Abstract

An important step towards superior healthcare management is meaningful use of the electronic health record (EHR) systems which can be facilitated through the use of Direct technology by the healthcare providers. Contrary to expectations, the usage of Direct technology is not wide-spread. This article seeks to understand the underlying causes by using discourse analysis of qualitative data collected in West Tennessee region. An inductive data analysis to construct discourses both before and after the attempts to encourage the technology among the promoters, the supporters, and the providers reveals that most actors were initially quite positive and hopeful about the technology; however, by the end of the statewide rollout, many of them got disenchanted with Direct technology. Some of the issues perceived by various actors in the field comprised of the inability to integrate the state offered technology with their EHRs, unplanned and rushed rollout, and lack of post-rollout support.

Keywords

Electronic Health Record, EHR, Healthcare Information Systems, Direct Technology, Discourses

Introduction

 Numerous changes have taken place in the U.S. healthcare system since mid-20th century. In the last five years, however, there has been a determined push towards making healthcare providers and hospitals record and document patient information electronically into what are called electronic health records (EHRs) with a goal to "reduce medical errors" (Gupta and Murtaza 2009), improve collaboration among providers, reduce the cost of healthcare, and improve the delivery and quality of healthcare in many ways (Berkowitz and McCarthy 2013; Institute of Alternative Futures 2006; Iroju et al. 2013). While the shift from paper-based records to EHRs is expected to be across-the-board, the transition remains uneven (DesRoches et al. 2013). To encourage this transition, the U.S. government called for a mandatory shift to
HRs by 2014 for all healthcare organizations (RAND Health 2005). This transition without the meaningful use of the EHRs would have remained largely ineffective.

Despite government’s initiatives and the provision of extrinsic incentives designed to foster the meaningful use of EHRs, the usage of the tools that increase such meaningful use has had a slow start in the United States. It is rather baffling that while 74% of U.S. physician EHR users in 2011 said they believed using EHR enhanced overall patient care; 85% of those who use the EHR system reported being very satisfied (38%) or somewhat satisfied (47%) with their systems (Jamoom et al. 2012), healthcare providers have been slow to incorporate them in their workflow (Porter 2013). Various reports by the National Center for Health Statistics (NCHS) revealed that less than 50% of the existing users use the basic electronics healthcare record (EHR) systems. February 2014 report showed that only 67% of clinical laboratories have the capability to send results in the structured format electronically to the EHR as per Meaningful Use Stage 2 requirements. Out of these 67% labs, only 80% (effectively 53% of the total) fully comply with the Meaningful Use Stage 2 (MU – 2) requirements by sending results electronically (Swain and Patel 2014).

To be able to meet the MU - 2 criteria, it was important that the providers used Direct technology which was “developed by a public-private collaboration called the Direct Project, sponsored by the Office of National Coordinator for Health Information Technology (ONCHIT)” (“directtrust”, 2014). Direct technology contains functions necessary for point-to-point communication among various stakeholders (e.g., patients, providers, provider support staff, etc.) while following standard protocols and ensuring the security of patient data and thus helps in improving the quality of patient care. However, Direct technology was being perceived differently by different entities in the healthcare field. During one of the interviews, the Chief Medical Information Officer (CMIO) of the Tennessee Office of eHealth Initiatives said:

“the biggest challenge and the biggest potential risk centers around conveying the message that it is not about picking a piece of software or hardware, it is about transforming the way we practice and doing that successfully requires careful planning and change management, not just a business decision to adopt HIT.” (Royce & Leftwich, August 13, 2012)

This article seeks to understand the underlying causes of the Direct technology implementation not meeting the expectations in the West Tennessee region of United States by using discourse analysis of qualitative data collected from various actors in the healthcare field. By taking a theoretical perspective of institutional logic and organizational field, we seek to develop a better understanding of the phenomenon and to discover the conversational discourses about the introduction of Direct technology in the healthcare field in a mid-south metropolitan area in West Tennessee in the United States.

