented to the learner, which added to the intensity of it. Module two then introduces several case studies to the learner. Afterwards, learners are confronted with a real life case in projects within the frame of module three. Topic related guest-lectured are integrated into all three of the modules. A number of opportunities arise to integrate a social media based platform to the learners as apparent in the list of activities.

Questionnaire Formal Learning Situations

Thank you for participating in this research study.

This research is part of a learning experience and innovation project at Stockholm School of Economics. Please notice that it is very important that you read the questions/statements carefully and answer them to your best ability. Please respond to all questions and do only give one answer to each question.

Your answers will be completely anonymous.

Think about, when you last experienced the following situation or imagine it:

You used social media in order to complete a task in a formal educational context (university/ work). Social media can comprise peer-to-peer networks (e.g. Facebook), file-sharing services (e.g. YouTube, Slideshare, KeepandShare), blogs, forums, twitter, chat-rooms, wikis and virtual worlds. Social media fosters idea and file sharing, collaboration with peers and engagement in communities. Examples of situations in which you use social media in a formal educational context can be:

You upload a presentation on a file sharing service such as SlideShare or KeepandShare.
You incorporate a YouTube video into a presentation or use it as a source to complete a task.
You consult blogs, forums or wikis for additional information on a certain subject.

1. If I use social media to accomplish a learning activity,...

	Agree Completely ☐☐☐☐☐☐☐ Do not Agree
I will be able to accomplish the task more quickly.	
I will increase my effectiveness on the task.	
I will increase my productivity on the task.	
I will increase the quality of output on the given task.	
I will increase the quantity of output for the same amount of effort.	
I will be perceived as skilled in using social media.	
I will develop skills that are relevant for future tasks/ work.	
I find it easier to use social media instead of other means to accomplish the task	

2. In this formal learning environment...

	Agree Completely ☐☐☐☐☐☐☐ Do not Agree
I believe it is easy to use social media for the required task.	
Social media is easy to use.	
Learning to use new social media channels is easy.	
I'm open-minded to use new media channels.	
People, who are important to me, think I should use social media.	
Supervisors and teachers encourage the use of social media.	
Not engaging is social media decreases my reputation.	

3. In this formal learning environment, I know how to use social media to complete a task...

	Agree Completely ☐☐☐☐☐☐☐ Do not Agree
Without receiving further instruction.	
By asking colleagues to give me hints, where to find information.	
If I'm having a lot of time to find the relevant information.	
Because I have used social media in another context.	
Because I have used social media in a formal learning environment before.	
Because I have the knowledge to use social media.	
Because the technical requirements to use social media are supported by my technical equipment.	

4. In this formal working environment...

	Agree Completely ☐☐☐☐☐☐☐ Do not Agree
I like using social media.	
I'm looking forward to tasks, which require the use of social media.	
Using social media is frustrating for me.	
Once I use social media, I find it hard to stop.	
Social media makes work more interesting.	
Social media makes learning more fun.	
I perceive it as inappropriate to use social media.	

5. To accomplish a learning activity in a formal working environment...

	Agree Completely ☐☐☐☐☐☐☐ Do not Agree
I feel comfortable using social media.	
Information retrieved from social media lack the required quality and deepness.	
The quantity of information which I retrieve from social media is not sufficient.	
I miss important information using social media.	
Social media is not suitable due to the aggregation or incompleteness of information.	
The information retrieved from social media lack impartiality.	

General Information

Age: _____ Nationality: _____ Gender: Male ☐ Female ☐

Please rate your computer skills on a scale from 1 to 7 (1 = bad and 7 = excellent):_____

Questionnaire Informal Learning Situations

Thank you for participating in this research study.

This research is part of a learning experience and innovation project at Stockholm School of Economics. Please notice that it is very important that you read the questions/statements carefully and answer them to your best ability. Please respond to all questions and do only give one answer to each question.

Your answers will be completely anonymous.

