Chapter 6
Toward an Understanding of Online Community Participation through Narrative Network Analysis

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ABSTRACT
This chapter proposes the narrative network analysis methodology for application in the examination of online communities. The narrative network analysis provides a basis for systematic examination of online communities that has been missing from the literature. The chapter describes three online communities and their characteristics to demonstrate the possibilities of the methodology. From these descriptions a proposed model of the communities is presented, and then an abbreviated narrative network analysis is developed. The network analysis demonstrates how an ethnographically informed model may be tested in a systematic manner with the narrative network analysis techniques. The chapter then concludes with a number of questions for future research in this area that have been proposed by other authors. These unanswered questions are likely candidates for future research using this promising methodology.

INTRODUCTION
Online communities are not a particularly new phenomenon in our rapidly changing technological landscape. Studies of the effectiveness of predecessors to the current communities precede the widespread acceptance of the world-wide web by over 20 years (Timm, 1976). Nevertheless, the ubiquitous adoption of graphical user interfaces in the early 1990s and the acceptance of the internet and world-wide web for mainstream communications in the mid-1990s created online communities of unprecedented significance (Horrigan, Rainie, & Fox, 2001).
Today’s online communities are often comprised of thousands of members with multidimensional online identities, rich communication media, and complex social norms. These communities developed over time through the dynamic interaction of the members and evolved along distinct paths that influenced the subsequent interactions of the community, despite the constant ebb and flow of the membership (Rheingold, 1993). Just as traditional organizations seek to adapt to the community in which they operate, contemporary organizations will need to adapt to the dynamics of these new online communities through outreach, participation, and development. Despite these needs, online communities are difficult to study and the field is still emerging. Initial work was largely based on anecdotal evidence (e.g. Wellman & Gulia, 1999) and some authors have noted the slow development of empirical research (Kim, Choi, Qualls, & Han, 2008). More recent works in the field have adopted a variety of methodologies to explore the dynamics of online communities. These include surveys (Byoungho, Park, & Kim, 2010; Hung, Yiyan Li, & Tse, 2011; Yen, Hsu, & Chun-Yao, 2011), interpretive qualitative analyses (Jayanti & Singh, 2010), mixed methods (Benlian & Hess, 2011), and netnography (Kozinets, 2002, 2006).

The aim of this paper is to present a relatively new research methodology, narrative network analysis, which may help researchers better understand online communities more fully. Although the concept of narrative networks was developed several years ago by Pentland and Feldman (2007) and has wide applicability, the method has not been utilized extensively. In fact, only one published article applying the techniques outlined by Pentland and Feldman can be found currently (Yeow & Faraj, 2011). Ultimately, the goal of this paper is to present an example of the application of the methodology to the study of online communities and thus extend research in this area that allows modern organizations to leverage the social and economic potential of these dynamic virtual networks.

**THE EMERGENCE OF ONLINE COMMUNITIES**

Online communities have developed over the past decade as an emergent internet phenomenon, largely created by the user community through incremental development processes (Baym, 1998; Rheingold, 1993). These groups are not randomly assigned the nomenclature of community without cause. As mentioned earlier, these online forums operate as virtual communities with many of the same characteristics of a traditional community such as moral voice, rights, responsibilities, and a public interest (Etzioni, 1993). Technological, sociological and economic forces have contributed to the emergence of online communities in the last decade.

The technological forces that contributed to this online phenomenon revolve around the development of the internet and World Wide Web and the adoption of graphical user interfaces. Early online communities adopted the simple text-based user interfaces of the time due to the limited bandwidth and processing capabilities of existing information communications technologies (ICTs) (Timm, 1976). The introduction of the Netscape Navigator internet browser in the mid-1990s and the penetration of broadband communication channels into the market in the late 1990s allowed more complex communities to develop. The communities became very specialized and the social identities of the members were quite well developed (Koh, Kim, Butler, & Bock, 2007).

These multifaceted communities emerged partly because ICT developments enabled a richness of communication not available in early e-mail groups and bulletin boards. Scholars were well-acquainted with the concept of media richness during this period, but did not quite anticipate the consequences of these emergent technologies. Daft and colleagues proposed a static classification scheme of media richness which consisted of face-to-face communication at the top, followed by telephone communication, personal documents,
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