Towards an Interdisciplinary Socio-Technical Definition of Virtual Communities

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INTRODUCTION

Originally defined as *"social aggregations on the Internet"* (Rheingold, 1993), virtual communities (VCs) refer to interactive online spaces that can potentially enable high levels of information sharing, communication, and social interactions among their members. VCs can also be described as computer supported social networks (Garton, Haythornthwaite, & Wellman, 1997) or *"gathering spots"* on the Internet where individuals and organizations can share common interests and meet differentiated user needs and wants (Baim, 2006).

Since their earliest inception, VCs have been recognized as an important facet of the digital economy, and as a critical success factor for e-Commerce (Figallo, 1998; Hagel & Armstrong, 1997; Preece, Abras, & Maloney-Krichmar, 2004; Ridings & Gefen, 2004). VCs can potentially provide value to their individual members and sponsoring organizations through a variety of internal-facing business applications, such as knowledge sharing and organizational learning, as well as external-facing online activities, such as the provision of commercial and government services (Bughin, 2007; Lee & Suh, 2015; Mačiulienė & Skaržauskienė, 2016; Petouhoff, 2009).

Due to the wide-ranging use-cases and potential benefits of VCs, they have been a subject of study in many academic disciplines, including sociology, psychology, management, communication, computer science, and information systems. The objective of this chapter is to examine various streams of research that have studied VCs, and to facilitate the reader's understanding of VCs through an explanation of their underlying concepts and their fundamental properties. Toward this, the chapter specifically reviews the discourse on VCs in research fields adopting a socio-technical lens of analysis, and proposes a socio-technical definition of VCs.

The discussion in this chapter starts with a characterization of VCs from an information systems perspective. This is followed by a brief synopsis of research fields that have form the basis of socio-technical investigations of VCs. Finally, the chapter reviews literature domains that draw upon these research fields and cites seminal definitions from these domains to deliberate and propose an interdisciplinary socio-technical definition of VCs.

Within the various disciplines that study VCs, many researchers often use the terms virtual communities, online communities, web communities, cyber communities, electronic communities and e-communities interchangeably to refer to the same phenomenon (Jones & Rafaeli, 2000; Schoberth, Preece, & Heinzl, 2003). For purposes of this review, our survey of literature includes research that has been conducted surrounding these various notions of VCs. Furthermore, this chapter uses the terms virtual communities and online communities interchangeably.

BACKGROUND

Despite the absence of an agreed upon definition of VCs across research studies, the presence of a technology platform that facilitates interactions

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Table 1. Virtual community attributes as elements of an IT artifact

Defining Elements of an IT Artifact	Examples of Attributes of Virtual Communities
Information & Communication Technologies	■ Websites and portals hosting the virtual community ■ Groupspace platforms such as social networks, discussion forums, blogs, wikis, mailing lists, newsgroups. ■ Communication tools such as instant messaging and interactive chat applications
Tasks	■ Information exchange in the form of sharing knowledge, asking and answering questions, providing commentary, and collaborating on new content ■ Social interactions in the form of networking with other members, forming relationships, and seeking and providing emotional support
Task Structures	■ Administrative policies and controls ■ Interaction norms and etiquette ■ Technology usability and accessibility ■ Scope of information exchange and social interaction (diverse/narrow) ■ Extent of participation (active/passive)
Task Context	■ Member motivations and interests ■ Membership duration ■ Self-efficacy in technology use and personal knowledge and expertise ■ Member trust levels and sense of community

among members is considered to be a main characteristic of online communities (Donath, 2005; Preece, 2001a; Preece, 2001b). Various information and communication technologies (ICTs) can be used in VCs – including, websites, computer networks, email lists, Usenet newsgroups, discussion forums, Internet chat applications, and networked databases (Coon, 1998; Lapachet, 2001). Additionally, modern technology platforms such as social networking sites, weblogs (popularly known as blogs) for user generated content, and wikis for online collaboration have also been considered in the list of potential technologies that can spawn a VC (Blanchard, 2003; Brailas, Koskinas, Dafermos, & Alexias, 2015; Buss & Strauss, 2009 ; Mačiulienė & Skaržauskienė, 2016). These various technology platforms and their underlying features and functions that enable VCs have been studied by information systems (IS) researchers over a long time. In this section, we offer a characterization of VCs from an IS perspective.

IS research can be considered as the study of the effective use of ICTs and their potential impact on human, organizational, and social world (Gregor, 2006; Hirschheim & Klein, 2003; Khazanchi & Munkvold, 2000). At the theoretical core of IS research is the concept of an *IT artifact*, which refers to ICTs that act as enabling infrastructure for people and organizations in driving their individual activities and business processes, and ultimately affecting their overall performance and satisfaction levels (Bacon & Fitzgerald, 2001). In viewing VCs as IT artifacts, we adopt Benbasat & Zmud's (2003) normative perspective of the field of IS, and their delineation of the scope of IS research as relating to the IT artifact's immediate nomological network (capabilities, perceptions, uses, practices, behaviour, and impacts linked to the IT artifact). Using this orientation, VCs can be examined in terms of their underlying ICTs and their use by members, while also considering the context and structure of tasks embedded within the VCs and performed by their members. To illustrate the conceptualization of VCs as IT artifacts, Table 1 provides examples of attributes of VCs that align with the defining elements of IT artifacts.

Based on the conceptualization of VCs as IT artifacts, it can be seen that the task structure and task context elements of the IT artifact have a strong sociological basis. To effectively address this dual sociological and technological nature of the IT artifact pertaining to VCs, a socio-technical perspective has been strongly recommended in academic research (Dannecker,