Think about, when you last experienced the following situation or imagine it:

You used social media in an informal context (**NOT** for work or school!) in order to find out about a certain subject, learn something new or gather information. Social media can comprise peer-to-peer networks (e.g. Facebook), file-sharing services (e.g. YouTube, Slideshare, KeepandShare), blogs, forums, twitter, chat-rooms, wikis and virtual worlds. Social media fosters idea and file sharing, collaboration with peers and engagement in communities. Examples of situations in which you use social media in an informal learning context can be:

You talk to foreign friends and simultaneously enhance your language skills.
You learn about a subject of interest using social media, e.g. watch YouTube videos. (You are not being driven by an academic institution or work in this situation).
You consult blogs, forums or wikis to solve a computer problem or another issue.
By playing Online -Multi-Player-Role Playing Games you enhance your communication, coordination and team skills.
You learn about the latest, trends in media/ politics/ economics, travel destination or recipes using social media.

1. Social Media...

	Agree Completely						Do not Agree
Learning is not the main purpose I use social media for.	☐	☐	☐	☐	☐	☐	☐
I consciously use social media as a learning tool.	☐	☐	☐	☐	☐	☐	☐
My associations of social media are connected to friends, free time and fun.	☐	☐	☐	☐	☐	☐	☐
I use social media for collaboration, interaction and sharing.	☐	☐	☐	☐	☐	☐	☐
The main purpose why I use social media is not connected to learning.	☐	☐	☐	☐	☐	☐	☐
I will be perceived as skilled in using social media.	☐	☐	☐	☐	☐	☐	☐
I will develop skills that are relevant for future tasks/ work.	☐	☐	☐	☐	☐	☐	☐
I find it easy to use social media to engage in indirect learning.	☐	☐	☐	☐	☐	☐	☐

2. In this informal learning environment...

	Agree Completely						Donot Agree
I believe it is easy to use social media for informal learning activities.	☐	☐	☐	☐	☐	☐	☐
Social media is easy to use.	☐	☐	☐	☐	☐	☐	☐
Learning to use new social media channels is easy.	☐	☐	☐	☐	☐	☐	☐

I'm open-minded to use new media channels.	☐☐☐☐☐☐☐
People, who are important to me, think I should use social media.	☐☐☐☐☐☐☐
Supervisors and teachers encourage the use of social media.	☐☐☐☐☐☐☐
Not engaging in social media decreases my reputation.	☐☐☐☐☐☐☐

3. In this informal learning environment, I know how to use social media for my purposes...

	Agree Completely ☐☐☐☐☐☐☐ Do not Agree
Without receiving further instruction.	
By asking friends to give me hints, where to find information.	
If I'm having a lot of time to find the searched for information.	
Because I have used social media in another context.	
Because I have used social media in a informal learning environment before.	
Because I have the knowledge how to use social media.	
Because the technical requirements to use social media are supported by my technical equipment.	

4. In this informal learning context...

	Agree Completely ☐☐☐☐☐☐☐ Do not Agree
I like using social media.	
I'm looking forward to activities, which involve the use of social media.	
Using social media is frustrating for me.	
Once I use social media, I find it hard to stop.	
Social media makes activities more interesting.	
Social media makes learning more fun.	
I perceive it as inappropriate to use social media.	

5. Engaging in informal learning activities...

	Agree Completely ☐☐☐☐☐☐☐ Do not Agree
I feel comfortable using social media.	
Information retrieved from social media lack the required quality and deepness.	
The quantity of information which I retrieve from social media is not sufficient.	
I miss important information, when I try to find out about a subject.	
Social media is not suitable due to the aggregation or incompleteness of information.	
The information retrieved from social media lack impartiality.	