In organizational settings, actors develop interpretative schemata to make sense of codes, practices, procedures, and values (Magala 2009; Sorge 2005). However, much of the understanding that the actors develop from varied inputs is a function of the “enduring elements in social life – institutions – that have a profound effect on the thoughts, feelings, and behavior of individual and collective actors” (Lawrence and Suddaby 2006). These institutions impose some “overarching set of principles” called institutional logics (Greenwood et al. 2011) that guide organizations in “how to interpret organizational reality, what constitutes appropriate behavior, and how to succeed” (Thornton 2004). Organizations are subjected to multiple logics that often interact and compete for influence (Nigam and Ocasio 2010). Under these multiple institutional logics, how organizations manage the tensions and respond is an important research question which cannot be comprehensively answered without understanding where these multiple logics come from. Logics evolve in an organization’s environment through the conversations among actors in an organizational field. Organizational field is a cluster of organizations in which the member organizations seem to behave similarly compared to organizations outside the field.

The focus of this article is to understand the evolution of institutional logics by taking a deeper look at the conversations at the organizational field level in the healthcare field about Direct technology that enables providers to share patient health information securely. When a field faces a change initiative, divergent

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1 Meaningful use comprises of systematic requirements laid down by the Center of Medicaid and Medicare Services which if pursued by the providers will bring about a higher and a meaningful use of the electronic health record systems.
beliefs and dynamics might cause member organizations to act incoherently with respect to other field members that might cause slow progress of the overall field towards the sought change. In the case of a change envisioned in the healthcare field, member organizations, for example, primary care providers, hospitals, and the state’s regional extension center had different views towards the same technology that may undermine the pace with which providers might want to start using Direct technology for exchanging patient health information.

In this article, we aim to understand the intra-field dynamics by examining the discourses in the healthcare field in a mid-south metropolitan area in West Tennessee. Understanding these discourses is important because they may influence the fields in three ways – by influencing the relations between individual actors and organizations, by developing collective beliefs and shared cognitions among the members, and by regulating the norms in the field often through the formal authority exercised by key members (Glynn 2008; Hardy and Maguire 2010; Lampel and Meyer 2008; Oliver and Montgomery 2008; Zilber 2007). Communication plays a key role in how the norms and logics in a field are revised as various events of the past converge into a system of categories that when repeatedly followed become the incumbent field logic (Ocasio et al. 2015).

In healthcare, organizations (facilities, providers, laboratories) are working with each other to accomplish the common goal of meaningful use and meeting the criteria laid down by the Center for Medicare and Medicaid Services. Meeting these criteria requires organizations to work with each other, particularly for the providers and hospitals to work with the state regional extension center which was created and supported by Office of the National Coordinator for Health Information Technology (ONCHIT).

This article seeks to make two major contributions: one, it responds to Wooten & Hoffman’s (2008) call to conduct research that brings out the dynamics and processes – as opposed to outcomes – within the field; and two, it conducts an inquiry into ‘what-is-going-on-about-interoperability-within-the-healthcare-field’ to further our understanding of how some organizations despite dissimilar goals find it advantageous to interact with one another (Wooten and Hoffman 2008). In the next section we provide a brief review of the current literature pertaining to organizational fields, which is followed by an examination of the empirical data to locate discourses. In the end, we discuss the practical implications of the existing discourses in the healthcare field.

Theoretical Background

Institutional Theory and Organizational Fields

Out of the many theories that are used to explain organizations’ behavior, institutional theory has gained “prominence and popularity over the past two decades” (Wooten and Hoffman 2008) and is viewed as a dominant lens within organizational theory (Greenwood et al. 2008). According to neo-institutional theory, the actions taken by organizations, while attributable to forces in the environment, do not comprise a set of infinite possibilities that are to be determined by contingent external pressures. By taking note of the regulative, normative, and cultural-cognitive systems of the institutional environment that facilitate meaning-making for an organization (Scott 2001), neo-institutional theory in the past two decades has moved further and sought to explain “how social choices are shaped, mediated, and channeled by the institutional environment” (Wooten and Hoffman 2008).

