

Association for Information Systems AIS Electronic Library (AISeL)

ICIS 2010 Proceedings

International Conference on Information Systems
(ICIS)

2010

ORGANIZATIONAL BOUNDARIES, INDUSTRY FRAGMENTATION, AND ELECTRONIC PERSONAL HEALTH RECORDS

Ryan Baxter

Bentley University, rbaxter@bentley.edu

Mark O. Lewis

Bentley University, mlewis@bentley.edu

Follow this and additional works at: http://aisel.aisnet.org/icis2010_submissions

Recommended Citation

Baxter, Ryan and Lewis, Mark O., "ORGANIZATIONAL BOUNDARIES, INDUSTRY FRAGMENTATION, AND ELECTRONIC PERSONAL HEALTH RECORDS" (2010). *ICIS 2010 Proceedings*. 104.

http://aisel.aisnet.org/icis2010_submissions/104

This material is brought to you by the International Conference on Information Systems (ICIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in ICIS 2010 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

ORGANIZATIONAL BOUNDARIES, INDUSTRY FRAGMENTATION, AND ELECTRONIC PERSONAL HEALTH RECORDS

Research-in-Progress

Ryan Baxter
Bentley University
175 Forest Street
Waltham, MA 02452
rbaxter@bentley.edu

Mark O. Lewis
Bentley University
175 Forest Street
Waltham, MA 02452
mlewis@bentley.edu

Abstract

This research-in-progress paper reports on an in-depth case study that integrates literatures from health care policy, information systems, and strategic management to explore how an entrepreneurial firm shapes its organizational boundaries in the context of the complicated healthcare ecosystem in the United States. In doing so, we investigate the implications of boundary shaping decisions on the development and deployment of an electronic personal health record (ePHR) system. The growing call for the use of ePHR systems is based on the logic that providing personalized, timely healthcare information that supports an incentive-based compliance program will not only lower healthcare costs but lead to healthier individuals and improved organizational performance. However, as mentioned in this paper, populating ePHR systems is a huge data integration challenge that requires the successful coordination of many players with potentially competing objectives. By adopting the perspective of a startup firm within this context, we illuminate the impact of industry fragmentation and competing goals and objectives within the health care context, and show the importance of boundary decisions that promote cooperation and tight integration to facilitate the information flows needed to populate employer sponsored ePHR systems.

Keywords: Organizational Boundaries, Industry fragmentation, Electronic Health Records

Introduction

Electronic personal health records (ePHRs) are increasingly looked at as tools that may help to flatten ballooning health care costs curves (Loeppeke, 2008). Building on the ideas of electronic health records (EHR), ePHRs are designed to track patients' healthcare interactions with physicians, hospitals, clinics, etc. (Miller et al. 2009). ePHRs foster individuals' active role in managing their health (Tang et al. 2006) so that they "become partners in maintaining their health and treating their own illnesses. They will monitor their clinical values—such as daily weights for patients with congestive heart failure—and using new forms of decision support, will make wise decisions regarding how to manage their health problems without always having to contact a doctor or a nurse" (Blumenthal et al. 2007, p. 2528). For primary prevention¹, the ePHR can match a patient's personalized profile and healthcare information to determine probabilistic risk factors. The secondary and tertiary levels of ePHRs both rely more on the data generated from treatments and tests from a patient's ongoing interactions with physicians and clinics to help provide a picture of how the individual is managing a chronic condition or disease by tracking his/her improvement or deterioration². However, a key dependency for successful ePHR deployment is the aggregation of patient data across a fragmented landscape of doctors, laboratories, clinics, and hospitals.

While the cost-saving logic for providing ePHRs is straightforward, plugging in an ePHR solution into the fragmented healthcare industry is likely to be challenging. According to (Wilcox et al. 2006), "The current health care delivery system in the United States is notable for its fragmentation of care across providers and care settings" (p. 814). Strange (2009) notes that, "specialized information has expanded without a similar expansion in our ability to integrate, prioritize, and personalize narrowly construed information. As a result, our ability to turn information into knowledge and knowledge into wisdom has diminished" (p. 101). One possibility to remediate such fragmentation and turn information into knowledge lies in new information technologies. Yet, an ePHR solution within the fragmented healthcare industry has yet to emerge and stabilize. In the recent emerging technologies research there is evidence that firms can construct novel market spaces by shaping their boundaries with other across such fragmentation even when they are new start-ups with relatively low industry power compared to potential competitors (Santos et al. 2009). What we see as a complementary interest, and our focus from an information systems perspective, is to more precisely understand the relationship between the development of an information technology solution and the these boundary shaping decisions. Thus, our research questions are: how do boundary shaping activities influence the development of an ePHR, and what are the causal mechanisms that explain these relationships?