General Information

Age: _____ Nationality: _____ Gender: Male ☐ Female ☐

Please rate your computer skills on a scale from 1 to 7 (1 = bad and 7 = excellent):_____

Overview of Variables and Statements

Variable	Category	Statement
A_OEP1	Outcome Expectation - Performance	I will be able to accomplish the task more quickly.
A_OEP2	Outcome Expectation - Performance	I will increase my effectiveness on the task.
A_OEP3	Outcome Expectation - Performance	I will increase my productivity on the task.
A_OEP4	Outcome Expectation - Performance	I will increase the quality of output on the given task.
A_OEP5	Outcome Expectation - Performance	I will increase the quantity of output for the same amount of effort.
A_OEI1	Outcome Expectation - Individual	I will be perceived as skilled in using social media.
A_OEI2	Outcome Expectation - Individual	I will develop skills that are relevant for future tasks/ work.
A_OEI3	Outcome Expectation - Individual	I find it easier to use social media instead of other means to accomplish the task.
A_EE1	Effort Expectancy	I believe it is easy to use social media for the required task.
A_EE2	Effort Expectancy	Social media is easy to use.
A_EE3	Effort Expectancy	Learning to use new social media channels is easy.
A_EE4	Effort Expectancy	I'm open-minded to use new media channels.
A_SI1	Social Influence	People, who are important to me, think I should use social media.
A_SI2	Social Influence	Supervisors and teachers encourage the use of social media.
A_SI4	Social Influence	Not engaging is social media decreases my reputation.
A_SE1	Self Efficacy	Without receiving further instruction.
A_SE2	Self Efficacy	By asking colleagues to give me hints, where to find information.
A_SE3	Self Efficacy	If I'm having a lot of time to find the relevant information.
A_FC1	Facilitating Conditions	Because I have used social media in another context.
A_FC2	Facilitating Conditions	Because I have used social media in a formal learning environment before.
A_FC3	Facilitating Conditions	Because I have the knowledge to use social media.
A_FC4	Facilitating Conditions	Because the technical requirements to use social media are supported by my technical equipment.
A_AF1	Affect	I like using social media.
A_AF2	Affect	I'm looking forward to tasks, which require the use of social media.
A_AF3	Affect	Using social media is frustrating for me.
A_AF4	Affect	Once I use social media, I find it hard to stop.
A_AF5	Affect	Social media makes work more interesting.
A_AF6	Affect	Social media makes learning more fun.
A_AF7	Affect	I perceive it as inappropriate to use social media.
A_AX1	Anxiety	I feel comfortable using social media.
A_AX2	Anxiety	Information retrieved from social media lack the required quality and deepness.
A_AX3	Anxiety	The quantity of information which I retrieve from social media is not sufficient.
A_AX4	Anxiety	I miss important information using social media.
A_AX5	Anxiety	Social media is not suitable due to the aggregation or incompleteness of information.
A_AX6	Anxiety	The information retrieved from social media lack impartiality.
A_AGE	Age	Age
A_NAT	Nationality	Nationality
A_GEN	Gender	Gender
A_COM	Computer Skills	Computer Skills
B_OEP1	Outcome Expectation	Learning is not the main purpose I use social media for.
B_OEP2	Outcome Expectation	I consciously use social media as a learning tool.

B_OEP3	Outcome Expectation	My associations of social media are connected to friends, free time and fun.
B_OEP4	Outcome Expectation	I use social media for collaboration, interaction and sharing.
B_OEP5	Outcome Expectation	The main purpose why I use social media is not connected to learning.