One of the theoretical concepts in institutional theory that has often been used to explain organizations’ actions is “institutional logics,” which as mentioned in the preceding section are a set of principles that help an organization decide on an appropriate course of action (Thornton 2004). In recent literature on institutional theory research, institutional logics “has become something of a buzzword” (Thornton and Ocasio 2008). However, along with institutional logics, there is another construct called “organizational field” that holds a central position in neo-institutional theory (Wooten and Hoffman 2008) and is “an important unit of analysis in contemporary organization theory” (Davis and Marquis 2005; Schüssler et al. 2014; Wooten and Hoffman 2008). Organizational field is defined as “a community of organizations that partakes of a common meaning system and whose participants interact more frequently and fathfully with one another than with actors outside the field” (Scott 1995). Developing an understanding towards how fields form has been of interest to organizational theorists (Leblebici et al. 1991; Lounsbury et al. 2003; Schüssler et al. 2014). Organizations are embedded within the network of relationships which then
impacts the actions of the members in that network (Warren 1967). This ability of the network to impact the organization’s actions due to the interrelationships, dependencies, and legitimacy expectations together convolute to form an organizational field.

Recent research is beginning “to probe the pattern of relationship between logics, fields and relationships” (Greenwood et al. 2011). The members of an organizational field operate under the institutional arrangements that suggest normative responses to various challenges the organization faces. However, research has shown multiple logics to be operating in an organization’s environment, for example, in the banking sector (Marquis and Lounsbury 2007). Earlier the assumption was that any contradiction between logics was transitional, but recently a number of studies, in addition to the aforementioned banking sector study, have recognized and highlighted the coexistence of multiple logics over an extended period of time (Dunn and Jones 2010; Jarzabkowski et al. 2010; Reay and Hinings 2009; Schneiberg and Clemens 2006). Organizations need to reconcile with differences across logics (Seo and Creed 2002; Wooten and Hoffman 2008). Changing social circumstances may help install new logics or reprioritize existing logics (Lok 2010).

Since social circumstances are reflected through the discourses that exist in the field, any reordering of logics is likely to be dependent on the discourses and exchanges among the organizations and/or organizational actors in the field. Different kinds of fields (mature versus emerging) witness different kinds of discourses. The distinction between a mature field and an emerging field is subjective. For matured fields, there is a relatively settled pattern of responses with regularized practices, while for an emerging field, there are uncertain responses with highly permeable boundaries that allow actors to enter from varied logics that gives rise unpredictable responses (Maguire et al. 2004). Field-level conflict may arise among organizations for gaining access to resources (Wooten and Hoffman 2008) and may carry on continuously, leading to a dynamic evolution of the field, which oftentimes leads to “a different ‘point of view’ about it and a different access to resources in the field” (Battilana 2006).

Enactment of the HITECH Act has called for changing healthcare management in the United States which in turn calls for changing the way the various organizations in the healthcare field operate. The CMIO of the Office of eHealth initiatives of Tennessee in an interview with the Health Information and Management Systems Society (HIMSS) said that one piece of advice he would give to professionals in the healthcare field would be to “learn all about change management and the challenges it presents” (Royce & Leftwich, August 13, 2012). Change in fields can be brought by destabilizing the incumbent discourse by the use of language and text (Maguire and Hardy 2009). It is the “production, distribution, and consumption of texts” (Hardy and Maguire 2010) that leads to the creation of discursive space (Hajer 1995). (Jacobs et al. 2003) defined discursive space as “a site of contestation in which competing interest groups seek to impose their definitions of what the main [issues] are and how they should be addressed” (p. 442). These discursive spaces with multiple voices – some dominant and some peripheral (Belova et al. 2008), provide a fertile ground from which sprouts “an alternative interpretation of reality that relaxes taken-for-granted assumptions, thereby creating a place where new things can be said and new social structures envisioned” (Fletcher et al. 2009). Therefore, it is of paramount importance to trace texts, voices, and language to examine the discourse in the field.