Such fragmentation exists as a result of the boundary shaping activities of individual organizations that inhabit the complex healthcare ecosystem in the United States. The purpose of this research, therefore, is to develop a deeper understanding of the relationship between boundary shaping activities, industry fragmentation, and the development and deployment of ePHRs. By following a problem rather than theory driven approach to boundary exploration (Santos and Eisenhardt, 2005), this longitudinal and process oriented study will follow an entrepreneurial firm that is developing an ePHR solution, as they wrestle with the issues and complexities inherent in boundary formation. In doing so, we will explore the underlying causal mechanisms that shape boundary formation in this context, and examine the associated impacts to the development and deployment of ePHRs.

This paper is structured as follows. In the following section we provide a more in-depth background on ePHRs and the issue of industry fragmentation. Then, we summarize the research methodology that will be used to examine our research question, followed by a brief review of preliminary findings. Finally, we conclude this research in progress paper by describing our next steps and estimated timeline.

¹ "Primary prevention is directed at people without the disease(s) of interest; secondary, at early detection and treatment for those who have the disorder; and tertiary, at prevention of complications" Iyasu, S., and Atrash, H.K. "Prevention for Health," in: *Health and welfare for families in the 21st century*, H.M. Wallace, G. Green and K.J. Jaros (eds.), Jones and Bartlett, Boston, 2003..

² Of course, in all of these examples, the ePHR depends upon a behavioral component of compliance in response to the information provided. Testing the linkage between ePHR use and behavioral compliance is outside the scope of this study.

Theoretical Lens: Organizational Boundaries

Boundary formation is a fundamental issue in organizational research (Santos and Eisenhardt, 2005; Pfeffer and Salancik, 1978, and Thompson, 1967). As Santos and Eisenhardt (2005) acknowledge, organizational boundaries have been conceptualized in multiples ways, including: as the demarcation of the social structure that represents the organization (Dutton et. al, 1994), as the delineation of resources owned by the firm (Helfat, 1997), and as a determination of the sphere of organizational influence and control (D’Aveni, 2001). Santos and Eisenhardt’s (2009) recent work on boundary formation is particularly useful for this study, as it highlights the critical challenges and strategies for an entrepreneurial firm seeking to form organizational boundaries in a new market. Furthermore, it is especially useful in situations where existing players (e.g., TPAs) already have access to or control key resources that are crucial for business success. At the same time, we see distinctive contributions stemming from a study of the fragmented healthcare industry context, which differs from the internet start-up context that they studied.

Entrepreneurial firms seemingly lack the resources to shape a markets, broaden their own boundaries, and establish a sphere of organizational influence, thereby attenuating organizational growth trajectories (Santos and Eisenhardt, 2005) and putting themselves into an unfavorable resource dependency position with established firms (Pfeffer et al. 1978). To address this issue, Santos and Eisenhardt identify various soft power tactics that allow new firms to shape boundaries in their favor while the market crystallizes. These tactics include illusion, timing, and exploitation of other’s tendencies as well as identity shaping, alliances, and acquisition. These tactics were identified in firms that were not only trying to shape the market, but position themselves as leaders through advantageous boundary formation strategies. This is quite surprising given that prior literature has identified that “in contrast to established firms, young ventures typically have incipient activities and resources (Burton & Beckman, 2005; Rindova & Kotha, 2001), a fluid or even no identity (Lounsbury & Glynn, 2001; Rindova & Kotha, 2001), limited power to influence other firms (Hallen, 2008; Ozcan and Eisenhardt, 2009), and face major strategic hurdles that make survival, not efficiency, crucial (Graebner, 2004)” (Santos et al. 2009, p. 644).

Santos and Eisenhardt (2009) provide a framework for understanding power differentials when an entrepreneurial firm striving to create a new market still needs to rely on some well-established firms that have access to resources, customers, or can influence institutional arrangements (e.g., standards). Lastly, it draws on and extends the literature on resource dependency and power issues (Pfeffer et al. 1978) between organizations that are likely to exist within a nascent market (i.e., ePHR) that is dependent for success in an already established market (i.e., healthcare). Santos and Eisenhardt identify the following three processes and associated mechanisms (See Table 1) that will be used as a framework to shape data collection and analysis for this study.

Key Processes	Claiming the Market	Demarcating the Market	Controlling the Market
Objective and Description	<i>Cognitive Dominance:</i> “...defining and distinct identify for both the firm and market so that the two become synonymous. If ...successful, their firm becomes the cognitive referent for the claimed market” (p. 649).	<i>Competitive Dominance:</i> “avoid competition with powerful firms from nearby markets by co-opting them with alliance mechanisms” (p. 654).	<i>Market Dominance:</i> “...control the market by overlapping their organizational boundary with the market boundary in such a way that their firm occupies as much of the market space as possible” (p. 658).
Key Mechanisms	Adopt Templates	Equity Investment	Elimination of Competing Models
	Signal Leadership	Revenue-Sharing Agreement	Increasing Coverage
	Disseminate Stories	Anti-leader Positioning	Blocking Entry

Across their cases they find that successful firms largely follow these tactics while less successful firms seem less apt to. They also propose three soft-power tactics as described in Table 2 that would lead to greater market share.

