Innovation of the Learning Experience: The Exploitation of Simple E-Learning Tools

Simone MASOG; Pierre JARMÉUS; Carl SUNDBERG; Per ANDERSSON & Christopher ROSENQVIST
Department of Marketing and Strategy, Stockholm School of Economics
Stockholm, 113-83, Sweden

ABSTRACT
This article answers the question of how simple accessible e-learning tools can be exploited in innovative ways to enrich a learning environment. Social media tools are taken as an example of accessible e-learning tools. This paper, therefore, aims to enhance the understanding of how value can be created using social media in corporate and academic learning situations. Based on a qualitative approach sources of value creation can be classified into network related, offering related and macro-level related ones. 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. In a more explorative way, major obstacles to value creation are identified to be wrong cost assumptions, shifts in power structure, institutional culture, incentive systems and top management.

Keywords: Social Media, Learning, Training, Value Creation, Web 2.0 Technologies, Value Constellation,

1. INTRODUCTION
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.”[1] From an informal leisure context, social media and the functionalities of web 2.0 are increasingly transferred to a business or academic context. In this new environment social media is used for knowledge sharing, cooperation, communication, formal and informal learning.

The term digital natives describe the generation who has grown up with digital technology and who views web 2.0 technologies as a natural extension of their lives. The change in learning needs of this generation and the advancement of digital technology, lead a lot of educational institutions to experiment with social media in class. The aims behind the introduction of social media 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 [2].

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 as a study by Patel [3] has shown. A higher percentage of digital natives compared to other generations thinks that social media helps to learn truly useful thing, that social media is a tool with which you learn more in less time and that social media assists to get better and more work done [3]. 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 [4].

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. 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.

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.

2. METHODOLOGY
A mixed methods research, in which quantitative and qualitative research has been combined, was employed in the data collection process for this article. 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. A prior study, which analyzed when and how e-learning 2.0 fits into training gave some of the learning theoretical background for this article. The framework by Hammersley (1996) described by Bryman & Bell [5] 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 [5]. 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.” [5, p. 650] 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 generalization [5]. The qualitative part of this research study has a supporting role, while there is an emphasis on the qualitative one

Within the overall project a total of 30 semi-structured interviews, with different actors involved in the usage, creation and implementation of social media in learning or training were conducted. Interviewed company representatives had decision power within the respective fields.

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. The case can be defined as a revelatory case, as it gives new insights into how social media can create value in a training situation [5]. 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-feed 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.

While platform usage for some parts of the course was completely voluntarily, a limited number of assignments had some mandatory elements to participate in the platform, for instance to upload presentations on it. In order to assess student’s attitudes of the Media Management platform, a focus group was arranged. A self-selected sample of six students was present during a two hours audio and video recorded focus group.

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. The statements of both questionnaires are based on the Social Cognitive Model of technology acceptance as described by Venkatesh, et al., [6]. The respective variables of interest, which impact technology acceptance are individual and performance outcome expectation, self efficacy, affect and anxiety. Additionally, effort expectancy and social influence were also included as variables in the questionnaire. 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. The questionnaires were targeted at students of higher education, which have naturally grown up with newer technology and social media. For a discussion of reliability and validity of the different research instruments please see the thesis by Masog [7].

3. THEORETICAL FRAMEWORK

The value creation theory by Normann & Ramírez [8] assists to structure, guide and organize the findings and analysis and thereby provides the theoretical framework for this article. The co-productive view of value creation is seen to be suitable in this context.

The co-productive view of value creation contains that different actors are organized in value constellations and value is generated in their interaction [9]. Incorporating social media into a learning situation requires a network of individuals, as administrators, teachers, learners, and other contributors. Value is then created in the simultaneous interplay between all these actors. The value in use concept is prevalent. Social media in itself only presents the infrastructure or empty system to be filled. 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 [9]. Established industry boundaries are challenged [8]. 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. 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.” [8, 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.

Sources of value creation can be categorized into offering, network and macro-level related sources of value creation. The concepts of liquidity and density take an important role in the context of offering related value creation. The concept of liquidity includes that prior established barriers to time and space can be removed with new 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 [8]. Each offering also incorporates and mirrors its respective value constellation network and the network members’ activities. Network related value can therefore be created by means of exploring and building new relationships, which result in optimized types of co-productions. The sheer size of the network can also have an effect on value. 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 [8]. 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. Additionally, new technologies allow for simultaneous activities instead of sequential ones. Macro level related value creation can also be supported by business development, which is necessary due to new offerings, intra-institutional and inter-institutional reconfiguration and new configuration of mental concepts and structures [8].
4. FINDINGS – SOURCES OF VALUE CREATION

Offering Related Value Creation

Liquidity refers to the value creation driven by the removal of barriers of time and space. Social media can enhance the service quality of a course by reducing existing barriers of space. Instructors around the world can collaborate and engage in joint teaching approaches. The barriers of traditional class-room interaction can be extended to an online space. Value can also be created by eliminating the compartmentalization of single courses from a learning perspective [10]. Additionally, the use of social media can internalize the knowledge of individuals, who represent information hubs in a value constellation [11]. Social media can intensify existing human relationships. The distance of geographically dispersed employees can be reduced by instant interaction through social media [12]. The gap between the academic world and practitioners can be narrowed to achieve higher relevance and mutual understanding. Social media can also assist to narrow the distance between different hierarchical levels within a company [13].

