Preface

“Our going back to the roots of phenomenology in order to restore the original notion of situatedness and compare it with the contemporary debate on situated action leaves us with three main research agendas. The first, leaning towards AI and cognitive science, states that situated action can be implemented through computer programs interacting with the environment and processing symbolic representations of what happens in the environment. The second, which claims to be an alternative grounded in the social sciences (phenomenology via ethnomethodology) is based on a social ecology of the mind: goals and plans are a vague guide to action. They must be complemented by the ad hoc improvisations of humans exploiting the circumstances and what the world offers at the moment of action. [...] Finally, we have Heidegger’s research program where the notion of situation includes at all moments the inner life of the actor, his or her mind and heart, and where any form of understanding is situated, meaning ‘affected. ’It is the pathos that characterizes the whole person in his or her situatedness in the world (Heidegger, 2002, p. 192).’ ” (Ciborra, 2006, p. 139)

INTRODUCTION

In February 2005, a composite group of scholars from different disciplines met in a nice Casa Rustica close to the Antica Vetreria on the Sarca River, at the entrance of Val di Genova, a small valley in the Italian Alps. It was the first of a series of events called Alpis: Alpine Ski Seminar on Information Systems. Since 2005, the purpose of that gathering of people has been to promote the social study of Information Systems in the Mediterranean region and the emergence of a European/Mediterranean identity for the scientific community on Information Systems. The Alpis ski seminar has been an “Institute des Hautes Études” with a ludic/sport component, where high quality contributions from young researchers in the field have been presented in four subsequent days of discussion with peers, in an environment enriched by contributions of established senior researchers. Both the format, promoting interaction and sociality, and the scientific dimension, promoting interdisciplinarity while maintaining a specific focus, have been the distinct trait of the Seminar series. According to the invitation of Claudio Ciborra and Gianni Jacucci—the Scientific Coordinators of the Alpis Ski Seminars first edition—the research on Information Systems being presented and discussed in the Alpis community has been characterized by the reference to philosophical inquiry and to phenomenology in particular. The aim of this book is to be an ‘ideal prolongation’ of the endeavour brought forward by the Alpis community to analyze the concepts, hypotheses, and research strategies proposed by the work of Claudio Ciborra. It will do so according to the following three directions:
• **direction 1**: how phenomenological concepts make it possible to recast the idea and the use of formal representations in computer programming;
• **direction 2**: what are the changes in the practices of planning, designing, and deploying information systems in the case of global Information Infrastructures implemented across multiple sites within large branch-plan organizational structures, and how do these changes challenge core assumptions embedded in received notions of phenomenology via ethnomethodology;
• **direction 3**: what are the consequences of the phenomenological orientation for the form of applied research which combines theory and practice, research and action for change; and what are the possible alternative modes of approaching action research in organizations.

This aims to provide relevant theoretical frameworks and the latest empirical research findings in the mentioned three research directions of Social Study of Information Systems. Furthermore, the overall mission of this publication is to keep alive one of the most valuable teachings of Claudio Ciborra: “addressing the cultivation of alternative modes of approaching organizations as benchmarks for information system research.” Values expressed in these words include pluralism and interdisciplinarity of scientific knowledge creation in the information systems research domain. This book proposal should be intended as a significant step towards that direction. The target audience of this book is composed of professionals and researchers working in the field of Organizations and Information Systems studies, especially those who are interested in a cross fertilization among different, yet complementary and strictly connected domains of scientific knowledge, consisting of information systems research, science studies, and organizational studies.

The book is structured in four sections: Phenomenology and Information Systems Research (Section 1); Phenomenology and IT Design (Section 2); Phenomenology and The Social Study of Information Systems (Section 3); and Phenomenology, Organizational Politics, and Organizational Design (Section 4). Each section is introduced by a dedicated section of the preface.