Table 2. Three Soft Power Tactics and Descriptions (Santos et al. 2009).

Illusion	Exploiting Others' Natural Tendencies	Timing
"...the use of deception, such as shielding intentions and exaggerating one's importance to gain advantage" (p. 663)	Exploit individual tendencies to be over influenced by stories with personal detail. Exploit market leaders tendencies to explore nascent markets without fully jumping in by offering to create an alliance	First to market when positioning to be the cognitive referent First to engage in strategic alliances. Delay negotiations with potential buyers to gain position

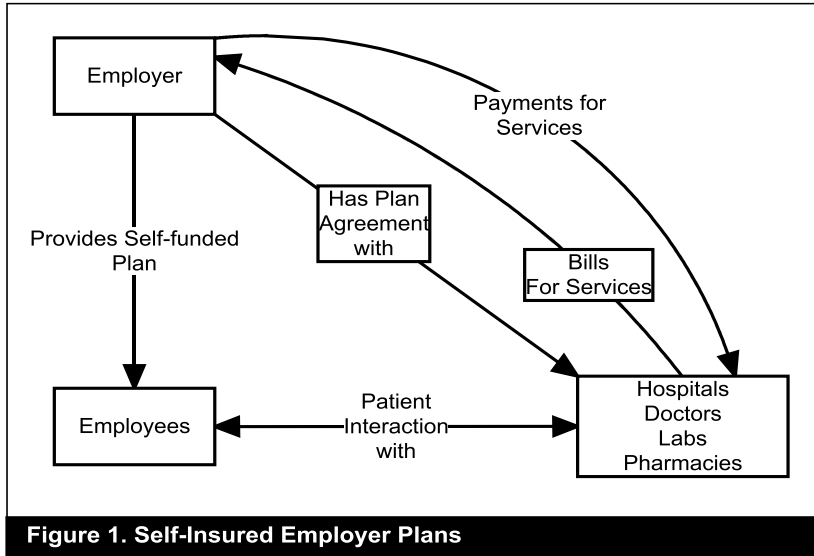
While the tactics described by Santos and Eisenhardt do not describe all power and boundary related issues relevant in the literature, they do provide a recent review and niche focus relevant to nascent markets. In order to fully capture all possible boundary related shaping we anticipate that we will be incorporating or at a minimum explaining why the nascent market of ePHRs compares to classical boundary shaping views (e.g., transaction cost economics - Williamson 1981) (which Santos and Eisenhardt (2009) have already done. We also anticipate a fruitful connection between literature surrounding boundary spanning and boundary objects (Levina et al. 2005), however our primary initial approach will be to focus on how ePHR development unfolds from the perspective of market construction and boundary shaping as identified by Santos and Eisenhardt (2009).

Background: Electronic Personal Health Records and Industry Fragmentation

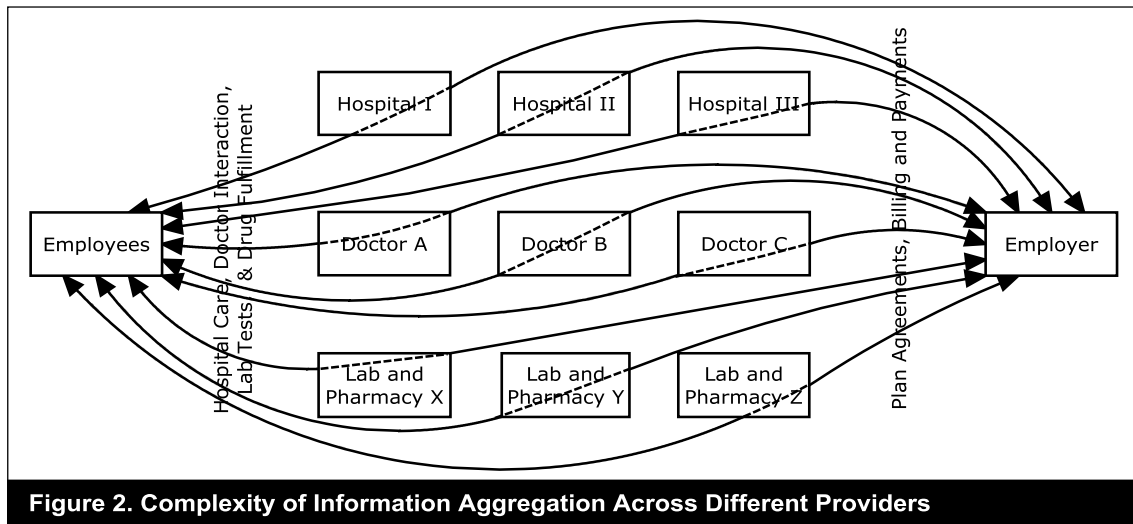
Generally, there are two ways that ePHRs develop in the marketplace to achieve the aggregation of clinical data that is required. First, consumer-driven applications like Google Health and Microsoft HealthVault provide digital platforms for storing personal healthcare information. These services depend upon individuals to take responsibility for the aggregation of their own healthcare data. Second, employer-driven applications take data aggregation out of the hands of the individual, acting as electronic data aggregators by pulling healthcare data from many disparate sources and using it to populate ePHRs for each employee. Automating data-aggregation is essential for self-funded employer health plans since the primary purpose of investing in ePHR technology is to reduce healthcare cost by driving compliance-related activities (Miller et al. 2009).