Research Setting and background

This study was conducted in the mid-south region of the United States, specifically in one of the metropolitan areas of West Tennessee. In early 2012, patients seeking medical care from multiple care providers navigated across care providers with their records because there was no reliable communication among the healthcare providers and facilities in the region. This increased the probability of medical errors, duplication of services, and increased cost because many patients did not understand the complex healthcare system well. The enactment of the Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 and its ramifications demanded healthcare providers to demonstrate meaningful use through communication across practices which was aimed at resolving the problems mentioned above. To facilitate the meaningful use of EHRs and communication across practices, the ONCHIT established the Regional Extension Centers (RECs) across the country and allocated funds for promoting the use of Direct technology, a technology developed by the non-profit Direct project group to achieve secure communication across EHRs. However, this communication across EHRs required a
security certificate provider. This facility was provided by various Health Information Service Provider (HISP) vendors.

Before the use of Direct technology, hospitals, healthcare facilities, and providers used an EHR for keeping scanned copies of their patient records in an electronic form. Whenever there was a requirement for patient records to be sent from one provider to another, faxing was used by the facilities. Because of Health Insurance Portability and Accountability Act (HIPAA), which requires patient medical information to be confidential, facilities had to take sufficient care and expend considerable efforts to ensure that they were not violating HIPAA rules while exchanging patient information with other providers. The development of Direct technology as a secure and electronic form of communication was aimed to help providers in exchanging patient information efficiently without committing any HIPAA violations and improving their workflow to meet meaningful use criteria as specified by the Center for Medicare and Medicaid Services (CMS). But the healthcare providers on the ground were not aware of Direct technology, its purpose, and impact on their practice. In order to facilitate the acceptance and utilization of Direct technology by hospitals, facilities, healthcare providers, and other people who exchanged healthcare information (for example, physician hospital organization, care managers etc.), the Office of eHealth Initiatives contracted an agency TN-DirectExt (which was also the REC for the state of TN) for promoting the use of Direct technology.

Initially, “no one in our state was using it [Direct technology] ... TN-DirectExt had to provide education before they could get people could jump on board to try this technology,” said Alexa Kearny, the Direct project manager at TN-DirectExt (Perna 2014, p. 1). A pilot project was launched from February to May 2013 in West Tennessee, Middle Tennessee, and East Tennessee so that TN-DirectExt could give itself a better chance to understand how Direct could be utilized across the state. In Tennessee, TN-DirectExt worked with Cerner and Informatics Corporation of America (ICA) as the two HISP vendors who would validate the security certificate of the communication done through Direct technology protocols.

On March 28th, 2013, it was reported that five organizations joined the pilot phase for using Direct Project protocols for exchanging patient data. One of these five organizations was CareCo from West Tennessee. CareCo was a partnership between the association of physicians and a major hospital in the area and had developed a patient centered medical home model for the mid-south region. The role of CareCo is different from the healthcare providers because CareCo is just a liaison organization that represents the interest of hospitals, facilities and healthcare providers to the insurance companies. For this study, we looked at the discourses between healthcare providers, technology promoters (TN-DirectExt), and CareCo in West Tennessee about Direct technology’s use that came about through the efforts of TN-DirectExt. We particularly look at the interactions between 3 three groups of actors for examining the existing discourses in the healthcare field in West Tennessee and how the discourse changed over time as reflected in the interactions amongst various field members. These groups were – (1) the promoters that included the state Office of eShare Initiatives, and the state regional extension center – TN-DirectExt, (2) the physician hospital organization – CareCo, and (3) the healthcare providers.

**Method**

**Data Collection**

Based on the research question and the interpretive perspective of the study, qualitative data was collected over time between April 2013 and October 2014. TN-DirectExt members were meeting care providers and hospital administrators in April-May 2013 during the pilot phase for promoting the Direct technology where we collected non-participant observation notes. In addition, secondary data in the form of news articles, webpages, reports by various government and non-government agencies, and copies of the American Recovery and Reinvestment Act (ARRA) and the HITECH Act were collected and assessed. Also semi-structured interviews were conducted with informants at TN-DirectExt, CareCo, Family Healthcare, and Mid-South Medico, who were identified using a snowball sampling approach. Most of the questions asked in the semi-structured interviews were open-ended questions with minimum interruption from the research team. Questions focused on the interoperability aspect of the patient information sharing through eShare Direct technology across practices. We started off with similar questions to each informants, however based on the semi-structure interview philosophy, additional questions were included based on the informant’s responses to allow us to explore a wider range of discourses and
develop a richer understanding of the phenomenon. Having a clear understanding of the events and chronologies was an important step of our data analysis. All semi-structured interviews were digitally audio-recorded and transcribed verbatim with notes made about pauses and intonation as far as possible. The conversation revolved mostly around the use of various communication processes, tools, and technologies. Table 1 summarizes the data collection detail.