Table 9 - Overview of Questionnaire Variables

V Quantitative Findings

Descriptive Statistics – Version A

Descriptive Statistics – Version A

	N	Minimum	Maximum	Mean	Standard Deviation
Speed (A_OEP1)	98	1,00	7,00	3,2245	1,58297
Effectiveness (A_OEP2)	98	1,00	7,00	3,3061	1,46018
Productivity (A_OEP3)	98	1,00	7,00	3,6327	1,44585
Quality (A_OEP4)	98	1,00	7,00	3,6020	1,46252
Quantity/ Effort (A_OEP5)	97	1,00	7,00	3,4845	1,51461
Skilled (A_OEI1)	98	1,00	7,00	3,4490	1,52723
Future Work (A_OEI2)	95	1,00	7,00	3,2526	1,39885
Instead of other means (A_OEI3)	98	1,00	7,00	3,4592	1,65703
Easy to use for the task. (A_EE1)	98	1,00	7,00	3,1224	1,47323
Easy to use (A_EE2)	98	1,00	6,00	2,2755	1,22500
learning new social media (A_EE3)	98	1,00	7,00	2,4592	1,32516
open-minded (A_EE4)	98	1,00	7,00	2,7347	1,60894
People (important) (A_SI1)	98	1,00	7,00	3,6122	1,71490
Supervisors (A_SI2)	98	1,00	7,00	4,3367	1,54616
Reputation (A_SI3)	98	1,00	7,00	4,8061	1,66007
without instructions (A_SE1)	97	1,00	7,00	3,2474	1,41444
asking colleagues (A_SE2)	98	1,00	7,00	3,2041	1,29995
a lot of time (A_SE3)	98	1,00	7,00	3,4286	1,41421
used before (A_FC1)	97	1,00	6,00	2,6495	1,36962
used before in formal environment (A_FC2)	97	1,00	7,00	3,5773	1,62555
Knowledge (A_FC3)	96	1,00	6,00	2,4479	1,28038
technical requirements supported (A_FC4)	96	1,00	7,00	3,0104	1,46894
Like (A_AF1)	98	1,00	7,00	2,8980	1,54979
looking forward to task (A_AF2)	98	1,00	7,00	3,5510	1,68145
Frustrating (A_AF3)	98	2,00	7,00	5,3571	1,54152
hard to stop (A_AF4)	98	1,00	7,00	3,7551	1,75312
makes work more interesting (A_AF5)	97	1,00	7,00	3,5876	1,43434
learning more fun (A_AF6)	98	1,00	7,00	3,1837	1,36485
Inapproriate (A_AF7)	98	1,00	7,00	5,2347	1,61054

feel comfortable (A_AX1)	98	1,00	6,00	2,7347	1,35883
lack quality (A_AX2)	98	1,00	6,00	3,4388	1,45068
quantity not sufficient (A_AX3)	98	1,00	7,00	4,1224	1,46622
miss important information (A_AX4)	98	1,00	7,00	4,0000	1,63720
incompleteness/ aggregation (A_AX5)	97	1,00	7,00	3,9794	1,56111
Impartiality (A_AX6)	98	1,00	7,00	3,5816	1,41366
Age (A_NAT)	98	19	30	22,29	2,479
Computer Skills (A_COM)	96	2	7	5,21	1,165
Valid Values	86				

Table 10 - Descriptive Statistics Version A

Descriptive Statistics – Version B

Descriptive Statistics – Version B

	N	Minimum	Maximum	Mean	Standard Deviation
Skilled (A_OE1)	54	1,00	6,00	3,0185	1,32453
Future Work (A_OEI2)	54	1,00	6,00	2,8519	1,43287
Instead of other means (A_OEI3)	54	1,00	7,00	2,5741	1,49971
Easy to use for the task (A_EE1)	54	1,00	7,00	2,3333	1,35980
Easy to use (A_EE2)	54	1,00	4,00	1,6296	,78419
learning new social media (A_EE3)	54	1,00	5,00	2,0000	,99052
open-minded (A_EE4)	54	1,00	6,00	2,2222	1,29828
People (important) (A_SI1)	53	1,00	7,00	2,8302	1,68404
Supervisors (A_SI2)	54	1,00	7,00	3,7963	1,69772
Reputation (A_SI3)	54	2,00	7,00	4,7407	1,72862
without instructions (A_SE1)	54	1,00	7,00	2,2407	1,24287
asking colleagues (A_SE2)	54	1,00	7,00	3,2593	1,46899
a lot of time (A_SE3)	53	1,00	7,00	3,4340	1,36592
used before (A_FC1)	54	1,00	6,00	2,6111	1,20403
used before in formal environment (A_FC2)	54	1,00	6,00	2,8704	1,28923
Knowledge (A_FC3)	54	1,00	5,00	2,2593	1,06727
technical requirements supported (A_FC4)	54	1,00	7,00	2,8519	1,55900
Like (A_AF1)	54	1,00	5,00	1,8333	1,05955
looking forward to task (A_AF2)	54	1,00	7,00	3,0000	1,61362
Frustrating (A_AF3)	54	1,00	7,00	5,4259	1,64376
hard to stop (A_AF4)	54	1,00	7,00	3,5926	1,80689
makes work more interesting (A_AF5)	53	1,00	7,00	3,5472	1,60007
learning more fun (A_AF6)	54	1,00	6,00	3,1852	1,33281
Inapproriate (A_AF7)	54	1,00	7,00	5,6111	1,54696
feel comfortable (A_AX1)	54	1,00	5,00	2,0741	1,02519
lack quality (A_AX2)	53	1,00	7,00	3,5660	1,51289