The self-funded employer-based model of insurance is one in which employers bear the risk of paying for healthcare rather than an insurance plan. Figure 1 shows a simplified version of this model³ where the employer provides a health plan to the employee and is then responsible for all costs beyond the deductible. The employee then contracts with doctors, clinics, hospitals, and health-related providers for services.

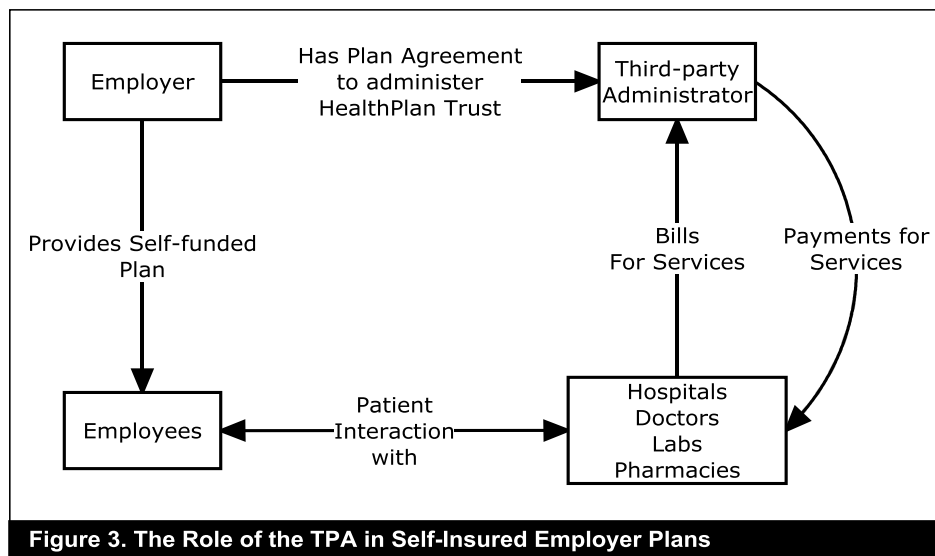
³ Employers will generally establish a type of trust fund that accumulates funds withheld on behalf of employees and makes payments. Furthermore, most self-funded firms purchase stop loss insurance to guard against catastrophic events.



Two challenges not identified in figure 1 include the facts that 1) doctors, hospitals, labs, pharmacies, etc., all have different electronic health record systems and 2) not all systems are electronically based. As a result, there are many more connections between the employer and employees as indicated in Figure 2.



Cebul et al. (2008) write that, “these fragmented organizational structures lead to disrupted relationships, poor information flows, and misaligned incentives that combine to degrade the quality of health care in important ways” (p. 93). Challenges in the information flow and collection of health-related information exist because of the difficulty in obtaining clinical care data, which includes data from doctor-patient interactions, labs, procedures, tests, and hospitals. Because self-funded employers would have to dedicate many resources to establishing and maintaining interfaces with these healthcare providers, many draw upon a third-party administrator (TPA) to provide billing, establish eligibility, manage the payment process, and adjudicate claims. Such administrators effectively aggregate the connections between the employer and providers. Figure 3 illustrates the role that the TPA plays in aggregating data flow to and from healthcare providers.



The inclusion of a TPA does help to aggregate and centralize the clinical data necessary for billing. However, it also means that the TPA, as an established industry player, has access to many employers with potential ePHR users. In this position, TPAs have more power to leverage the creation of a market for ePHRs, as they own the relationships with the employers. Nevertheless, this requires TPAs to develop or acquire new resources and capabilities, and to engage in a whole new set of activities that may not be well aligned to their core business. Alternatively, it offers a business opportunity for specialized firms that have the unique resources and capabilities that are required to offer these services to the marketplace. Thus, the issue of ePHR development and deployment for entrepreneurial firms quickly becomes an issue of organizational boundary formation, and the demarcation of specialized activities within a complex healthcare ecosystem. To develop this broader view on organizational boundaries, we turn in the next section to prior literature that will help us adopt this important perspective.

