# Chapter 4.22
# Technology Change and Online Community Development

**Mark G. Elwell**
*Japan Advanced Institute of Science and Technology, Japan*

**Tunç D. Medeni**
*Japan Advanced Institute of Science and Technology, Japan*

## INTRODUCTION

Online communities are increasingly seen to display the same features accepted as characteristic of communities based on face-to-face interaction. Among the characteristics of "real," "normal" communities is the ability to grow and thrive by evolving and adapting to, for example, changes in technology and infrastructure. Our experience in online gaming communities also demonstrates this same ability to evolve and adapt to technological and infrastructural changes.

One online community that began in 1991 and continues to "live long and prosper" began in conception as a role-playing game called Starfleet and is now described as a shared fiction or collaborative writing group. Set in a fictional universe based on that of the television program "Star Trek: The Next Generation," this group moved from the Prodigy online service onto Usenet in 1994 (it is still known by its newsgroup name, "alt.starfleet.rpg"), and by 2000 had established a Web-based Yahoo! Group (http://groups.yahoo.com/group/starfleet-rpg/), which continues to be its means of functional interaction. Each of these hosting venues brought with it changes in the means (posts, direct e-mails, Web pages) by which game or collaborative writing activities were conducted. Parallel to these were changes in the rules, policies, and practices of the community. Even the nature and content of the social interactions of the members of the community changed in fundamental ways as its technological manifestation did so.

DOI: 10.4018/978-1-59904-885-7.ch213

In this chapter, we will demonstrate the relationship between changes in the technology by which the "Alt-Starfleet-RPG" (or "ASR") community conducted its activities and changes in the organizational and social interactions of its members. While we consider this relationship between changes in technology and social interactions with a perspective of knowledge technologies, we will draw on personal archives of the "posts" or installments of collaborative stories that comprise the focus of the community, conduct online interviews with participants in the various periods of its development, and draw on our own experience in the membership and administration of the organization and the social life of the community from 1995 to 1999.

Our hypothesis is that the technological venue of an online community strongly impacts the values it comes to express, and these in turn strongly impact the choices of technology made by and for that community. For testing this hypothesis, we will use case study research methodology for our inquiries into the Alt-Starfleet-RPG community, as a single embedded case (Yin, 1994). The rest of this article provides background information for knowledge technologies for a verifiable and evolvable trustworthy e-society; then, the case analysis of the Alt-Starfleet-RPG community as the main focus of the chapter; and discussion of future trends in research, before the conclusion.

## BACKGROUND: KNOWLEDGE TECHNOLOGIES FOR A VERIFIABLE AND EVOLVABLE TRUSTWORTHY E-SOCIETY

The e-society system refers to a part of a society that is implemented as an information system. Such a system, in addition to providing a clear definition of the relationship between an individual and the organization, as well as other aspects relating to the structure and functions of society systems, must also ensure that its functions and behavior conform to institutional and regulatory requirements. It must also be capable of keeping pace with social changes and other developments. Additionally, all the services and functions of an e-society must be available to all members equally, and be provided on a stable basis[1].

In this coming e-society where essential aspects of social life as such politics, economics, law, administration, medicine, and education will be computerized as information systems, a new discipline for using the latest developments in information science to implement a trustworthy e-society will be necessary, since (1) along with the beneficial developments, the deficiencies and imperfections of an e-society system will be potential sources of danger to our lives and property, and (2)"the difficulties inherent in changing systems could result in an inability to adapt to, and evolve with, changing social conditions," causing the society itself to become rigid and inflexible (ibid).

The latest advances in mathematical, software, artificial intelligence, and other information science technologies will contribute to creating a fundamental technology enabling the establishment of such a trustworthy e-society to deal with these deficiencies and difficulties. Developing a methodology for modeling the e-society system, logic verification technology could be used to "ensure that such a system meets the requirements of trustworthiness with regard to its correctness, accountability, security, and fault-tolerance," among others. Furthermore, a scientific methodology must be developed for ensuring that the e-society system can evolve and progress in accordance with social changes. The resulting research and education outcome could be considered as an emerging discipline that is concerned primarily with the realization of the e-society from the point of view of verifiability and evolvability, while contributing into the infrastructure of a trustworthy society so that we can safely entrust our lives in the coming e-society.