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<th>Non-participant Observations</th>
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<td>In Office of eHealth meeting</td>
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<td>In Direct account setting up</td>
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<th>Semi-structured Interviews</th>
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<td>Of providers/administrators at the facilities</td>
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<td>Of administrator and nurse at CareCo</td>
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<td>Of state official &amp; TN-Direct Ext</td>
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Table 1. Data Collection Detail

Analysis and Findings

The research question we seek to answer requires us to understand different discourses in the healthcare context in the West Tennessee area, which are reflected in the texts and words used by the actors. Following the interpretive paradigm, the trustworthiness of the data was established using four factors: credibility, transferability, dependability, and confirmability (Denzin and Lincoln 1994). Next, we coded the data wherein we looked for opinions and attitudes towards Direct technology as expressed by the informants in the interviews, as well as reports, and news articles. Following previous research (Allard-Poesi 2005), we examined the “streams of communications” (Ocasio et al. 2015, p. 28) in the collected data to categorize field discourses on two dimensions – the time, and the actor groups. The first dimension reflects the time during the rollout of the Direct technology in West Tennessee. Based on the rollout, we divided the whole data into two parts – before the statewide rollout (T1) and after the statewide rollout (T2). For both T1 and T2, we analyzed the data separately for three groups of actors in the field that were defined above. Each transcribed interview, news article, and report was read at least twice to generate first order concepts that were categorized based on the source and timing of texts/speech. The process\(^2\) of generating the first order concepts was inductive and there were no pre-determined categories of any kind. The first order concepts were in turn integrated to let the second order themes emerge, which were recorded as one of the discourses in the field. With three actor groups and two times points (T1 and T2), we had six discourses. For all three categories of informants, the discourse evolved over time, which is not unexpected but certainly notable.

Results

The data structure for the discourse among the promoters for both T1 and T2 in figure 1 shows the change in the discourse among the promoters over time. Before the statewide rollout, major discussion point was the Direct technology to be a desirable communication tool which ought to be promoted with an incentive, but after the rollout the discourse shifted towards limited resources and lack of interest from providers. Even though the promoters claimed success in terms of the Direct technology awareness that they spread, lack of funding became dominant discourse after rollout.

\(^2\) Data analysis tables that show the process of generating second order themes and first order concepts from representative quotes are available upon request from authors
The physician hospital organization – CareCo – that was contacted by the promoters to get in touch with the providers also viewed the Direct technology to be a great tool for communication in the healthcare
network. During various meetings with the promoters, CareCo also gave their inputs regarding what might facilitate and what might hinder the use of Direct by providers. However, by the end of the rollout, the Director of the program at CareCo, Dorothy Shumski, whose job was to “build strategies and implement things that should improve the way we are communicating, and interacting with physicians” termed the technology to be “kludge” that did not integrate very well with the existing EHRs. Figure 2 shows the data structure for the change in the discourse at CareCo.

The providers expressed hope and expectedly some concern before the statewide rollout of the technology. The views of the providers were convergent and their primary concerns revolved around the contractual obligations with ICA Direct and the technicalities surrounding the technology and the health information service provider (HISP). After the statewide rollout, the providers felt that the technology was not very useful in the current form and support was not provided by the promoters. Figure 3 shows the data structure for the changed discourse among the providers.