Method: Engaged Scholarship Approach

This longitudinal case study investigation will leverage our collaborative relationship with key stakeholders of the focal firm, XYZ Health (based in the southeastern United States), to follow the development and deployment of Insight, an ePHR system. XYZ was interested in collaborating with us to get an outsiders perspective on their existing and future strategies, and to help make sense of the complicated healthcare context. One of the authors has significant experience in the area of technology and innovation management, and therefore worked closely with XYZ over a two year period to help them work through their business challenges. Additionally, the other author worked to make sense of the situation through ongoing feedback sessions with his co-author, and then played an important role in identifying emerging patterns and linking findings to relevant theory. By dividing the roles in this way we were able to instill methodological rigor, thereby improving the validity and value of our findings (Eden and Huxham, 1996). In a collaborative fashion, the research team contributes theoretical understanding of boundary shaping theories and significant experience in case study research, while XYZ representatives contribute their insights on the industry, their organization, and the decisions they were making along the way. Due to the revelatory nature of our relationship with XYZ and the lack of extant work in this area, we chose an exploratory single-case design (Yin, 2003). We adopt an engaged scholarship research approach (Van de Ven 2007) to support our “problem driven” initiative, allowing us to study the phenomenon in its natural context. Figure 4 summarizes our data collection and analysis process. A more complete description of our methodology will be offered in the full-length version of this manuscript upon completion of the study.

Case Study Design

Our objective is gain an in-depth understanding of how a start-up firm negotiates and shapes its organizational boundaries, and how their decisions affect the efficacy of their ePHR development and deployment efforts. For this reason, we adopt an engaged scholarship research approach (Van de Ven 2007). Engaged scholarship is guided by

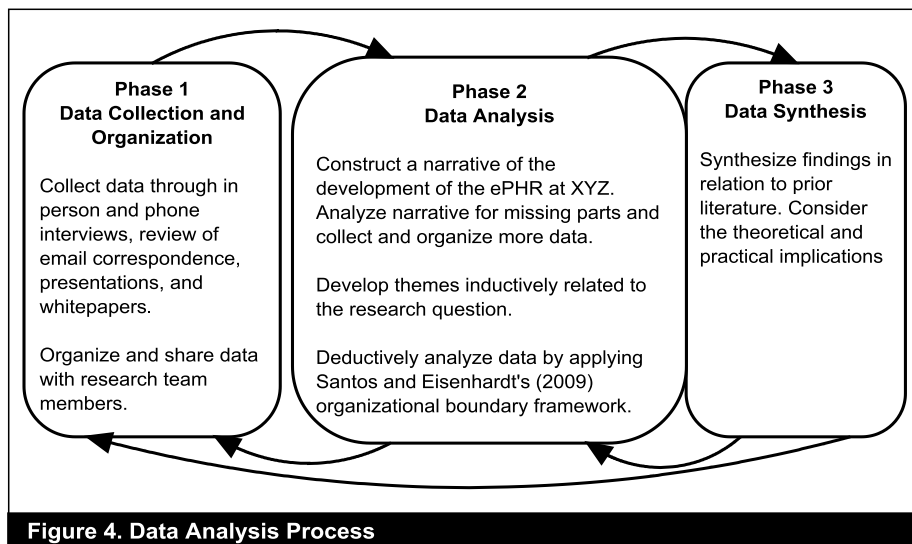
the need to study the phenomenon in its natural context and committed to bridging the gap between theory and practice. Furthermore, because this study explores how a start-up firm shapes its organizational boundaries against the backdrop of the fragmented healthcare ecosystem, the method employed fits well with delving deeply into the focal firm rather than broadly across the other firms within the network. We also adopt a process, rather than a variance, perspective to guide our study (Mohr 1982; Van de Ven 2007). As a result, we are interested in exploring, describing, and explaining the temporal sequence of events involved in change (Van de Ven et al. 1990). Due to the revelatory nature of our relationship with XYZ and the lack of extant work in this area, we chose an exploratory single-case design. According to Yin, the revelatory case exists when a researcher has a unique opportunity to observe and analyze a phenomenon that is characteristically inaccessible by a particular research community (Yin 2003).

Data Collection

To understand the phenomenon more fully and to ensure adequate validity of the research findings, we are leveraging multiple collection techniques and data from different sources (Miles et al. 1994; Yin 2003). A significant amount of data has already been collected, and stems primarily from weekly and bi-weekly semi-structured phone interviews over a two-year period with the chief architect of Insight, and from the analysis of documentation and archival records, including confidential emails, PowerPoint presentations, white papers, and media interviews from other key members of XYZ. Since the focal firm is a small startup firm, having access to a single informant that is integrally involved in developing the strategic and technological direction of the firm provides unique opportunities. Follow-up interviews and validation with other members of XYZ will also be used to confirm our findings. To date, over 100 semi-structured interviews have taken place, 175 emails have been analyzed, and more than ten media interviews from top leadership within XYZ have been collected and analyzed.

