ISSN 2029-7564 (online)
SOCIALINĖS TECHNOLOGIJOS
SOCIAL TECHNOLOGIES
2012, 2(2), p. 263–272

THEORETICAL INSIGHTS FOR DEVELOPING THE CONCEPT OF SOCIAL TECHNOLOGIES

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Abstract

Purpose—*Social technologies continue to grow in popularity in society. Even though the term "social technology" is most commonly used to refer to new social media such as Twitter and Facebook, a redefinition of this concept based on the original definition is needed. Nowadays the concept of "social technology" has several aspects, which destabilize the dominant image of technology. It emphasizes the social sciences and the humanities as shapers of society, reconsiders the strength of "soft technologies." The aim of this paper is to provide rich insight into the concept of social technologies' and to develop the meaning of social technologies in information and knowledge society by analysing new needs and application forms of social technologies.*

Findings—*the research contributed to the understanding of the concept of social technologies. Based on the analysis and synthesis of the scientific literature, a theoretical framework for defining social technologies was developed.*

Research limitations/implications—*the research is limited in a few aspects. For a deeper understanding of social technologies and for developing technological perspectives in social sciences a broader theoretical, as well as empirical, research is necessary. In order to*

ISSN 2029-7564 (online)
https://www.mruni.eu/lt/mokslo_darbai/st/apie_leidini/
https://www.mruni.eu/en/mokslo_darbai/st/apie_leidini/index.php

generalise the research findings, further research should include different dimensions from the perspective of other sciences.

Keywords**:** *social technologies, Web 2.0, knowledge management, knowledge sharing, communication technologies.*

Article Type**:** *conceptual paper.*

1. Introduction

The field of social technology research has been highly active for more than ten years; nevertheless, it is a young research field with regular problems of conceptualization and redefinition. As the term "social technology" has been used without a unified concept since the 19th century, it now has many definitions and descriptions. As social technologies became not only a research field, but a research object as well, not having a clear concept makes it a problem for researchers to understand each other and to keep a clear line of research field development. Social technology as a practical sphere has much potential and it continues to grow rapidly in popularity inside society and requires more and more attention from researchers. Even though the term "social technologies" is most commonly used to refer to new social media such as Twitter and Facebook, a redefinition of this concept, based on the original definition, is needed. Nowadays the concept of "social technology" has several aspects which destabilize the dominant image of technology. It emphasizes the social sciences and the humanities as society shapers, reconsiders the strength of "soft technologies." Since currently the understanding of social technologies varies from social engineering to social software, the aim of this paper is to provide rich insight into the concept of social technologies and to develop the meaning of social technologies in the information and knowledge society by analysing new needs and application forms of social technologies. Based on the analysis and synthesis of the scientific literature, a theoretical framework for defining social technologies was developed.

2. Defining social technologies

The term "social technology" was first used at the University of Chicago by A. W. Small and Ch. R. Henderson around the end of the 19th century (Wikipedia, 2012). Small (1898) spoke of social technology as being the use of knowledge about the facts and laws of social life in order to bring rational social aims. Henderson (1895) used the term "social art" for methods by which improvements to society are and may be introduced; social scientists are the ones who make predictions and social art is what gives directions. According to Li and Bernoff (2011) "social technology" is a term that has historically had two meanings: as a term related to "social engineering," a meaning that was developed in the 19th century (Schotter, 1981; Sugden, 1989; North and Wallis,

1994; Nelson and Sampat, 2001; Nelson, 2002; Pelikan, 2003; Leichteris, 2011), and as a description of "social software," a meaning that began in the early 21st century (Sproull and Faraj, 1997; Johannessen et al., 1999; Andersen, 2011; Duarte, 2011; Leibetseder, 2011; Chui et al, 2012; Derksen et al, 2012).

