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Web 2.0 in Healthcare: The Rise of a Fashion Wave? Examining the Discourse in the Literature

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Web 2.0 in Healthcare: The Rise of a Fashion Wave? Examining the Discourse in the Literature

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ABSTRACT

Electronic Health (eHealth) increasingly refers to possibilities that arise from the so-called innovation “Web 2.0”. According to management fashion theory, many innovations can be classified as a fashion and only offer minor benefits for organizations. Such fashions have a diffusion and a discourse lifecycle. In this study we shed light on the discourse on Web 2.0 in healthcare. In order to explore how the discourse has emerged, we examine a selection of both the scholarly IS research and practitioner-oriented literature. Our findings show that there is almost no academic discourse on Web 2.0 in healthcare in the IS research literature. In contrast, we find an ongoing discourse on the subject with a wave-like shape in the domain-specific and practitioner-oriented literature. Our findings also provide some arguments for the debate on the link between scholarly IS literature and their practical relevance.

Keywords

Literature review, management fashion theory, Web 2.0, healthcare.

INTRODUCTION

The use of new information technology (IT) to support business and care processes in healthcare is called eHealthcare (Denz, 2002) or eHealth (Eysenbach, 2001). eHealth – the improvement of healthcare by using (Internet-based) IT – primarily aims to support the transfer of information between patients, hospitals, and other health institutions (Egli, 2002). Information between these stakeholders is nowadays mostly transmitted by using the Internet. The improved availability of Web technologies, the increasing maturity of technical infrastructure, and changing user behaviors promote the development of so-called “Web 2.0” services (Berge and Büsching, 2007). The term “Web 2.0” has been named a hype since its first mentioning (Haas, Walsh and Kilian, 2007), whereas others have called it an innovation (Wang, 2009).

According to Abrahamson (1996), some types of innovations can be classified as a “fashion” that has little value for organizations. This can also be described as a self-reinforcing cycle: the more organizations adapt innovations, the stronger is the common belief in its value (Wang, 2010). The result is an increasing spread of an innovation in organizations. In this way, fashion and adaptation build up on each other. The terms “management fashion” or “fad management” are often applied in order to describe these phenomena, but this does imply that they are marginal or trivial (Baskerville and Myers, 2009).

In general, management fashions have two lifecycles (Abrahamson and Fairchild, 1999). The diffusion lifecycle describes the implementation of a fashion in or through organizations. The discourse lifecycle describes the spread of the respective fashion or innovation in form of publications. In this context, researchers have studied how much the IS field is characterized by such fashions (Swanson and Ramiller, 2004, Baskerville and Myers, 2009). Health professionals, patient organizations, insurers, and the pharmaceutical industry are all using the Internet as a medium for communicating health information (Baker, Rideout, Gertler, and Raube, 2005). In this context, an emergence and broad adoption of Web 2.0 technologies and approaches can be observed (Eysenbach, 2008). From our perspective, this use of Web 2.0 technologies, with their presumed ease of use and expectation of results, indicates a fashion.

To investigate this phenomenon, we focus on the discourse lifecycle in this paper. We explore the emergence of Web 2.0 technologies in the context of healthcare as a subject in the IS research literature as well as domain-specific/practitioner-oriented literature. The aim of this paper is to provide an answer to the following research question: “Is the use of Web 2.0

technologies in the context of healthcare characterized by a fashion wave?" We are especially interested in investigating how Web 2.0 technologies in the context of healthcare are embedded in the research and practitioner-oriented literature.

The theoretical and practical contributions of this paper are as follows. First, we show that the practitioner discourse on Web 2.0 in the context of healthcare has the characteristics of a beginning fashion wave. Second, we contribute to the debate on the relationship between IS research and practice by examining a selection of the scholarly IS research and practitioner-oriented literature. We show that the corresponding fashion wave is absent from major IS research outlets. We suggest that researchers should engage in a dialogue with practitioners and participate on the discourse on Web 2.0.

The remainder of the paper is structured as follows. In the next section we present the principles of management fashion theory. Moreover, we introduce and discuss the theoretical background of eHealth and Web 2.0. Then, we introduce our study. After describing the design and methodology, we illustrate and discuss our findings and results. Finally, we summarize our findings and give an outlook on further research.