Data Analysis

We leverage a hybrid analytical technique to analyze the data, incorporating both inductive and deductive coding and thematic development procedures (Chiasson et al. 2009; Fereday et al. 2006). This dual approach can be extremely rich, as it allows creative insight to be generated from the data without the need to reinvent valuable concepts that already exist in the literature (Denis et al. 2001; Fox-Wolfgramm et al. 1998). The hybrid approach is particularly useful in novel settings for which extant work is limited; it allows us to begin the analytical process by working from the data and enables us to move from specific detail to more general conclusions (Schwandt 1994). More specifically, our analysis will follow a three-phase approach depicted in Figure 4. The authors meet repeatedly in recap sessions to discuss and analyze major themes that are emerging. To determine key themes, saliency (Blatt et al. 2006) and contextual interpretation (Stake 1995) of the significance of events, actions, or viewpoints are used as explanatory factors rather than frequency.



Preliminary Findings

As mentioned, the TPA is the nexus of the data required to populate Insight. This notion is recognized by Miller et al. (2009) when they note that claims and billing players have the best source of complete data. Trying to get all of the necessary patient data from the providers separately (clinics, hospitals, doctors, labs, etc.) is an enormous data integration and interface challenge without regional and/or a national health information infrastructures in place. As Table 3 describes, we have noticed three distinct phases that XYZ has traversed in their early journey to become a leader in the ePHR market. Within these phases, attempts to adjust the organizations boundaries through claiming, demarcating, and controlling the market have occurred. However, adjustments to the organizational boundaries have led to corresponding implications to the development and deployment success of the ePHR. Despite some early accomplishments, XYZ is seen to suffer the consequences of broadening their boundaries and, in turn, they experience negative effects related to resource accessibility, scalability, and channel suitability.

These early findings highlight the potential of this study to lower the microscope on the deployment of innovative IT applications in an industry that relies on an inter-connected web of firms and experts. While prior work has indicated that, “successful entrepreneurs in nascent markets adopt a strategic approach to shaping organizational boundaries” (Santos and Eisenhardt 2009, p. 648), preliminary findings indicate that there are apparent consequences to issues of resource appropriation that results from any attempt by the focal firm to shape their own boundary or to conform to an existing collaborator’s boundaries. Another emerging point of departure is that while Santos and Eisenhardt observed that entrepreneurs “enact [a] monopolistic imperative” (2009, p. 648), we observe that XYZ operates with more of a cooperative and survival strategy as a result of resource constraints that are typical of most entrepreneurial firms. Part of these results may result from the difference between the network for developing and deploying ePHRs and the context that Internet startups faced. By exploring not just the single entrepreneurial firm, we hope to identify more crisply the way in which boundary shaping emerges over time within the fragmented health care industry. Furthermore, we hope to examine how boundary decisions shape the overall orchestration of disparate players that participate in the fragmented healthcare ecosystem and that must work together in some way to develop sophisticated ePHR solutions.

Conclusion and Next Steps:

This research-in-progress paper reports on an in-depth case study that is exploring how an entrepreneurial firm shapes its organizational boundaries in the complex healthcare ecosystem, and it investigates the implications of these boundary shaping decisions on the development and deployment of an ePHR solution. The growing call for the use of ePHR solutions is based on the logic that providing personalized, timely healthcare information that supports an incentive-based compliance program will not only lower healthcare costs but lead to healthier individuals and improved organizational performance. However, populating ePHR applications is a complex integration challenge that requires coordination of many players with potentially competing objectives. In continuing this study, we seek to develop a deeper understanding of the causal relationships between boundary spanning decisions and an entrepreneurial firm’s ability to play data aggregator in this critical industry.