An interesting understanding of "social technology" is provided by Nelson, who first used the term in work undertaken jointly with Sampat (Nelson and Sampat, 2001). Later Nelson (2008a) makes reference to a cooking recipe and explains why the concept of social technologies is useful with reference to the limitations of a written recipe: "*a recipe characterisation of what needs to be done represses the fact that many economic activities involve multiple actors, and require some kind of a coordinating mechanism to assure that the various aspects of the recipe are performed in the relationships to each other needed to make the recipe work. The standard notion of a recipe is mute about how this is done. [We] propose that it might be useful to call the recipe aspect of an activity its "physical" technology, and the way work is divided and coordinated its 'social' technology*." Material technologies most often require certain specialized practices to keep them working and effective, and those are out-of-reach of non-specialized actors. In this way, they "remind" us to some extent of their origin. While the dissociation of social technologies from social science is not a problem in principle, it has become one (Strathern, 2000): it makes it difficult for the social sciences to account for their "societal impact," and it is societal impact that has become an important factor in legitimizing science in knowledge society. Social technologies in turn are illuminated by the behavioural and social sciences, most of which support both basic and applied research (Nelson, 2008b).

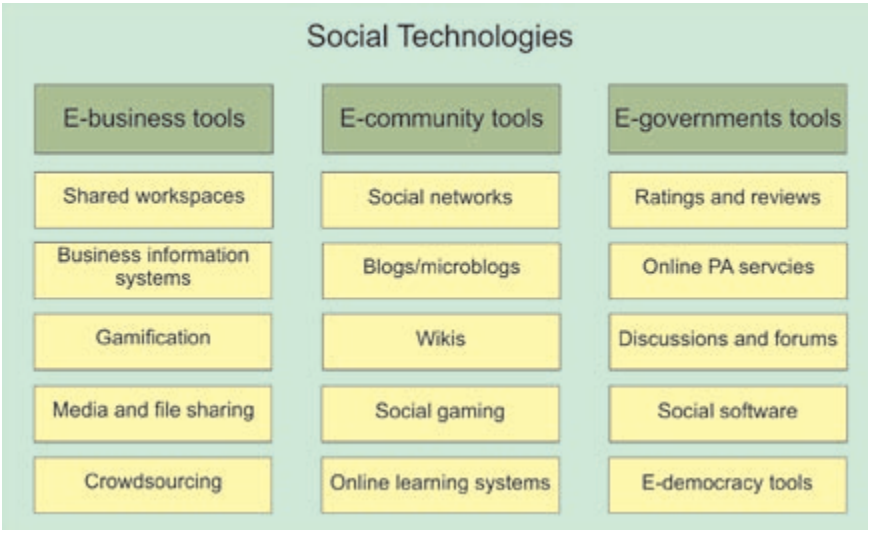
In the modern understanding of social technology, it was referred to any application for various purposes, especially to support a decision making process. Social technologies are defined as any technologies used for social purposes or with a social basis, including social hardware (traditional communication media), social software (computer mediated media), and social media (social networking tools) (Helmer et al, 1966; Alberghini, et al., 2010), so in the sense of *technology*, "social technologies" are instantly comprehensible via some kind of media. Koo (et al, 2011) represents five media types of the new generation: "telephone is representing a traditional medium; video conferencing, email, and instant messenger representing computer-mediated technologies; and blog and social networks representing new social media." Communication technologies such as telephone, voice mail, e-mail, videoconferencing, and instant messaging all help members of virtual teams or groups stay in touch with one another and share information. All this media or types of social technologies can be described in terms of three dimensions (Johannessen et al., 1999):

- *Richness:* the ability to convey verbal and nonverbal cues, and facilitate shared meaning in a timely manner;
- *Interactivity:* the extent to which rapid feedback is allowed;
- *Social presence:* the degree to which virtual team members feel close to one another.