Figure 3. Data Structure for providers’ discourses

Discussion

Existence of multiple discourses, which might likely give rise to competing logics, due to different assumptions is natural in a social system. Evidence of an assumption among one of the providers, Dr. Holcomb, was reflected during an interview when he said that “my thought was that … the ICA Direct would actually be available within the NextGen chart, either by doing some type of a linkage or something like that.” Using Direct technology was being perceived as “one more” imposition from the government in addition to the already existing numerous laws that healthcare providers had to abide by. This was reflected during the conversations when administrators and providers on several occasions said that there is already too much and that there is probably more to it than they know of. The promoter (i.e. the state and the TN-DirectExt) set goals in terms of the number of user signups. Although it sounds motivating, it is actually perceived as not really helpful after the users signed up. Another notable observation in the discourses was the evolution of the concept of “success” by the promoters of Direct technology. While initially the promoters sought an integration of Direct into the provider EHR systems and standard communication of continuity of care documents (CCDs), with time when the promoters could not get the
desired results with respect to integration of Direct and the CCD referrals, they sought satisfaction in the fact that they were able to spread the word and awareness about Direct.

Therefore, based on the discourses that emerged in this research, we suggest that the state Office of eHealth initiatives should have been more process oriented by educating the providers instead of linking the rewards of the promoting organization (TN-DirectExt) with meeting the goals in terms of the number of user signups without any educational or service follow-up. While TN-DirectExt did try to educate the providers as much as they could, the focus always was on meeting the numbers instead of making sure that the providers understood the utility of Direct. TN-DirectExt might have organized these educational campaigns through demonstration of the interoperability through Direct that might have helped to drive home the point that Direct was not “just an email system.” The providers, on the other hand, were not sure of some of the communication that was being delivered to them despite the HIT specialist from TN-DirectExt explaining about Direct in great detail. There was an inhibition on their part that was counterproductive to the whole process of the promotion.

The contributions of this article are threefold. This article specifically responds to the call for researchers engaged in institutional theory research “to focus on collective rationality within fields” (Wooten and Hoffman 2008, p. 138) by not only focusing on field outcomes, but also looking at field-level interactions that are vital to organizations. By looking at CareCo, primary care providers, and the TN-DirectExt (that is involved in the pilot project and statewide rollout of the Direct technology) separately, we respond to this call and provide a deeper perspective of healthcare field dynamics through an empirical illustration of multiple discourses in the healthcare field.

Secondly, it helps to develop our understanding of intra-field dynamics. By intra-field dynamics, we refer to the various ongoing changes in terms of viewpoints about something that the organizations in the field consider important – in this case, the Direct technology use. This will further help in the research in institutional theory that in turn looks at the response mechanism of organizations when subjected to various logics. Without an understanding of how discourses play themselves out in a field, it is difficult to understand the institutional changes that are likely to emerge.

Finally, based on the emerging discourses in the field from multiple actors our findings expand our understanding of the opinions and major issues faced by various actors during implementation and offer practical insights.

Our research is restricted to a geographical region and the sample does not cover bigger hospitals where other organizational factors might have been significant. This may give a limited view about how the healthcare field dynamics work across the country. However, the depth of the analysis might compensate for the lack of breadth.Emergent discourses are usually a function of how powerful each actor is and therefore, a future research possibility lies in examining the role of power of actors or influential organizations on field dynamics. While the promoters (i.e. the state and TN-DirectExt) met their goals and providers played their part, there is a possibility that that actors in the field were taking a decision route that presented the least impedance and provided maximum legitimacy. This leads to a broader question whether actors act as agents and seek maximum benefits to themselves instead of making efforts towards systemic improvements that are desired of them in their positions. Future research exploring the link between agency, legitimacy, and institutions might be an interesting endeavor.

Conclusion

We accomplished our goal of understanding the field dynamics by presenting various discourses from different members of the healthcare field in the West Tennessee area. An examination of texts collected from transcribed interviews, news articles, and various reports led to the emergence of discourses from three categories of informants in the healthcare field in the given context. Most care providers were seeking a Direct technology application that could be integrated with their own EHR. Based on the discourses, a question that arises is why the state then invested in the promotion of Direct provided by ICA instead of educating the utility of Direct technology and its purpose in meeting meaningful use stage two objectives. These discourses indicate that the members in the field were acting to preserve their legitimacy in their environment.
REFERENCES


