Humans gather to form groups or communities in order to accomplish certain individual or collective objectives. At the beginning of the 1990’s, the Internet provided the infrastructure for the formation of similar communities, the difference being that the meeting place is not physical but virtual: the Virtual Communities (VCs). People form virtual communities in order to achieve a certain aim, e.g. playing, chatting, discussing, researching, collaborating, etc. Chat rooms, bulletin boards, and email groups can be considered as virtual communities that allow people to gather and bond.

Virtual Communities vary in the technologies they use and their wide domain of applications. In the 1990’s mobility emerged in the telecommunication industry and had a remarkable impact of VC research; particularly on the design, the infrastructure to use, the services to offer, the user interface, the security as well as the privacy of the users.

With the growth of communication technology, the emergence of multi-partner global organizations, the increase in dynamic teams formation, the rise of teleworking, and the pervasive or ubiquitous nature of computing, Virtual Communities are to play an significant role in organizations and will undoubtedly change the way people communicate and collaborate; indeed, the information society we live in depends, in a great part, on the way the information is exchanged between collaborating groups and individuals.

In this context, Virtual Communities appears to be one of the main aspects of the information society, and there is a need to define the technologies, methodologies, and tools for the collection, management, exchange and use of information within Virtual Communities and to understand the social and political aspects involved in them.

In the recent years, Virtual Communities received a visible level of attention from the research community in many disciplines: Computer Science, Sociology, Psychology, and other disciplines. Today Virtual Communities are a well-recognized emergent domain of research and development. Its research scope is broad it covers different research domains (e.g. computer science, psychology, sociology) and applications (e.g. leisure, tourism, education, health). This book addresses the latest issues involved in creating, monitoring, stimulating Virtual Communities as well as studying some of cresponsiveness.

Traditionally, books that addressed the virtual communities’ topic are either an (obsolete) overview of the subject matter, or present a theoretical investigation and reflection on the topic. The books lend themselves to a more practical approach focus on one particular application of virtual communities, such as education, knowledge management, communities of practice, or information technology infrastructure. Other books focus on the social aspect of virtual communities or the possible business models that Virtual Communities offer.

Though, to the best of our knowledge, there are no books that deal with the different aspects of virtual communities theoretical and practical way, and that provides a solid knowledgeable introduction to this field of research and development, and provide at the same time a cutting edge insight into the latest aspects in research and development that reflect on the technology side as well as on the human side of virtual communities.
This book offers researchers interested in the Virtual Communities field, novice or experts, a place where they can find integrated knowledge about the different aspects of Virtual Communities, relieving them from seeking disparate scattered knowledge distributed among several books.

This book gives the reader an insight into the latest challenges and opportunities involved in Virtual Communities allowing a swift and concentrated overview of technical and societal aspects of the domain.

This book addresses two kinds of audiences:

1. On one side the researchers, Masters and PhD students, who are interested in the Virtual Communities domain and would like to have an in depth introduction to Virtual Communities. These can be academic or professionals from different disciplines and that have interest in pursuing research connected to Virtual Communities and that would like to get a knowledgeable introduction to the domain. To those the current book provides more than just a mere “introduction”, instead it gives them an overview of the different issues, revolving around Virtual Communities, related to both technical and social, such as computer infrastructure, community monitoring, information systems, security, privacy, identity, awareness, participation.

2. On the other side expert researchers in the domain, who would like to have an in depth analysis of the latest research findings and perspectives, as well as to the state-of-the-art know-how on the different Virtual Communities facets. For those expert researchers the current book does give them a holistic view of the Virtual Communities research field that allows them to broaden their understanding of the different factors (technical and societal) involved.

This book is a collection of chapters centered on the concept of virtual communities. We have grouped these chapters in 4 sections dealing respectively with Virtual Communities Creation, Monitoring, Stimulation (Participation and awareness), and Responsiveness (Semantic, Identity and governance).

Section 1: Creating Virtual Communities

Community designers will find in this section knowledge for the development of their virtual communities. This task requires a good understanding of background information, and numerous criteria must be considered for the emergence of such communities. Analyses and relevant illustrations are given in the three chapters belonging to this section.

Chapter 1 is titled Virtual Community Building and the Information Society: Current and Future Directions. Authors are El Morr, Maret, Dinca-Panaiteascu, Rioux and Subercaze. This chapter addresses the analysis, design and implementation of a virtual community for a group of users (such as researchers) that collaborate and have changing system requirements. Investigations into the life cycle model for the development of the virtual knowledge community have been conducted in the Disability Rights Promotion International Canada project and are presented in along this chapter.

Chapter 2 is titled The Creation and Management of Online Brand Communities, authored by Paola Falcone. The chapter intends to identify, describe and analyse the main issues concerning the creation and effective management of a specific type of virtual community: online brand communities. The chapter addresses a very contemporary and present topic with human, societal, marketing and economic dimensions.