For example, e-mail would be characterized as being relatively low in richness, low in interactivity, and low in social presence. In contrast, real-time applications such a video- and tele-conferencing provide more richness in all three dimensions. Furthermore, both practice and theory suggest that the proper "fit" between technology and a virtual task team should enhance performance. Specifically, different technologies may be better suited for conveying data-, information-knowledge, while others are better suited for convergence-related tasks, such as making decisions. For example, e-mail facilitates well the fine-tuning and re-examination of messages, but richer synchronous technologies (such as video-conferencing) are needed to resolve differing viewpoints among team members and to develop a consensus for decision making (Montoya-Weiss, et al, 2001). Chui et al (2012) defines social technologies as digital technologies used by people to interact socially and together to create, enhance, and exchange content. Social technologies distinguish themselves through the following three characteristics:

- they are enabled by information technology;
- they provide distributed rights to create, add, and/or modify content and communications;
- they enable distributed access to consume content and communications (ibid).

Social technologies include a wide range of applications that can be used by consumers, private or public sector organizations, or as an interaction tool between those subjects. They include many of the technologies that are classified as "social media", "Web 2.0" and "collaboration tools" (see fig. 1).



Source: designed by authors

Figure 1. Social collaboration tools and technologies

In the research of Chui et al (2012) there lies an example of the problem of not having a unified concept of the term of "social technology": in the previous paragraph

there is given a definition of social technologies by Chui et al (2012), yet, later on in their research they give one more definition "Social technologies—the computer code and the services that enable online social interaction." Those two definitions are not completely opposite; nevertheless, this type of paraphrasing still may cause misconception and difficulties in communication for researchers from different fields. Authors follows it with the statement that social technologies "are, essentially, the product of 40 years of technology evolution and the fulfilment of a long-held vision of what computers and digital technology could do." Surveys conducted by analysts such as Forrester demonstrate that social technologies continue to grow in popularity in society; in particular wiki adoption is in the lead, followed by social networks. Nowadays, when people think about social networks (hereinafter—SN), they often refer to Web applications like Facebook or LinkedIn, even though family, friends, classmates, or a network of work colleagues remain the most common SN. This misconception even has a scientific base. Sproull and Faraj (1997) in their research talked about networks (relationship schemes between people) as technology and instantly included information technologies into concept of network. Generally SN refers not to the mediator of communication between people, bet the link between them, relationships that exist between people in a network. The original concept of *social circles* was introduced by Georg Simmel at the beginning of the 20th century in his work *On Individuality and Social Forms*. Since this first theory, the subject has matured to be used, for instance, by modern computer technologies, researchers are doing massive surveys on all kinds of SN. The likelihood of relationships between individuals in a network depends on physical and social distance, and on the opportunity to interact. Building richer, deeper and broader relationships can add social capital to the organisation and the people in it (Nahapiet and Ghoshal, 1998). Its source lies in the structure and content of the actor's social relations, its effects flow from the information, influence and solidarity that it makes available to the actor (Zupan and Kaše, 2007).

Even though in people's minds the term "social technologies" is most commonly used to refer to new social media such as Twitter or Facebook, a redefinition of this concept based on the original definition is needed. Nowadays the concept of "social technology" has several aspects which destabilize the dominant image of technology. It emphasizes the social sciences and the humanities as shapers of society, reconsiders the strength of "soft technologies," and restores focus to human actors in socio-technological assemblages without making them their sovereign masters (Derksen et al, 2012). That means that social technology is increasingly salient as an object of study for the social sciences: sociality is more and more something that people create technically. The instrumental, techno-scientific approach to social life is not the exclusive province of social scientists anymore, but by the same token, it demands all the more attention as an object of study (Mayer, 2009). However, after fundamental exploitation in this area, the current function of social technology is for a social purpose.