THEORY AND BACKGROUND

Management Fashion Theory

Management Fashions

Management research and practice are characterized by fashions (Baskerville and Myers, 2009). In a series of articles, Abrahamson developed his theory of management fashion (Abrahamson, 1991, 1996; Abrahamson and Fairchild, 1999). Abrahamson (1996) defines a management fashion as "a relatively transitory collective belief, disseminated by management fashion setters, that a management technique leads rational management progress". Management fashion theory in general is based on diffusion theory (Rogers, 1995). Following management fashion theory, many innovations can be classified as a fashion with a very low value for organizations (Abrahamson, 1996). Wang (2010) describes this phenomenon as a self-reinforcing cycle: fashion and adaptation build on each other. The more organizations adapt an innovation, the higher are perceived benefits and values, and the faster the innovation spreads over organizations. Abrahamson (1996) also characterizes so-called "management fashion setters", such as consulting firms, management gurus, business magazines, and business schools. They constantly compete on defining the leading management technique. In this context, Miller and Hartwick (2002) focused on "management fads" that become popular because of certain properties that contribute at the same time to their downfall. The characterization of an innovation as a management fashion or fad does not imply that these phenomena are marginal or trivial (Baskerville and Myers, 2009): the costs of implementation and expulsion of fashions and fads to support technical efficient innovations may be lower than the costs of continued use of an innovation (Abrahamson, 1996).

IT / IS Fashion

The basic principles of management fashion can be transferred to the IS field; this is described as an "information system fashion" (Baskerville and Myers, 2009) or "information technology fashion" (Wang, 2010). Two groups of IS/IT fashion setters can be distinguished (Wang, 2010). On the one side, there are developers of IT innovations (researchers, practitioners, or consulting firms), which are in mutual competition. On the other side, there are managers of companies who are looking for the next "big thing" in order to give their organizations a competitive advantage (Wang, 2010). Due to the growing interest of managers on the one hand and the increasing number of publications by fashion setters on the other hand, a collective belief arises in the next big innovation – the next "IT fashion". The resulting hype about the IT fashion is followed by the point where expectations of supposed IT innovations cannot be met. This leads to a phase of disillusionment. This kind of "hype cycle" demonstrates the fashion phenomenon in IT (Linden and Fenn, 2003).

Lifecycles and Waves

Management and IT fashions have two life cycles: the discourse and the diffusion lifecycle (Abrahamson and Fairchild, 1999). The discourse lifecycle describes the spread of the respective fashion or innovation in the form of publications (e. g., articles, books, speeches, or success stories). By contrast, the diffusion lifecycle describes the implementation of a fashion in or through organizations. Both lifecycles have a wave-like shape. Table 1 describes the rise and burst of such a fashion wave.

| Term | Definition |
|----------------------|---|
| Problem discourse | A fashion upswing discourse proposing theories about the problem source motivating the fashion. |
| Solution discourse | A fashion upswing discourse describing the fashion with claims that it is all powerful in scope and impact. |
| Bandwagon discourse | A fashion upswing discourse relating stories about firms successfully adopting the fashion. |
| Debunking discourse | A fashion downswing discourse advocating a complete rejection of the fashion. |
| Surfing discourse | A fashion downswing discourse advocating a transition from one fashion to the next. |
| Sustaining discourse | A fashion downswing discourse advocating the fashion despite falling interest. |

Table 1. Fashion Discourses (cf. Baskerville and Myers, 2009; Abrahamson and Fairchild, 1999)

Baskerville and Myers (2009) examined four IS fashions (office automation, computer-aided software engineering, business process engineering and e-commerce) in terms of their discourse lifecycle. They showed that the IS researcher and practitioner literatures are characterized by similar fashion waves. The upswings of IS fashion waves are very fast and run over a period of three to five years. After the peak is reached, the wave breaks and falls down very quickly.

eHealth and Web 2.0

The use of IT in healthcare is often understood as a means for improving workflows in medical and non-medical healthcare areas through increasing the efficiency of administration, logistics, and therapy processes (Bauer, 2000; Della Mea, 2001; Eysenbach, 2001; Himmelstein, Wright and Woolhandler, 2010). “eHealthcare” or “E-Healthcare” is the abbreviation of “electronic healthcare” and is also called “E-Health” and “eHealth” (VIG, 2005; Eysenbach, 2001). Depending on the author or audience, the terms are differently used and defined. In this paper we use the term “eHealth” in analogy to other “e-words” such as e-commerce, e-business, or e-solutions. One recent trend is the connection of healthcare, eHealth, and Web 2.0 (Ferguson, 2002; Van De Belt, Engelen, Berben and Schoonhoven, 2010). As a result of this development, a variety of Web 2.0 services has emerged. Web 2.0 enables the transition from pure presentation of information to the point of communication via the Internet. Content cannot only be read, heard or observed, it can be actively changed and designed by the user (McAfee, 2006; O’Reilly, 2005). The use of Web 2.0 technologies in the medical context or as a part of healthcare is defined as “web-based services for health care consumers, caregivers, patients, health professionals, and biomedical researchers, that use Web 2.0 technologies and/or semantic web and virtual reality approaches to enable and facilitate specifically 1) social networking, 2) participation, 3) apomediation, 4) openness, and 5) collaboration, within and between these user groups” (Eysenbach, 2008).