**ON THE RELATIONSHIP BETWEEN PHENOMENOLOGY AND INFORMATION SYSTEMS RESEARCH**

The three chapters in Section 1 introduce the reader to the relationship between phenomenology and information systems research. The first chapter, authored by Giolo Fele, discusses the way information systems research adopts and encounters ethnography, focusing on the tensions between the two disciplinary areas. In particular, the analyses carried out by Fele show how these tensions and “dilemmas” uncover an inedited research area for social scientists and researchers in the human sciences; in particular, the relationship between information systems design and ethnography presents items of interests, “which may derive from long-standing inquiry but are still extraordinarily topical” (Fele, this volume). These items come out from a dialectic between two forms of knowledge, that Fele let emerge through the discussion of the tension between pairs of concepts: on the one hand, the tension between **metis** (‘cunning knowledge’ or ‘knack’) and **techne**; on the other hand between **bricolage** and **engineering**. Techné and engineering mainly rest on universal principles organized analytically into logical, decomposable, and verifiable steps. Whereas metis and bricolage rely on personal and tacit knowledge that resists simplification into transmissible and verifiable deductive principles. In a sense, this tension is reminiscent of the dialectic between the **science of the artificial** and the **science of the concrete**. Notwithstanding,
the chapter claims for a critical approach to this tension grounded in the belief that “techne and metis, engineering and bricolage, are intimately bound up with each other.” (Fele, this volume).

Liberman’s chapter centers around the topic of situated knowledge, a growing concern in the field of information systems. Liberman adopts a phenomenological perspective, with a strong ethnomethodological orientation. A student of Peter Berger, Herbert Marcuse, and Hubert Dreyfus (1990), but especially of Harold Garfinkel (2002), Liberman discusses and presents his argument starting from an examination of Section 29 of the fundamental text of Heidegger’s *Being and Time*. Essentially, this very complex text deals with the question of the adequacy of our modes of representation of social forms and with the ways in which these forms are experienced in our daily lives. It is well known that technological solutions create patterns and structures of social organizations, which impose life forms completely outside of our experience with which we must come to terms, often with difficulty. Much of the engineering culture, which is at the base of these technological solutions, is not oriented towards a social or sociological perspective. Recently, however, we have seen a growing interest in the social contexts of technological innovations (see Giolo Fele, this volume). This shift of attention by the specialists in business sciences, management, and information systems, has led to a deepening of social approaches into the constitutive mechanisms and the fundamental forms of social life (Dourish, 2001; De Michelis, 2008). Here we see the important role, on the theoretical level, of phenomenology and ethnomethodology, and on the methodological level, of ethnography, in identifying, recognizing, and describing the most profound and most subtle aspects of our social life (Fele, 2008). Heidegger’s philosophy provides the ideas for a non-trivial reflection on the foundations of situated understanding (Dreyfus, 1995; Winograd, 1995; Ciborra, 2004). The issue of situated knowledge covered by Liberman’s chapter goes far beyond the usual (although by no means obvious) importance attributed to context in the processes of communication. See the following passage from Winograd and Flores (1986): “The computer, like any other medium, must be understood in the context of communication and the larger network of equipment and practice in which it is situated. A person who sits down at a word processor is not just creating a document, but is writing a letter or a memo or a book. There is a complex social network in which these activities make sense. It includes institutions (such as post offices and publishing companies), equipment (including word processors and computer networks, but also all of the older technologies with which they may coexist), practices (such as buying books and reading the daily mail), and conventions (such as the legal status of written documents)” (pp. 5-6). Winograd and Flores’s seminal perspective recognizes the role and value of the network of relations within which social action acquires meaning. Liberman’s contribution invites us to look further and deeper. From an ethnomethodological perspective (Garfinkel, 2002), Liberman invites us to explore the depths of our ordinary social world, the primitive place of our experience. As an anthropologist who spent two years with some Australian Aboriginal tribes (Liberman, 1985) and three years in a Tibetan monastery (Liberman, 2004), he encourages us to reflect on that world taken for granted that we call reality. Similarly, as philosopher (Liberman, 2007), he sees the limits of reason and the difficulties we fall into when we overconceptualize our worldly relations, when we entrust entirely to what he calls “the formal analysis,” when we don’t recognize the very carnal, practical and experiential character of social life. Starting from this basis, the paper offers grounds for reflection on the field of information systems.