quantity not sufficient (A_AX3)	53	1,00	7,00	3,9623	1,73163
miss important information (A_AX4)	53	2,00	7,00	4,2453	1,42648
incompleteness/ aggregation (A_AX5)	53	2,00	7,00	4,3396	1,28517
Impartiality (A_AX6)	53	1,00	7,00	3,6604	1,64016
Age (A_Age)	52	19	29	23,52	2,987
Computer Skills (A_Com)	54	3	7	5,46	1,094
Learning not Purpose (B_OEP1)	54	1,00	7,00	3,1481	1,85724
Learning Tool (B_OEP2)	53	1,00	7,00	3,6604	1,77529
Friends, Free Time, Fun (B_OEP3)	54	1,00	5,00	2,3519	1,37577
collaboration (B_OEP4)	53	1,00	6,00	2,3962	1,19839
not learning (B_OEP5)	54	1,00	7,00	3,3889	1,85733
Valid Values	46				

Table 11 - Descriptive Statistics Version B

Results of the Mann-Whitney Test

	Grouping Variable	N	Medium Rank	Rank -Sum
Skilled (A_OEI1)	1,00	98	81,22	7960,00
	2,00	54	67,93	3668,00
	Total	152		
Future Work (A_OEI2)	1,00	95	79,36	7539,00
	2,00	54	67,33	3636,00
	Total	149		
Instead of other means (A_OEI3)	1,00	98	84,90	8320,00
	2,00	54	61,26	3308,00
	Total	152		
Easy to use for the task (A_EE1)	1,00	98	85,47	8376,00
	2,00	54	60,22	3252,00
	Total	152		
Easy to use (A_EE2)	1,00	98	84,85	8315,00
	2,00	54	61,35	3313,00
	Total	152		
learning new social media (A_EE3)	1,00	98	82,06	8041,50
	2,00	54	66,42	3586,50
	Total	152		
open-minded (A_EE4)	1,00	98	81,08	7945,50
	2,00	54	68,19	3682,50
	Total	152		
People (important) (A_SI1)	1,00	98	83,15	8149,00