In this context we can observe an emergence and broad adoption of Web 2.0 technologies and approaches (Seeman, 2008). It is often stated that recent advances in Internet technologies, particularly Web 2.0, have transformed the pattern of health-related communications (Eysenbach, 2008). Because of their ease of use and rapidity of deployment, they offer the opportunity for powerful information sharing and ease of collaboration (Boulos, 2006). From our perspective, this “new way of participatory communication and interaction”, with its presumed ease of use and expectation of results, shows all characteristics of an IS fashion. This is also indicated by the increasing use of buzz-words such as “Medicine 2.0” or “Health 2.0” (Van De Belt et al., 2010).

WEB 2.0 AS AN IS FASHION IN HEALTHCARE

Research Design

In order to identify Web 2.0 technologies in healthcare as a fashion, we explore its emergence as a subject in the IS research and practitioner literatures according to established guidelines and processes (Webster and Watson, 2002; Brocke, Simons, Niehaves, Riemer, Plattfaut and Cleven, 2009). A proxy measure indicating a fashion would be the number of published articles that refer to it. This measure of the fashion discourse indicates the degree to which selected keywords dominate the literature in the domain for a specific time (Baskerville and Myers, 2009). In order to answer the research question we examine the relevant work and knowledge. Consequently, we performed a review of academic and domain-

specific/practitioner-oriented literatures on eHealth and Web 2.0 in order to find out to what extent the topic corresponds to a fashion.

Selection of Literature

For the scholarly literature, we inspected the leading IS basket journals in order to perform a structured and comprehensive state-of-the-art analysis of the work on Web 2.0 in healthcare in IS research. We choose from the “Senior Scholars’ Basket of Journals” from one of the largest organizations in the international arena, the Association for Information Systems (AIS, 2007). In addition to the eight basket-journals we choose the following two journals from the German-speaking countries to meet the literature of the Wirtschaftsinformatik community – the IS discipline in German-speaking countries. The “Wirtschaftsinformatik” (or WI) in Austria, Germany, and Switzerland constitutes the largest IT researcher community outside North America that maintains its own approach (Frank, Schauer and Wigand, 2008):

- “Die Wirtschaftsinformatik” as the oldest and most respected German journal.
- “HMD Praxis der Wirtschaftsinformatik” as one of the most widely published IS magazines for German speaking countries.

Scientific conferences and conventions are also important platforms to publish and discuss the latest research results. Therefore we included the proceedings of two international and two German conferences into the analysis:

- the annual “International Conference on Information Systems” (ICIS) as the premier international conference of the AIS,
- the annual “European Conference on Information Systems” (ECIS) as the premier Region 2 (Europe, Middle East, Africa) conference of the AIS,
- the biennial “International Conference on Wirtschaftsinformatik” (WI) as an AIS-affiliated and the largest conference in German-speaking countries, and
- the biennial “Multi-Konferenz Wirtschaftsinformatik” (MKWI, the multi-conference on information systems) as a traditional meeting place of the German-speaking community.

In addition to the IS research literature we choose three journals from the healthcare domain that focus on the use of technology and communication in healthcare specifically or from a practitioner perspective:

- “International Journal of Healthcare Technology Management” (IJHTM),
- “Journal of Medical Internet Research” (JMIR), and
- “Journal of Healthcare Communication” (JHC).

Due to the frequent lack of a formal peer review process, we do not include books in the selection. We examined in each case the journal, conference, or conference proceedings between 2006 and the end of September 2010.

Selection of Keywords and Articles

In order to achieve extensive search results we used a pre-selected list of keywords. The selection of papers requires language-specific keywords. The basic keyword class consists of terms of Web 2.0 technologies, which are the same in the English and the German literature: “web 2.0”, “social media”, “blog”, “wiki”, “forum”, “user generated content”, “community”, “ehealth” and “e-health”. We combined these keywords with the language-specific term for “health”.