The chapter by Paolo Depaoli exemplifies the advantages that an in-depth examination of the basic outlooks and assumptions of theories and practices provide to promote novel methods and areas of investigation in IS research. The key argument is that researchers typically make reference to philosophy when they wish to address issues and topics considered crucial, but inappropriately treated or neglected
by current theories and practice. Ciborra’s journey in the information systems research world and his “escalation to philosophy” (and precisely to Heidegger’s phenomenology) is reconstructed, interpreted, and proposed as an example of that. This journey starts from the empirical finding that the integration of information technologies in organizations never takes place as it was originally planned. Drifts normally occur. The theories and methodologies which dominate the scene of management, organization, and information systems are however unable to account for that. In fact, and in so much as they are based on the method of the natural sciences, and on the idea of prior absolute rationality, they aim at imposing uniformity, rather than addressing the complex reality and heterogeneity of the research settings under investigation. Depaoli discusses some directions that Ciborra drew from Heidegger’s phenomenology to proceed in the study of organizations and information systems design and implementation. Firstly, the idea that information systems in organizations are particular singular worlds. Furthermore, the concept-word of *aletheia* as a methodological beacon to approach the way in which information and communication technologies become integrated in the organizational life. This approach lies in “unveiling” the core characteristics of an organization, which typically remain unnoticed because of the “veiling” effect produced by the concepts drawn from dominant theories and methodologies. Finally, the assumption of the “human existence in organizational life” as a centre of gravity. This implies that the points of view of all stakeholders involved in the integration of information and communication technologies in organizations is the standpoint to assess the effectiveness of information systems design and implementation. The chapter highlights that the last point is especially crucial for a novel research area, i.e. individual information systems present in the workplace and addressed to the fulfilment of individual specific work related information necessities.

The contributions in the following Sections of the book move from some open issues concerning the relationship between phenomenology(ies) and the social study of information systems, namely the relationship with formal representations, with global phenomena, and with organizational (re)design and intervention for organizational change.

### THE USE OF FORMAL REPRESENTATION UNDER A PHENOMENOLOGICAL PERSPECTIVE

Section 2 investigates how the concepts proposed by the phenomenological approach make it possible to recast the idea and the use of formal representations as a challenge for the information systems design. In this section, a definition of representation in its relation with information systems together with a discussion of the perspective on phenomenology adopted in Section 2 are first presented. Then, the contribution of the different chapters are introduced and discussed. The starting point is the identification of the generic attributes of the current environment of information affluence and media convergence, where design takes place (Kallinikos, this volume). Subsequently, the focus moves from the general attributes of the environment to the analysis of what characterize our being in the world as different subjects having mutual relationships. Thus, the analysis considers from a phenomenological stance the general concept of community as the root of the concept of community of practice, as a relevant concept for understanding the social dimension of human life. This dimension often referred as situatedness open new paths and possibilities for design, as the practice through which something new is brought to existence (De Michielis, this volume). The following discussion considers two chapters aiming on the one hand to address the general problem of how to design and deploy effective computational tools
that support actors of an organization domain in making sense of the information they manage (Cabitza and Simone); on the other hand, to show the roles artifacts and their representational role in design and engineering collaborative processes, through case studies based on ethnographic research (Tellioglu, this volume). Finally, the chapter proposing to integrate an archaeology and a genealogy of emergent representations in the early phases of information systems design is analyzed. The goal is to consider representations as a way to challenge the opposition of organisational and engineering/technological perspectives as not reducible facets of design (Viscusi, this volume).

As pointed out by Kallinikos (1995) representation is technology in terms of “an overall world orientation concerned with the objectification of the natural and social worlds in ways which render them amenable to calculation and mastery.” Furthermore representation is technology in terms of “an ensemble of diverse and minute techniques which embody and realize such an orientation” (Kallinikos, 1995), namely an ensemble of representations (see Viscusi, this volume). As pointed out by Ciborra (2002):

“When approaching an organizational phenomenon we encounter at least two distinct forms of evidence. First, we are ready to deploy a set of ideas and models taken for granted in the domain of organization theories or consulting models. These ideas and models come almost to be identified with the phenomenon we want to grasp, or at least they provide an unquestioned context in which to grasp it.”