3. The Potential of Social Technologies

Social technologies, of course, also have the potential to provide individuals with significant non-economic benefits. As people multiply their abilities to organize themselves through social technologies, there is the possibility to effect positive change in communities and governments as happened with the Arab Spring in 2011. Social technologies can be disruptive to existing power structures (corporate and governmental). According to Norvaišas et al (2011) "[...] a multitude of business, administration, communication and other processes are digitalized thus placing them in a huge network, organizations need a system which would enable analyzing people's opinion and finding the best solution regarding the development of new products and services. In 2005, Gartner predicted (with 80 per cent accuracy) that in 2010, 1000 of the most successful companies would have an Internet community of a certain type connected in their communication field that could be used in marketing, but at the same time stated the same probability of managing half of the aforementioned communities in such a bad way that it would do more harm than profit." Due to those changes, firms today are very complex environments. Information technology has experienced many cycles of innovation, producing always more complex and integrated set of technologies to respond directly to business needs (Koplowitz, 2010). In spite of this, the huge quantity of documents produced daily can create innumerable silos of information. As a consequence, knowledge capture and sharing can be too difficult and ineffective (Alberghini et al., 2010). Organization management could contribute to developing an environment conducive to building and nurturing relationships among organization members. Further, managers could facilitate the creation of organizational capabilities using social technologies such as the ability to locate and share knowledge rapidly and respond to market changes and knowledge held by employees and the network of relationships help dynamically to solve problems and create new knowledge. In Table 1 (see below) we offer an example of how social technologies could add value for managing different areas of social sector organizations.

Table 1. Social technologies can create value across social-sector organizations

Collect information and insights	Gather information
	Crowd source recourses and solutions
Mobilize structures	Fundraise
	Create and expand volunteer network
	Retain support
Execute mission	Educate the public
	Engage supporters
Organization-wide levers (Social as organizational technology)	Improve collaboration and communication
	Rapid organizing

Source: Chui et al (2012)

That shows how deep social technologies have come and how much deeper it is going to come into everyday lives of people. Social technologies allow people to connect at a different scale and create a unified, powerful voice—as consumer groups or entire societies—that can have a significant impact on the ways in which dialogues are shaped and policy is made (Chui et al, 2012). On the other hand, social technology has to be aware that the notion of advancement, improvement and administrating towards a better existence might entail negative aspects. Social technology can entail the "fine tunin,g, the "perfection" of governing. It can lead to a tightening and stressing of power relations. It might involve more liberty; it might cause more domination. Like the notion of empowerment demonstrates, it can impose a regime of self-governing without an emancipatory implementation of equal and consensual power relations; a critical study on social technology has to be aware of such implications, thus, one can only ask to scrutinise intended and unintended consequences and to critically analyse all aspects of social technology (Leibetseder, 2011).

Social networking capabilities are providing vital information in a way that is adaptive and user-driven. However, all these technologies have limitations that can easily lead to misinterpretation. They cannot provide the same richness as face-to-face interaction. Because of delays in transmission and the lack of social and nonverbal cues, communication technologies can interfere with open communication, knowledge sharing, and the ability of teams to identify and resolve misunderstandings. Online collaboration, in its current state, is not a very good substitute for the sort of unscripted, face-to-face interactions that are critical to producing genuine breakthroughs. And complex coordination tasks, like those involved in the design of a new aircraft, still require a dense matrix of "strong ties" among critical contributors, rather than the "weak ties" that are typical of web-based communities (McKinsy Global Survey, 2012). Old generations tend to be sceptical about social technologies, so it is important to implement something very useful, in working terms, and that should become a habit and a necessity at work. For this reason it is necessary to monitor the user engagement and to educate the community for using social technologies (Allberghini, et al, 2010).

Discussion about the potential of "social technologies" will be the occasion to address the following questions for future research, through theoretical and conceptual reflections and empirically-oriented contributions: What is the current scope of technology studies and to what extent can it embrace social technologies? Which social technologies are especially prominent in contemporary culture, and how can we study these?

4. Conclusions

The term of social technology in literature is still wobbling from social engineering to social software. Social technologies can have an influence in shaping social structures, improving communication and process surveillance, etc. That presumes that social

technology might be defined as a phenomenon bringing society to Web 3.0-like level of social integration. The base elements of the concept of social technology are: digital nature of medium used for communication, interactivity and knowledge distribution.