The concept of density entails that value is created by an increase in the number of options in a certain time period or space. Social media can increase the amount of interaction in a given time period. For example, microblogs can be applied to communicate questions on a separate screen to a presenter during a presentation [14] or to communicate time sensitive information. Real-life meeting time can be used more efficiently, by transferring less relevant communication to an online environment. Being able to store information in a wiki or forum, can assist a learning community to build and assess an existing knowledge base and avoid the doubling of work, as some information is already present.

Altering different dimensions of an offering can represent a source of value creation. These include the bundling of different social media functionalities into a platform [15], the possibility to integrate or aggregate social media based learning systems with other systems to create a one stop shop for information [12] and the incorporation of key functionalities, as search [15]. A simple, non-cluttered, intuitive interface which guarantees easiness of use of the solution is another value driver.

Network Related Value Creation

Existing learning constellations can be supplemented by the expertise of new actors, which were not available before due to financial, space or time constraints [16]. Additionally, individuals are able to cultivate larger knowledge and learning networks at lower costs by means of social media. 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 [9].

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. […]” [8, p. 59]. In this context, the concept of engaged partiality gains momentum. 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. Beyond that previously sequential executed actions in the value constellation can now carried out simultaneously and thus time is saved.

Macro-Level Value Creation

Social media can provide the infrastructure to foster idea markets and thereby let everyone contribute to new innovations [9]. Thus, social media tools can 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 [17]. Open-innovation creates value in the way that it can reduce costs and simultaneously increases the number of profit generating innovation. The transparency and inclusiveness of the innovation process 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 [15].

Different social media tools are seen as cost efficient way to connect with internal and external experts and facilitate interaction on a global scale [16, 18]. This finding can be connected to the trend to outsource specialized task [19]. This also gives rise to new business development in the form of new corporations and employment models. Organizational learning is often accelerated by dialogue, shared experiences, personal relationships and other forms of informal learning [20]. A trend exists to derive more value from interactions [19]. Companies in developed countries offshore transformational activities as production to a greater extent as well as transactional work. The remaining tasks within developed countries require conversation, interaction, negotiation and collaboration, which are labeled as 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 [19].

Other Sources of Value Creation

In order for a new teaching concept to last, and a type of open innovation to sustain, the right environment must be generated in which social media is used by the respective actors of the value constellation. One prerequisite includes the incentive system of engaging the actors in the desired behavior. This is especially important as value is created in the interaction of actors and thereby the idea of value generation in usage is prevalent. Social media only represents the empty infrastructure. Recognition and feedback are two drivers of individuals engaging in social media. Secondly, individuals must feel that they get something in return, if they start to share. Other elements which spark interaction are a transparent sharing process, top contributor lists, rating systems, real life and virtual rewards, game-like elements, inbuilt competitions and different layers of interaction. Simultaneously, social media can simultaneously render information asymmetries by generating a more transparent environment, in which information are more timely and relevant. Another rather paradoxically value creating side effect in the increasing use of social media represents the abundance of other technologies. The value in the increased application of discussion forums and wikis lies in the decreased use of e-mail technology and thereby avoidance of overload and clutter of inboxes.

Findings from the quantitative research give indications to the 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.

5. CHALLENGES
Challenges in the implementation of social media based learning tools are represented by obstacles to the value creation process. The findings for this paper revealed the following impediments:

Wrong cost assumptions: In analogy to the use of social media for external communication, often wrong cost assumptions in the form of cost-effectiveness are associated with social media in training. Gradually, actors in the value constellation begin to realize later “[…] it is not costly in terms of software but it is costly in terms of man hours - you have to be there.” [21] This leads to inadequate resource allocation, which is detrimental to interaction levels as the value-in use concept is inherent in the technology. The reconfiguration of tasks to counter low interaction levels of specific actors is feasible only to a limited extent, as key actors in a value constellation need to carry out specific tasks. Shifts in power structure: The use of social media can involve the loss of control for one group of actors while others are empowered, e.g. discussions moved to an online space can lead to a loss of control over the content and process for instructors [22]. Additionally, roles of actors from established value constellation are likely to be questioned, which results in inertia and resistance. Institutional Culture: The culture of an organization or academic institution can either be an obstacle or a driver to the adoption of social media and its inherent value creation. A bottom-up culture, which encourages and ties incentives to sharing ideas, thoughts and feedback, is likely to reinforce social media usage [16]. Cultural elements which are opposed to this represent impediments. Incentive Systems: Actors, e.g. instructors, in the new value constellation of using social media in a learning situation are still confronted with non-adjusted incentives systems. On an institutional level innovative learning 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 an instructors’ job, as they receive no credit, reward or recognition for it [18]. Therefore, time is not seriously allocated to the familiarization with social media, unless a personal interest is prevalent [18, 22]. Interest vs. Age: Age is often seen to be a decisive factor in the adoption of social media tools. Therefore, older individuals are often seen as obstacles to the adoption of social media tools. However, other perspectives include that it is about interest. Hence, the individual preferences and interest of an actor in a social media value constellation are reflected in his or her willingness to use social media. Top management: A lack of support from top management represents a barrier for a successful implementation of web 2.0 technologies [11]. A critical attitude and the need for value demonstration can also be passed as fulfilling an important function, namely the one as a value-guard to ensure that there is a clear value proposition. Other obstacles: The value in use concept inherent in social media tools complicates the demonstration of value to potential users in the introduction stage. An empty system in the beginning stage can deter users, as well as a non-intuitive cluttered interface, barriers to access the system as several log-ins, and hidden features to share, interact and communicate with other users. Mandatory use of social media based learning tools can negatively impact the quality of information shared [18]. Framed thinking, and established associations to technical terms as “wiki” or “RSS-feed” can represent a barrier to social media tools and simultaneous need for rebranding them [12, 15]. The outbreak of an established thinking and behavior represents an obstacle. Even if in there is regular usage of social media in a leisure contest, a transfer of usage behavior to another context does not readily take place [18]. In a sharing environment freeriding often represents a challenge. Other negative consequences of social media usage include that previously unspoken hidden problems can surface through another communication channel [21] and the acceleration of interaction by means of social media can lead to a loss of personal contact for instance [18, 22].