	2,00	53	62,77	3327,00
	Total	151		
Supervisors (A_SI2)	1,00	98	81,61	7998,00
	2,00	54	67,22	3630,00
	Total	152		
Reputation (A_SI3)	1,00	98	77,47	7592,00
	2,00	54	74,74	4036,00
	Total	152		
without instructions (A_SE1)	1,00	97	87,71	8507,50
	2,00	54	54,97	2968,50
	Total	151		
asking colleagues (A_SE2)	1,00	98	76,31	7478,50
	2,00	54	76,84	4149,50
	Total	152		
a lot of time (A_SE3)	1,00	98	76,86	7532,00
	2,00	53	74,42	3944,00
	Total	151		
used before (A_FC1)	1,00	97	75,83	7355,50
	2,00	54	76,31	4120,50
	Total	151		
used before in formal	1,00	97	82,68	8020,00
environment (A_FC2)	2,00	54	64,00	3456,00
	Total	151		
Knowledge (A_FC3)	1,00	96	77,25	7416,00
	2,00	54	72,39	3909,00
	Total	150		
technical requirements	1,00	96	77,55	7445,00
supported (A_FC4)	2,00	54	71,85	3880,00
	Total	150		
Like (A_AF1)	1,00	98	87,86	8610,50
	2,00	54	55,88	3017,50
	Total	152		
looking forward to task	1,00	98	81,18	7955,50
(A_AF2)	2,00	54	68,01	3672,50
	Total	152		
Frustrating (A_AF3)	1,00	98	75,37	7386,50
	2,00	54	78,55	4241,50
	Total	152		
hard to stop (A_AF4)	1,00	98	78,18	7661,50
	2,00	54	73,45	3966,50
	Total	152		

makes work more interesting (A_AF5)	1,00	97	76,82	7451,50
	2,00	53	73,08	3873,50
	Total	150		
learning more fun (A_AF6)	1,00	98	77,04	7549,50
	2,00	54	75,53	4078,50
	Total	152		
Inapproriate (A_AF7)	1,00	98	72,51	7105,50
	2,00	54	83,75	4522,50
	Total	152		
feel comfortable (A_AX1)	1,00	98	83,87	8219,50
	2,00	54	63,12	3408,50
	Total	152		
lack quality (A_AX2)	1,00	98	75,91	7439,00
	2,00	53	76,17	4037,00
	Total	151		
quantity not sufficient (A_AX3)	1,00	98	77,91	7635,50
	2,00	53	72,46	3840,50
	Total	151		
miss important information (A_AX4)	1,00	98	73,89	7241,00
	2,00	53	79,91	4235,00
	Total	151		
incompleteness/ aggregation (A_AX5)	1,00	97	72,18	7001,00
	2,00	53	81,58	4324,00
	Total	150		
Impartiality (A_AX6)	1,00	98	75,51	7399,50
	2,00	53	76,92	4076,50
	Total	151		

Table 12 - Results of the Mann Whitney Tests I

Statistics for Test[a]

	Skilled (A_OEI1)	Future Work (A_OEI2)	Instead of other means (A_OEI3)	Easy to use for the task (A_EE1)	Easy to use (A_EE2)
Mann-Whitney-U	2183,000	2151,000	1823,000	1767,000	1828,000
Wilcoxon-W	3668,000	3636,000	3308,000	3252,000	3313,000
Z	-1,822	-1,669	-3,229	-3,468	-3,322

Asymptotic Significance (2-sided)	,068	,095	,001	,001	,001
Exact Significance (2-sided)	,068	,095	,001	,000	,001
Exact Significance (1-sided)	,034	,048	,001	,000	,000
Point - Probability	,000	,000	,000	,000	,000

Table 13 - Results of the Mann-Whitney Test II

Statistics for Test[a]

	learning new social media (A_EE3)	open-minded (A_EE4)	People (important) (A_SI1)	Supervisors (A_SI2)
Mann-Whitney-U	2101,500	2197,500	1896,000	2145,000
Wilcoxon-W	3586,500	3682,500	3327,000	3630,000
Z	-2,197	-1,779	-2,776	-1,962
Asymptotic Significance (2-sided)	,028	,075	,005	,050
Exact Significance (2-sided)	,028	,075	,005	,050
Exact Significance (1-sided)	,014	,038	,003	,025
Point-Probability	,000	,000	,000	,000

Table 12 - Results of the Mann-Whitney Test II - continued

Statistics for Test[a]

