

Deconstructing symbiotic dyadic e-health networks: Transnational and transgenic perspectives

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Abstract

The 21st century continues to witness the transformation of organizational systems globally through the deployment of Information and Communication Technologies (ICT). The health care sector is no exception to the inter-organizational dynamics driven by ICT innovations, such as artificial intelligence, biotechnology, nomadic information systems and nano-technology. This study explores inter-sectorial informational network dynamics by extending Zhu's Wu-Shi-Ren (WSR)-Li framework into the Realpolitik of e-health systems transnationally. This key informant study of the perceptions of inter-sectorial executives engaged in evolving symbiotic dyadic e-health networks in Canada, Germany, Sweden and the United Kingdom appears to support Zhu's WSR-Li model. A key finding of this study is that relational and transactional capital and transformational competencies are essential to the evolution of such e-networks, but they are not sufficient. These components must transcend the boundaries of the dyadic e-networks to engage and integrate transcendent forces in the form of public governance agents rooted in larger socio-political environments. In effect, information system professionals must acquire transcendent knowledge and skill sets to engage the "transgenic" forces, or key socio-political elements, that are critical in evolving inter-sectorial e-networks. Engaging and co-opting these transgenic forces appears to be particularly important in national health care systems, where public governance is a key socio-political value. This underscores the need for further research to explore how transgenic forces influence the evolution of a range of ICT systems inter-sectorially in different socio-political environments.

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1. Introduction

The 21st century continues to witness the transformation of organizational systems globally through cogent and ubiquitous advances in knowledge management systems, nomadic information systems and wearable technologies, as well as the convergence of artificial intelligence, biotechnology and nano-technology (Orlikowski & Iacono, 2001; Pearson, 2001). Advances in business intelligence systems, data mining, knowledge management, systems integration and security systems continue to compel different sectors to engage in challenging inter-organizational relationships (Senge, Carstedt, & Porter, 2001). Symbiotic dyadic partnerships, with characteristics of longevity, management control and direction, mutual

beneficence and stability, exemplify one type inter-organizational relationship. The literature underscores the critical role of symbiotic inter-sectorial networks in fostering economic efficiencies, sectorial growth and social actualization through innovation and mutual organizational learning (Burgelman & Doz, 2001; Etemad, Wright, & Dana, 2001; Kodama, 2001; Oliver, 2001; Robinson, Savage, & Campbell, 2003). Moreover, inter-sectorial linkages have the potential to liberate thinking beyond closed organizational paradigms and to embrace complex systems changes and uncertainty (Dickson, Farris, & Verbeke, 2001).

With 21st century technological innovations and advances, the health care sector is no exception to dynamic inter-organizational transformations. Integrated e-health networks promise less regional resource duplication, lower health care operational costs, reduced clinical waiting times, shorter lengths of stay and greater quality care in the

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face of pressing care provider and clinician shortages. Symbiotic e-health networks continue to be the transformational wave in health care systems internationally (Adewale, 2004; Sahney, 2003). Health care executives have yet to fully understand the transformational power of Information and Communication Technologies (ICT) to promote delivery efficiencies and enhance quality of care through inter-organizational interactions. This paper posits a conceptual model based on a key informant study of perceptions of international ICT and health care executives of the pragmatic issues in evolving symbiotic dyadic e-health networks. The study findings and implications underscore future directions for information management research transnationally.

2. Inter-sectorial dyadic relationships: generic and theoretical perspectives

This paper posits that strategic partnerships are, in essence, symbiotic information networks. These e-networks are systems of interconnected individuals and organizations through which informational and resources flow (Ford, Wells, & Bailey, 2004). They create mutually advantageous inter-organizational systems with informational cultures that differ in missions, goals, perceptions and fundamental values. In essence, symbiotic e-networks evolve through the interaction of complex management and technical processes. This perspective underscores the importance of a pluralist epistemology, where the emphasis is on an understanding “of-the-becoming”, or “the evolution of” and not what should be (de Rond & Bouchikhi, 2004). When dyadic e-networks interact inter-sectorially, exchanges of informational, relational and transactional capital occur. Transactional and transformational processes are articulated through skill sets of system agents, or executives. Thus, the inter-sectorial coupling of symbiotic e-networks occurs when relational and transactional capital is leveraged through transactional and transformational skill sets.

Organizational and national cultures are critical heterogeneous elements that determine the dynamic evolution of e-networks (Townsend, 2003). Indeed, inter-sectorial symbiotic dyadic e-networks incubate, thrive and grow in meta-cultural information domains and socio-political environments. If relational and transactional capital resources are insufficient, or if transactional and transformational skill sets of system agents are weak, external politics and forces come into play to foster, drive and leverage these evolving e-networks. In effect, the politics, or socio-political elements, influence inter-sectorial network behavior and integrate elements of trust within economic and socio-political environments.

Management control factors implicitly form the basis for effective inter-sectorial symbiotic dyadic networks (Dyer, Prashant, & Singh, 2001; Judge & Ryman, 2001). Key control elements include: leadership, strategic and operational planning processes, feasibility studies, cost–benefit

analyses, stable and innovative financing and performance metrics. Effective symbiotic dyadic e-networks require inter-sectorial mutual understanding of organizational models, motivations, priorities, resource strengths and limitations, explicit benefits, expectations, priorities and the sharing of financial and political risks (Das & Teng, 2001). Relational capital, such as mutual trust, promotes climates of good faith, open collaboration and result in congruence of goals and structured accountabilities. Structural bonding, including economic and functional factors that involve explicit benefits, and social bonding, including emotional and affective resources, are prerequisites to relationship cohesion and trust (Rodriguez, 2002).

Positive perception, mutuality and trust drive organizational behavior and the evolution of symbiotic dyadic e-networks. This points to the critical need to understand inter-sectorial cultural and organizational climates (Currie & Galliers, 1999). Zhu’s Wu-Shi-Ren (WSR) Li-stage model provides an integrated framework for conceptualizing these dynamics. According to this framework, perspectives, sensing and the psycho-cognitive elements (Shi-Li) interact synergistically with socio-political structures (Ren-Li) to release technical resources (Wu-Li) (Zhu, 2001). “Sensing and caring” transform the “knowing” (Zhu, 2002).

In the light of Zhu’s WSR-Li model, this paper explores inter-sectorial symbiotic dyadic e-networks in the Realpolitik of e-health systems transnationally. In particular, the proposed model in this study centers on symbiotic e-network dimensions, which are not explicitly reported in the extant literature.

These include the extent to which each to effect symbiotic e-networks for each of the following:

1. *Relational capital (Shi-Li) dimension*: Inter-sectorial agents harmonize perceptions, values and motivations in an atmosphere of trust and benefit.
2. *Transactional capital (Wu-Li) dimension*: Inter-sectorial agents effectively avail and access mobilize resources.
3. *Transformational skills (Ren-Li) dimension*: Inter-sectorial agents exercise vision and strategic leadership.
4. *“Transgenic” (Supra-Ren-Li) dimension*: External agents engage, enable and sustain such e-networks through external transactional capital and transformational skills.

This fifth dimension extends Zhu’s WSR-Li framework to a socio-political structure external to the dyadic relationship. Moreover, it is posited that this dimension is a particularly potent “transgenic” or transcending, or “supra-Ren-Li” force that underscores the importance of the socio-political context in which dyadic e-networks have their existence and evolve. Further to Zhu’s WSR-Li model, Fig. 1 proposes a transgenic symbiotic e-network model.

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