After selecting the relevant sources and keywords, two researchers (A1 and A2) searched independently from each other for the keywords and combinations. We used accessible databases such as EBSCO or AIS Electronic Library for the journals and conferences, selecting the relevant dates and the keywords and combinations as search criteria. After scrutinizing the results for relevance, each researcher made a decision for or against the inclusion in their result list E1 (A1) and E2 (A2). Afterwards, these two lists were combined to the list E3, which contained all articles from E1 and E2. The next step was to remove duplicates, commentaries, or (guest) editorials from E3. This resulted in list E4, which consists of 155 articles. Next, the two researchers checked in detail title, abstract, and keywords for each article. Both read independently of each other the abstracts of the articles and marked them if the article was not related to the research question. The results were the lists E5 (A1) and E6 (A2). Afterwards, the two lists were consolidated. This consolidation included an in-depth discussion on the marked articles, followed by removing those articles from the list. The result was the list E7, which consists of 45 articles.

After reading the remaining articles in terms of content relevance followed by a further discussion we attain the final list E8, which includes the final number of 37 relevant articles. 33 of them are journal articles and 4 of them are conference articles.

Results

Table 3 shows the number of identified articles in journals or conferences. For better clarity we do not show “0” if there was no relevant article. The abbreviation of the conference or journal is represented in the first line. Below we show the language of the publication (E for English and G for German).

| | EJIS | ISJ | ISR | J AIS | J MIS | MISQ | JIT | JSIS | WI | HMD | ICIS (conf.) | ECIS (conf.) | WI (conf.) | MKWI (conf.) | IJHTM | JMIR | JHC |
|----------|-------------------------------------|-----|-----|-------|-------|------|-----|------|------------------|-----|--------------|--------------|------------|--------------|---|------|-----|
| language | E | E | E | E | E | E | E | E | G | G | E | E | G | G | E | E | E |
| 2006 | | | | | | | | | 1 | | | 1 | | | 1 | 2 | |
| 2007 | | | | | | | | | | | | | 1 | | | 1 | 1 |
| 2008 | | | | | | | | | | | | | | | 1 | 8 | 1 |
| 2009 | | | | | | | | | | | 1 | 1 | | | | 9 | |
| 09/2010 | | | | | | | | | | | | | | | 1 | 6 | 1 |
| category | Senior Scholars’ Basket of Journals | | | | | | | | Basket Extension | | | | | | Domain-specific & Practitioner-oriented | | |

Table 2. Articles in Journals and Conferences (per Year)

We distinguish between the scholarly literature (Senior Scholars’ Basket of Journals and the Basket Extension) and the more domain-specific and practitioner-orientated literature. The first remarkable finding is that none of the basket journals published articles regarding our topic. Since 2006, there was no article in one of the eight Journals that deals with Web 2.0 in healthcare. In the basket extension, we found in total only five articles. To sum up, the scholarly literature does not focus on the topic. In the domain-specific and practitioner-oriented literature we see different results. We found 32 articles in total in the three selected journals. With a total number of 26 articles the “Journal of Medical Internet Research” published the most articles on Web 2.0 in healthcare. In 2006 and 2007 we found only a few article followed by a sharp rise in 2008 and 2009 by eight and nine articles. Our findings indicate that the domain-specific and practitioner-oriented literature recognizes Web 2.0 as a topic in healthcare.

To uncover the discourse lifecycle of Web 2.0 technologies in healthcare, we count the number of published articles per year that refer to that topic (Baskerville & Myers, 2009). In total we counted 37 articles since 2006. As illustrated in Figure 3, there was some interest on the topic in 2006 an 2007. This is followed by a sharp rise in 2008. This interest increases to 11 published articles in 2009. Until the end of September 2010 we count eight articles. Baskerville and Myers (2009) suggest that the upswing of an IS fashion wave is rapid and occurs within a space of between three to five years. Of the four topics they studied, three of them peaked within five years. Transferring these findings to our study, the year 2007 may signify the starting point for the upswing of the fashion wave “Web 2.0 in healthcare”. We presume that additional articles will published be in the last three months in 2010 so that we may reach or surplus the number of articles of 2009 in 2010.