	Reputation (A_SI3)	without instructions (A_SE1)	asking colleagues (A_SE2)	a lot of time (A_SE3)	used before (A_FC1)
Mann-Whitney-U	2551,000	1483,500	2627,500	2513,000	2602,500
Wilcoxon-W	4036,000	2968,500	7478,500	3944,000	7355,500
Z	-,373	-4,518	-,073	-,338	-,066
Asymptotic Significance (2-sided)	,710	,000	,942	,736	,948
Exact Significance (2-sided)	,711	,000	,943	,737	,948
Exact Significance (1-sided)	,355	,000	,472	,368	,474

Statistics for Test[a]

	Reputation (A_SI3)	without instructions (A_SE1)	asking colleagues (A_SE2)	a lot of time (A_SE3)	used before (A_FC1)
Mann-Whitney-U	2551,000	1483,500	2627,500	2513,000	2602,500
Wilcoxon-W	4036,000	2968,500	7478,500	3944,000	7355,500
Z	-,373	-4,518	-,073	-,338	-,066
Asymptotic Significance (2-sided)	,710	,000	,942	,736	,948
Exact Significance (2-sided)	,711	,000	,943	,737	,948
Exact Significance (1-sided)	,355	,000	,472	,368	,474
Point-Probability	,001	,000	,001	,001	,001

Table 12 - Results of the Mann-Whitney Test II - continued

Statistics for Test[a]

	used before in formal environment (A_FC2)	Knowledge (A_FC3)	technical requirements supported (A_FC4)	Like (A_AF1)	looking forward to task (A_AF2)
Mann-Whitney-U	1971,000	2424,000	2395,000	1532,500	2187,500
Wilcoxon-W	3456,000	3909,000	3880,000	3017,500	3672,500
Z	-2,562	-,681	-,788	-4,420	-1,799
Asymptotic Significance (2-sided)	,010	,496	,431	,000	,072
Exact Significance (2-sided)	,010	,498	,433	,000	,072
Exact Significance (1-sided)	,005	,249	,216	,000	,036
Point-Probability	,000	,001	,001	,000	,000

Table 12 - Results of the Mann-Whitney Test II - continued

Statistics for Test[a]

	Frustrating (A_AF3)	hard to stop (A_AF4)	makes work more interesting (A_AF5)	learning more fun (A_AF6)	Inapproriate (A_AF7)
Mann-Whitney-U	2535,500	2481,500	2442,500	2593,500	2254,500
Wilcoxon-W	7386,500	3966,500	3873,500	4078,500	7105,500
Z	-,437	-,642	-,514	-,207	-1,553
Asymptotic Significance (2-sided)	,662	,521	,607	,836	,120
Exact Significance (2-sided)	,664	,523	,609	,840	,121
Exact Significance (1-sided)	,332	,261	,305	,419	,060
Point-Probability	,001	,001	,001	,000	,000

Table 12 - Results of the Mann-Whitney Test II - continued

Statistics for Test[a]

	feel comfortable (A_AX1)	lack quality (A_AX2)	quantity not sufficient (A_AX3)	miss important information (A_AX4)
Mann-Whitney-U	1923,500	2588,000	2409,500	2390,000
Wilcoxon-W	3408,500	7439,000	3840,500	7241,000
Z	-2,865	-,036	-,746	-,821
Asymptotic Significance (2-sided)	,004	,971	,456	,412
Exact Significance (2-sided)	,004	,972	,457	,413
Exact Significance (1-sided)	,002	,486	,229	,207
Point-Probability	,000	,001	,001	,001

Table 12 - Results of the Mann-Whitney Test II - continued

Statistics for Test[a]

	incompleteness/ aggregation (A_AX5)	Impartiality (A_AX6)
Mann-Whitney-U	2248,000	2548,500
Wilcoxon-W	7001,000	7399,500
Z	-1,310	-,193
Asymptotic Significance (2-sided)	,190	,847
Exact Significance (2-sided)	,191	,848
Exact Significance (1-sided)	,096	,424
Point-Probability	,000	,001

Table 12 - Results of the Mann-Whitney Test II - continued

a. Groupvariable: Grouping Variable