Table 3. Analytic Process View of XYZ Health Strategy

	Phase 1	Phase 2	Phase 3
Strategic Logic	<i>Strategic Vision:</i> Design and manage innovative healthcare plans to help drive down total costs for an organization by shaping new and healthier behaviors.		
	Deal directly with employer Provide scalable ePHR technology for Employers	Market as add-on for TPAs existing customers Focus only on TPA relationship	Search for multiple value chain opportunities Insight (ePHR) is a Platform Technology
Claiming the Market	Leveraged existing relationships that the founder had with a clinic as expert in health plan design.	Leverage existing relationship with TPA developed in phase 1.	Explore multiple marketplace relationships with TPAs, other third-parties, and directly with employers.
Demarcating the Market	Established an outsourcing relationship with the TPA.	Develop agreement with TPA to resell ePHR (Insight) at a discount if they continue to sign up employers to use the ePHR.	Continue agreement with TPA to resell ePHR and try to develop other agreements with a Disease Management company.
Controlling the Market	Block other ePHR entrants by being the direct link to the self-funded employer.	Increase coverage of many employers by focusing on existing relationships that TPAs have with employers.	Increase coverage to others that work with self-funded employers.
Relational View			
Summary of Consequences	<p>IT development focuses on core application features for employees (e.g., underlying rules-based engine + communication modules) and employers (e.g., aggregated views of data)</p> <p>Managing the employer relationship directly requires additional resources to deal effectively with the TPA and meet employer's needs.</p>	<p>In order to incentivize and add value to TPAs using ePHR, XYZ develops a hierarchical reporting interface to the ePHR.</p> <p>Scalability is more difficult because each TPA requires customized interface to the ePHR.</p> <p>XYZ recognizes that TPAs are in a commodity business (cost-focused) with employers, and they have little incentive to innovate or risk.</p> <p>Ultimately, XYZ was not able to co-opt the TPA as a partner.</p>	<p>IT development focuses on building on many IT capabilities – for example, they build a disease management interface but the deal never materializes.</p> <p>Scalability depends upon the relationship (e.g., TPA, other third-parties, or employer)</p>

References

- Baum, L. C. and I. E. Dutton 1996. "Introduction: The embeddedness of strategy," *Advances in Strategic Management* (13pp. 1-15).
- Blatt, R., M. K. Christianson, K. M. Sutcliffe, and M. M. Rosenthal 2006. "Sensemaking Lens on Reliability," *Journal of Organizational Behavior* (27pp. 897-917).
- Blumenthal, D. and J. P. Glaser 2007. "Information technology comes to medicine," *The New England Journal of Medicine* (356) 24, pp. 2527-2534.
- Cebul, R. D., J. B. Rebitzer, L. J. Taylor, and M. E. Votruba 2008. "Organizational Fragmentation and Care Quality in the U.S. Healthcare System," *Journal of Economic Perspectives* (22) 4, pp. 93-113.
- Chaudhry, B., J. Wang, S. Wu, M. Maglione et al. 2006. "Systematic Review: Impact of Health Information Technology on Quality, Efficiency, and Costs of Medical Care," *Annals of Internal Medicine* (144) 10, pp. 742-752.
- Chiasson, M., M. Germonprez, and L. Mathiassen 2009. "Pluralist Action Research: A Review of the Information Systems Literature," *Information Systems Journal* (19) 1, pp. 31-54.
- Cho, S. and L. Mathiassen (2007) "The role of industry infrastructure in telehealth innovations: a multi-level analysis of a telestroke program," *European Journal of Information Systems* (16pp. 738-750).
- CMS (2009) National Health Expenditure Projections 2008-2018, pp. 17: Centers for Medicare and Medicaid Services.
- D'Aveni, R. (2001). *Strategic Supremacy*. The Free Press, New York.
- Denis, J. L., L. Lamothe, and A. Langley 2001. "The dynamics of collective leadership and strategic change in pluralistic," *The Academy of Management Journal* (44) 4, pp. 809-837.
- DeSanctis, G. and M. S. Poole 1994. "Capturing the complexity in advanced technology use: Adaptive Structuration Theory," *Organization Science* (5) 2, pp. 121-147.
- DeVol, R. and A. Bedroussiant 2007. *An Unhealthy America: The Economic Burden of Chronic Disease*. Miliken Institute.
- Dutton, J. E., J. M. Dukerich et al. 1994. Organizational Images and member identification, *Admin. Sci. Quarterly*. 39(2) 239-263.
- Eden, C., & Huxham, C. 1996. Action research for management research. *British Journal of Management*, 7: 75-86.
- Fereday, J. and E. Muir-Cochrane 2006. "Demonstrating Rigor Using Thematic Analysis: A Hybrid Approach of Inductive and Deductive Coding and Theme Development," *International Journal of Qualitative Methods* (5) 1, pp. 15-32.
- Fox-Wolfgramm, S. J., K. B. Boal, and J. G. Hunt 1998. "Organizational adaptation to institutional change: A comparative study of first-order change in prospector and defender banks " *Administrative Science Quarterly* (43) 1, pp. 87-126.
- Gnyawali, D. R. and R. Madhavan 2001. "Cooperative Networks and Competitive Dynamics: A Structural Embeddedness Perspective," *Academy of Management Review* (26pp. 431-445).
- Gulati, R., N. Nohria, and A. Zaheer 2000. "Strategic networks," *Strategic Management Journal* (21) 3, pp. 203-215.
- Helfat, C. E. 1997. Know-how and asset complementarity and dynamic capability accumulation: The case of R & D. *Strategic Management Journal*. 18(5) 339-360.
- Iyasu, S. and H. K. Atrash 2003. Prevention for Health, in 2nd edition H. M. Wallace, G. Green, and K. J. Jaros (Eds.) *Health and welfare for families in the 21st century*, Boston: Jones and Bartlett.
- Kaiser. 2009. *Kaiser 2009 Employer Health Benefits Annual Survey*. The Henry J. Kaiser Family Foundation and The Health Research and Educational Trust.