6. CONCLUSIONS
Sources of value creation can be categorized into offering related, network related and macro related ones. Offering related sources of value creation include the removal of time and space as for instance new collaborations between geographically dispersed employees or instructors can be facilitated or arise by social media. Human relationships can also be intensified by narrowing the gap between the academic world and practitioners. Additionally, knowledge of individuals, who represent information hubs in a network, can be internalized. Offering related sources of value creation can also consist of an increase in the number of options in a certain time period. Social media can enhance and increase the interaction, which is especially useful for time sensitive information. Altering product dimensions can also represent a value driver. This includes the bundling of different functionalities into a platform, the integration or aggregation of different systems and the incorporation of key functionalities, as for instance search. Network related sources of value creation consist of the cultivation of larger knowledge networks at lower costs and the incorporation of new experts. Activity configuration, as for instance enabling and relieving actors, can also create value. On a macro level, social media can provide the infrastructure to foster idea markets and thereby support organizational changes, as the inclusion of a greater array of individuals into the innovation process. Social media also facilitates the interaction with outsourced experts and accelerates organizational learning. Other value drives represents an incentive systems which encourages interaction. Recognition and feedback are two important elements in this context.

The quantitative findings comprise that an informal learning context can have a positive impact on liking, perceived easiness to use, perceived feeling of comfortableness in usage and perceived easiness to use new social media types. Thus, it might be more value creating to introduce social media as an additional communication tool without mandatory usage to keep
the informal element. Social media usage can then more naturally grow to more formal learning situations, as project work as a second step.

Identified obstacles to the value creation process include wrong cost assumptions as often man-hours are not included in the resource allocation process. Shifts in power structure which are connected to the introduction of social media tools in learning can lead to a loss of power for some actors in the value constellation. This can result in inertia and resistance. Obstacles can also consist of cultural elements which are opposed to a bottom-up culture which encourages sharing and feedback. Other impediments include non-adjusted incentive systems, resistance of top management, the difficulty of value demonstration in the introduction stage and non-intuitive cluttered user interfaces. Also framed thinking and established associations to technical terms as well as mandatory use of the system can represent an impediment.

7. DISCUSSION

Managerial implications based on the presented obstacles to the value creation process are briefly depicted. Wrong cost assumptions can be countered by actively calculating the necessary man hours into the schedule of an employee. In the implementation process of a social media tool shifts in power structure should also be assessed. Actors, who lose power, could be actively compensated for this loss. A counterproductive company culture cannot be easily changed. 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 could be adjusted to the new situation. The use of web 2.0 technologies could become relevant for users by providing financial incentives, recognition, feedback and rewards. A successful introduction of social media tools requires a strong driving force within the company and 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.

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. While it is possible to shift tasks, by relieving or enabling actors, some critical tasks cannot be reconfigured.

As social media allows for building and maintaining networks at lower cost as well as connecting to other individuals, new forms of training and corporations can emerge. Instructors for a specific field can enter new geographical markets which could not be easily served before due to high travel costs for instance. Learners can benefit if practitioners and experts are incorporated into the curriculum for a specific subject. Experts and practitioners can rent out their expertise and knowledge in the form of time to universities or corporate training. 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 their offers. 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. 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 ongoing process of user co-creation of a web 2.0 technology learning platform or tool should take place.

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.” [23, 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.” [23, p. 14] Social media can not only be used to enhance formal learning but also informal learning situations.

8. FUTURE RESEARCH

Based on this study, future research areas comprise the more detailed analysis of obstacles in the value creation process and approaches to solve them. Additionally, the question, if social media based technology acceptance differs in formal learning compared to informal learning represented should be further researched as well as the question which value is created with social media usage in an informal leisure context. Inferences for formal learning situation should be derived.

9. REFERENCES


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