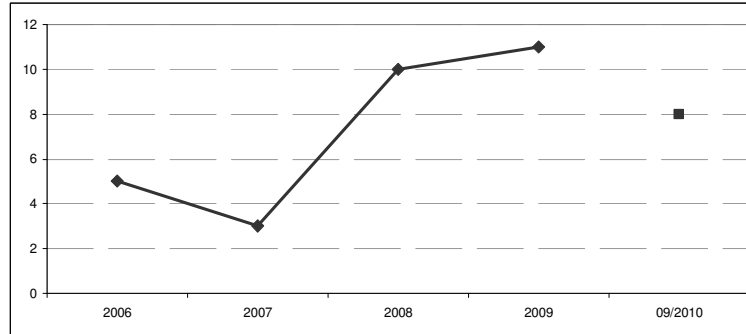


Figure 1. Number of articles related to Web 2.0 in Healthcare

DISCUSSION

In our study we asked for the emergence of Web 2.0 technologies in the context of healthcare in both the IS researcher and domain-specific/practitioner-oriented literatures. In the general scholarly literature, the interest is very small. We identified only five articles during the years 2006 to September 2010. Most of these are in conferences. This might indicate an early research interest that has not resulted in journal publications yet. In contrast, we found 32 relevant articles in domain-specific and practitioner-oriented literature. These articles are characterized by a sharp increase of relevant articles on Web 2.0 in healthcare between the years 2007 and 2008. The rise slows down in 2009, and for 2010 we assume a level of published articles which is almost similar to 2009. Our results indicate that the discourse on Web 2.0 in healthcare may have this kind of wave-like shape (Abrahamson and Fairchild (1999) cf. Figure 1). Based on these findings we presume that Web 2.0 in healthcare is a fashion wave in the phase of an upswing. Our findings suggest that the fashion Web 2.0 in healthcare already passed the phase of problem discourse and is now in the phase of solution or bandwagon discourse.

Some authors suggest that fashions emerge first in practitioner-oriented literature (Spell, 2001), while others argue that the upswing is almost similar in both scholarly and practitioner-oriented literatures (Rüling, 2005). We could not find a fashion discourse on Web 2.0 in healthcare in the scholarly literature of the IS field. In contrast, in the more domain-specific and practitioner-oriented literature, we found the typical wave-like upswing of a fashion wave. Our findings might indicate that the topic Web 2.0 in healthcare is too specific for general IS research, where the discipline does not focus on domain-specific practitioner topics such as healthcare. For example, Chaisson and Davidson (2002) reviewed mainstream IS journal between 1996 and 2001 and found that little research on IS in healthcare is published at all. They suggest that the primary barrier to publish work on healthcare IS research in mainstream IS journals is a misguided belief that the context is too specific to provide generalizable finding for IS theory.

Our findings also provide some arguments for the debate on the link between scholarly IS literature and their practical relevance. We could demonstrate that there is a growing interest in the fashion “Web 2.0 in healthcare” in domain-specific and practitioner-oriented literature; however, this is not reflected in the scholarly IS literature until now. In this context, Baskerville and Myers (2009) recommend that more IS researchers should make a determined effort to participate more directly at the start of the fashion-setting process. They point out that research methods such as action research (Baskerville and Myers, 2004; Järvinen, 2007), design science (Hevner, March, Park and Ram, 2004) and practice research (Mathiassen, 2002) bring the scholarly research directly into the hands of practitioners.

To sum up, we observe an emergence and broad adoption of Web 2.0 technologies and approaches in healthcare (Seeman, 2008; Blinn, Kühne and Nüttgens 2010). Consequently, e-health is becoming more and more importance in practice. But up until now, the IS community is not concerned with Web 2.0 in healthcare. Only a few researchers have, for example, examined factors that lead to the (non-) adoption and implementation of Health 2.0 applications (Eysenbach et al., 2004, Wilson, Balkan and Lankton, 2010). Neither is it known what types of Health 2.0 applications exist so far, what characterizes different types of Health 2.0 applications, who provides them and why, or what guidelines exist for their design. Such research would be very interesting for healthcare providers, politicians, and decision-makers. Similarly to Hughes (2008), we identify a research deficit in the field of Web 2.0 technologies in healthcare (Health 2.0); research currently lags behind practice in understanding the implications of Web 2.0 on healthcare.

CONCLUSION AND OUTLOOK

Our research was led by the question “Is the use of Web 2.0 technologies in the context of healthcare characterized by a fashion wave?” In order to provide an answer, we explored the discourse lifecycle in this paper. Our findings show that there is almost no academic discourse on the subject in the IS research literature. In contrast to that, we found 32 articles in the domain-specific and practitioner-oriented literature. Our results also show that this discourse on Web 2.0 in healthcare has a wave-like shape. This underlines our assumption of a fashion wave. We also provide tentative empirical findings for the ongoing debate about the relevance of the IS discipline. Our findings reveal that there is a fashion in the practitioner literature and that the IS research literature does not participate until now (for whatever reasons). To verify our assumption, further research is necessary. Therefore we prepare for an update of this study for the last three months of 2010 to clarify the development from 2006 to 2010. In addition, we plan to extend our study to the used research methods in the relevant articles. We might also enlarge our literature database with additional outlets from neighboring disciplines. We will also prepare for a study on the diffusion of Web 2.0 in healthcare. The findings of Blinn et al. (2010) seem to provide a solid starting point for this research.

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