Currently the term of social technology is lacking inter-disciplinarity. Even though researchers more often talk about social technology being the object of social sciences rather than any other, but it is just as important as to humanities or biomedicine sciences. In order for this to be true, scientists from all branches of science should be involved in drawing a comprehensive concept of social technologies.

The potential of social technologies for business enterprises is set on process efficiency in recourse management and marketing, but those technologies have great potential for non-economic benefits as well. Used as collaboration platforms they may contribute to more effective decision making, liberation of creativity, and crowd sourcing for building knowledge. Accordingly those improvements might contribute to more involved communities and eventually more effective governance. For this reason, the field of social technology requires deeper research from an academic and practical angle, in the profit and non-profit sectors, etc.

Literature

Alberghini, E., et al. (2010). "Implementing knowledge management through IT opportunities: definition of a theoretical model based on tools and processes classification." *The Proceedings of the 2nd European Conference on Intellectual Capital*, Lisbon, Portugal, 29–30 March, 2010, pp. 22–33.

Andersen, K. N. (2011). Social Technologies and Health Care: Public Sector Receding, Patients at the Steering Wheel? Conference proceedings "Social Technologies '11: ICT for Social transformations," 17–18 November, 2011, Vilnius-Net.

Chui, M. et al, (2012). *The Social Economy: Unlocking Value and Productivity Through Social Technologies*. McKinsey Global Institute Report.

Derksen, M. et al. (2012). "Social technologies: Cross-disciplinary reflections on technologies in and from the social sciences." *Theory Psychology*, vol. 22, no. 2, p. 139–147.

Duarte, A. T. (2011). Privacy and Health System Solution Case, Conference proceedings "Social Technologies '11: ICT for Social transformations." 17–18 November, 2011, Vilnius-Net.

Helmer, O. et al. (1966). *Social Technology*. New York, NY: Basic Books

Henderson, C. R. (1895). "Review." *Journal of Political Economy*. 3(2), p. 236–238.

Johannessen, J.A., et al. (1999). "Aspects of innovation theory based on knowledge-management." *International Journal of Information Management*, Vol. 19, Iss. 2, p. 121–139.

Koo, Ch., et al. (2011). "Examination of how social aspects moderate the relationship between task characteristics and usage of social communication technologies (SCTs) in organizations." *International Journal of Information Management*, Vol. 31, p. 445–459.

Li, Ch. and Bernoff, J. (2012). *Groundswell, Expanded and Revised Edition: Winning in a World Transformed by Social Technologies*. Harvard Business School Press Books, p. 352.

Leibetseder, B. (2011). "A Critical Review on the Concept of Social Technology." *Social Technologies*, 1(1), p 7–24.

Leichteris, R. (2011). „Mokslo ir technologijų parkai socialinių technologijų kontekste." *Social Technologies*, 1(1), p 139–150.

Mayer, K. (2009). Who produces social technologies? [accessed 16-09-2012]. <http://socialtechnology.wordpress.com/2009/10/23/who-produces-social-technologies/>.

McKinsy Global Survey. (2012). McKinsey Global Survey results. [accessed 16-09-2012]. <http://www.mckinseyquarterly.com/Business_Technology/ BT_Strategy/Minding_your_digital_business_McKinsey_Global_Survey_results_2975>.

Montoya-Weiss, M., et al. (2001). "Getting It Together: Temporal Coordination and Conflict Management in Global Virtual Teams." *Academy of Management Journal,* 44(6), 1251–1262.

Nahapiet, J., Ghoshal, S. (1998). "Social capital, intellectual capital, and the organizational advantage." *Academy of Management*. Vol. 23 No. 2, pp. 242–66.

Nelson, R. R. (2002). "Bringing institutions into evolutionary growth theory." *Journal of Evolutionary Economics*. Vol. 12, p. 17–28.

Nelson, R. R. (2008a). "What Enables Rapid Economic Progress: What Are the Needed Institutions?" *Research Policy*, Volume 37, Issue 1, p. 1–11.