- Laumann, E., P. Marsden, and D. Prensky 1983. The boundary specification problem in network analysis, in R. Burt and M. Minor (Eds.) *Applied Network Analysis*, Beverly Hills, CA: Sage, pp. 18-34.
- Levina, N., and Vaast, E. 2005. "The Emergence of Boundary Spanning Competence in Practice: Implications for Implementation and Use of Information Systems," *MIS Quarterly* (29:2), pp 335-363.
- Loeppke, R. 2008. "The value of health and power of prevention," *International Journal of Workplace Health Management* (1) 2, pp. 95-108.
- McEvily, B. and A. Zaheer 1999. "Bridging Ties: A source of firm heterogeneity in competitive capabilities," *Strategic Management Journal* (20pp. 1133-1156.
- Miles, M. B. and A. M. Huberman 1994. *Qualitative Data Analysis: An Expanded Sourcebook*. Newbury Park, CA: Sage Publications Inc.
- Miller, H. D., W. A. Yasnoff, and H. A. Burde 2009. *Personal health records : the essential missing element in 21st century healthcare*. Chicago, IL: Healthcare Information and Management Systems Society.
- Mohr, L. B. 1982. *Approaches to Explanation: Variance Theory and Process Theory, Chapter 2 in Explaining Organizational Behavior*. San Francisco: Jossey-Bass.
- Ogden, C., M. Carroll, L. Curtin, M. McDowell et al. 2006. "Prevalence of overweight and obesity in the United States," *Journal of the American Medical Association* (295) 13, pp. 1549-1555.
- Pfeffer, J. and G. Salancik 1978. *The External Control of Organizations*. New York: Harper.
- Poole, M. S., A. H. Van de Ven, K. Dooley, and M. Holmes 2000. *Organizational Change and Innovation Processes: Theory and Methods for Research*. New York: Oxford University Press.
- Santos, F. M., K. M. Eisenhardt. 2005. Organizational Boundaries and Theories of Organization. *Organization Science*. 16(5) 491-508.
- Santos, F.M., K.M. Eisenhardt. 2009. Constructing Markets and Shaping Boundaries: Entrepreneurial Agency in Nascent Fields. *Academy of Management Journal* 52(4) 643-671.
- Schwandt, T. A. 1994. *Constructivist, Interpretivist Approaches to Human Inquiry*. Thousand Oaks, CA: Sage Publications.
- Shekelle, P. G., S. C. Morton, and E. B. Keeler. 2006. *Costs and Benefits of Health Information Technology*. Agency for Healthcare Research and Quality.
- Stake, R. E. 1995. *The Art of Case Study Research*. Thousand Oaks: Sage Publications.
- Strange, K. C. 2009. "The Problem of Fragmentation and the Need for Integrative Solutions," *Annals of Family Medicine* (7) 2, pp. 100-103.
- Tang, P. C., J. S. Ash, D. W. Bates, J. M. Overhage et al. 2006. "Personal health records: definitions, benefits, and strategies for overcoming barriers to adoption," *Journal Of The American Medical Informatics Association* (13) 2, pp. 121-126.
- Thompson, J. D. 1967. *Organizations in Action*, McGraw Hill. New York.
- Van de Ven, A. H. 2007. *Engaged scholarship : a guide for organizational and social research*. Oxford ; New York: Oxford University Press.
- Van de Ven, A. H. and G. P. Huber 1990. "Longitudinal Field Research Methods for Studying Processes of Organizational Change," *Organization Science* (1) 3, pp. 213-219.
- Wasserman, S. and K. Faust 1994. *Social Network Analysis*. Cambridge: Cambridge University Press.
- Weick, K. 1995. *Sensemaking in organizations*. Thousand Oaks, CA: Sage.
- WHO 2009. History of the development of the ICD, pp. 1-10: World Health Organization.
- Wilcox, A., G. Kuperman, D. A. Door, G. Hripcsak et al. 2006. Architectural Strategies and Issues with Health Information Exchange. *AMIA Symposium Proceedings, Washington, D.C., 2006*, pp. 814-818.

Williamson, O.E. 1981. "The Economics of Organization - the Transaction Cost Approach," *American Journal of Sociology* (87:3), pp 548-577.

Yin, R. K. 2003. *Case Study Research: Design and Methods*, 3rd edition. Vol. 5. Thousand Oaks, CA: Sage Publications.