Chapter 3 is written by Marianne Laurent and is titled Coordinating Nomadic Evaluation Practices by Supporting the Emergence of Virtual Communities. The chapter provides background information and
analysis on virtual communities in the perspective of online environments for knowledge management. The MPOWERS framework illustrates the chapter with concrete examples, offering a comprehensive environment for the emergence of communities of practice and communities of interest.

Section 2: Monitoring Virtual Communities

Contents, structures and user’s behavior within virtual communities constitute the raw material of the chapters in this section. Users are organized in networks and they share contents. Analysis on these emerging contents and structures provides additional knowledge that is useful to monitor the communities and to understand the sociology of formation online.

Chapter 4 is written by De Maggio and Grippa; It is titled An Integrated Methodology to Detect the Evolution of Virtual Organizational Communities. Authors propose and evaluate a methodology for the analysis of virtual communities operating in an organizational context. Structural and content analysis are combined to detect virtual communities’ overall composition, evolution and social structure. The methodology helps understanding the way new ideas spread within and across networks, and recognizing the emergence of informal roles.

Chapter 5 is called How E-Learning Experience Enhances the Social Presence in Community of Practice: An Empirical Analysis. It has been written by Bodea, Mogos and Dascalu. This chapter presents an empirical study that has been carried out to establish a correlation between the experience with e-learning environments and the presence in communities of practice. Results were obtained by use of questionnaires, statistics and data mining techniques. Authors prove, for instance, that the online activities with colleagues depend -much more than in classical learning situations- on the ones with the trainers.

Chapter 6 is written by Jensen and is titled Online Communities: A Historically Based Examination of How Social Formations Online Fulfill Criteria for Community. The author takes his point of departure in traditional sociological understandings and definitions of a community. He proposes a historical view and a discussion of ideas and practices of online social relationships featured with the specific affordances and limitations of Internet. It is argued that the social formation online should not be analyzed in the light of traditional, sociological understandings of traditional communities, but rather on a framework encompassing logics of networks.

Section 3: Stimulating Virtual Communities: Participation and Awareness

The reader will find in this section three chapters related to the development of functionalities for domain-specific virtual communities. These chapters describe and generalize advanced frameworks in collaborative on line laboratories, collaborative cultural text translation and collaborative design and simulation.

Chapter 7 is titled Functionalities and Facets of Group Awareness in Collaborative Online Laboratories and it is written by Gravier and Callaghan. This chapter deals with group awareness in the context of collaborative online laboratories. Classifications, facets, features and metaphors of several virtual, remote and hybrid laboratories are presented and discussed. Two case studies are presented in detail and conduct the authors to discuss about their practical experience and contribution on this specific field of Computer-Supported Collaborative Learning (CSCL).

Chapter 8 is written by Bénel and Lacour. It is titled Towards a Participative Platform for Cultural Texts Translators and presents -and discuss about- a participative web platform designed as a collaboration and debate place for the confrontation of different points of view around texts. Authors demonstrate
that virtual communities constitute a good paradigm to help human translators with both interpretative translation features and participation features.

Chapter 9 is titled *Virtual Communities in a Services Innovation Context: A Service Science and Mereotopology Based Method and Tool*, authored by Bugeaud and Soulier. Teams of innovators in the telecommunication companies form multidisciplinary design communities focusing on so-called service systems dedicated to end-users. These actors share some knowledge, visions, scenarios, etc. The authors propose a theoretical framework and a semi-formal semantic method for communities of innovators to co-describe, co-model and simulate the targeted services systems.

**Section 4: Responsive Communities: Semantic, Identity and Governance**

Collaboration in virtual communities requires an environment where a semantic is clarified, a definition of identity is shared, and governance is well understood. These topics are discussed in the next chapters: semantic models are used to link virtual communities; identification and self-verification are deeply discussed and impact the design of virtual communities; and governance aspects are depicted, showing the tension between freedom and control in communities.

Chapter 10 is titled *Semantically Linking Virtual Communities* authored by Akerkar and Terje Aaberge. The aim of this chapter is to give a background on the semantic modeling issues involved in linking virtual communities. The authors discuss the various approaches, techniques and standards that have to be dealt with when addressing this topic. A model semantically rich enough to accommodate the linking of virtual communities is proposed, clearly emphasizing the advantages for community members ensued.

Chapter 11 is written by Shen and is titled *Identification vs. Self-Verification in Virtual Communities (VC): Theoretical Gaps and Design Implications*. This chapter describes in depth identity-related concepts and theories. It provides a comprehensive review of the literature, comparing and reconciling the two theoretical perspectives in VC participation: identification and self-verification. Interesting areas for future research in this field are discussed, as well as practical implications for VC design.

Chapter 12, *Freedom, Control, Security: Current and Future Implications for Internet Governance* is written by Knahl and Cox. This chapter aims to develop a better understanding of the governance of Internet in order for the virtual communities’ members to be aware of technical and governance aspects to manage their communities. It is shown that the community governance is very much dependent from the trust the users have among them. Authors also clearly depict the tensions in-between freedom and control in the web, and between the horizontal and vertical control in the networks. The Botnets example illustrates the discourse.

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