Nelson, R. R. (2008b). "Factors affecting the power of technological paradigms." *Industrial and Corporate Change*, Volume 17, Number 3, p. 485–497.

Nelson, R. R.; Sampat, B. N. (2001). "Making Sense of Institutions as a Factor Shaping Economic Performance." *Journal of Economic Behavior and Organization*. Iss. 44, p. 31–54.

North, D.; Wallis, J. (1994). "Integrating institutional change and technological change in economic history: a transaction cost approach." *Journal of Institutional and Theoretical Economics*, Vol. 150, p. 609–624.

Norvaišas, S. et al. (2011). Įtinklintos *vadybos studijos*. Vilnius: Mykolo Romerio universiteto Leidybos centras.

Pelikan, P. (2003). "Bringing institutions into evolutionary economics: another view with links to changes in physical and social technologies." *Journal of Evolutionary Economy*. Vol. 13, p. 237–258.

Schotter, A. (1981). *The economic theory of social institutions*. Cambridge: Cambridge University Press.

Small, A. W. (1898). "Seminar Notes: The Methodology of the Social Problem. Division I. The Sources and Uses of Material." *The American Journal of Sociology*. 4(1), p. 113–144.

Sproull, L.; Faraj, S. (1997). *Atheism, Sex, and Databases: the Net as a Social Technology, in Culture of the Internet*. Mahwah: Lawrence Erlbaum Associates, Inc.

Strathern, M. (2000). *Audit Cultures*. London and New York: Routledge.

Sugden, R. (1989). "Spontaneous order." *Journal of Economic Perspectives,* Vol. 3: p. 85–97.

Wikipedia (Wikipedia, the free Encyclopedia). (2012). Social technology. [accessed 16-09-2012]. < en.wikipedia.org/wiki/Social_technology#cite_note-1>.

Zupan, N.; Kaše, R., (2007). "The role of HR actors in knowledge networks." *International Journal of Manpower*. Vol. 28 No. 3/4, pp. 243–259.

KONCEPCIJOS „SOCIALINĖS TECHNOLOGIJOS“ VYSTYMO TEORINĖS ĮŽVALGOS

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Santrauka.

Tikslas. *Socialinių technologijų populiarumas visuomenėje vis auga. Nors terminas „socialinės technologijos“dažniausiai yra vartojamas siejant jį su naujomis socialinėmis medijomis, tokiomis kaip „Twitter“ ir „Facebook“, šios koncepcijos performavimas remiantis pradine samprata yra būtinas. Šiandien „socialinių technologijų“ sąvoka turi keletą aspektų, kurie destabilizuoja dominuojantį technologijų vaidmenį. Tai pabrėžia socialinius ir humanitarinius mokslus kaip visuomenės formuotojus, iš naujo įvertina „minkštųjų technologijų“ reikšmingumą. Šiame straipsnyje pristatomo tyrimo tikslas yra iš įvairių kampų pažvelgti į socialinių technologijų koncepciją ir jų reikšmę informacijos ir žinių visuomenėje analizuojant naujus poreikius ir socialinių technologijų taikymo formas.*

Rezultatai. *Tyrimas prisideda prie socialinių technologijų koncepcijos suvokimo. Remiantis mokslinės literatūros analize ir sinteze sukurta teorinė sąvokos „socialinė technologija“ struktūra.*

Tyrimo ribotumas. *Tyrimą riboja keli aspektai. Gilesniam socialinių technologijų supratimui ir technologinių perspektyvų vystymui socialiniuose moksluose yra reikalinga platesnė teorinė ir empirinė studija. Siekiant bendriau pritaikomų tyrimo rezultatų, tolesniuose tyrimuose būtina įtraukti įvairias dimensijas iš kitų mokslų šakų.*

Straipsnio tipas: *koncepcijos pristatymas.*

Raktiniai žodžiai: *socialinės technologijos, Web 2.0, žinių vadyba, dalinimasis žiniomis, bendravimo technologijos.*