A first challenge for information systems design is to deal with these formal representations, because “information systems is concerned with representation in general” (Boland, 1999, p. 239). Whereas in the literature formal representations are considered to be at odds with situated actions and analyses (Suchman, 1987; Winograd & Flores, 1986). As to these issues, the work of Claudio Ciborra (in particular, Ciborra 1999, 2002) shows how the adoption of phenomenological perspectives in information systems design allows to 1) challenge reified notions, such as the one of “situation,” with living concepts as in the case of situatedness (Ciborra, 2006); 2) let emerge relevant concepts that are peculiar to the information systems domain, such as the critical concept of infrastructure (see also Section 3, this volume).

The above-mentioned contraposition between formal representations-situated actions reflects the “hybrid” nature (Avgerou, et al., 2004, p. 1) of information systems discipline and design (Ciborra, 2002; Currie & Galliers, 1999) as “an area of research positioned between management studies and applied computing, where it is influenced by numerous kindred of reference disciplines” (Avgerou, et al., 2004, p. 1). Despite this recognized hybrid nature of the field, it is still valid the claims that “a common and unified paradigm has been adopted across the board to deal with its human and natural dimensions: the paradigm of natural sciences and the collateral methodologies of measurement, formalization, and calculation” (Ciborra, 2002). The lack of a common and unified paradigm for information systems design is even more true if we consider the definition of design as science and the specific roles of representations as ways to simplify the view on the complexity of the context for problem-solving activities:

“Design science is active with respect to technology, engaging in the creation of technological artifacts that impact people and organizations. Its focus is on problem solving but often takes a simplistic view of the people and the organizational contexts in which designed artifacts must function. As stated earlier, the design of an artifact, its formal specification, and an assessment of its utility, often by comparison with competing artifacts, are integral to design-science research. These must be combined with behavioral and organizational theories to develop an understanding of business problems, contexts, solutions, and evaluation approaches adequate to servicing the IS research and practitioner communities” (Hevner, et al., 2006).
Thus, problem solving is the focus and the founding of design as science. Problem solving “simplistic view” of people and organizational concepts is seen simply as a contingent issue, due to a lack of integration with behavioral and organizational theories. Nevertheless, this claim for integration covers the reified and taken for granted issues of problem solving and related representations. For representations are the fundamental challenge for a unified perspective on information systems design and must be investigated as being reified and taken for granted concepts, having consequences on the context where design takes place and designed artifacts are deployed (Bowker & Star, 1999; Suchman, 1987; Winograd & Flores, 1986; Zuboff, 1988). Indeed, functional simplification and closure are not contingent issues of technology and information systems, but they are rooted in representations as the “objective” roots of problem solving as design focus and technology as self-referential system (see Kallinikos, 2006). Thus, the need for a phenomenological investigation of representations as the root of design aims to challenge current design science perspectives. Furthermore, the relevance of the role and nature of representations as the root of design emerges from a preliminary investigation of what is named by design science literature as behavioural-science paradigm, namely a set of several and different disciplines, such as Anthropology, Organizational Behavior, Political Science, Psychology, Sociology (Bariff & Ginzberg, 1982). What is worth noting here, is the difference in classification of design science with respect to behavioural science disciplines classification: while design science class refers to a unique discipline, the behavioural-science class refers to at least five disciplines disregarding their internal (historical) complexity, their “qualitative” articulations (at least in the case of Anthropology and Sociology), and the difficult in framing them in a natural science paradigm (at its turn as taken for granted reification, despite the multifacets debate and perspectives of the epistemology debate, as branch of philosophy). What is expected these disciplines can provide to design science? Do they have to provide requirements for “artificial worlds (e.g. the ‘enterprise models’) made of deceivingly univocal and objective entities, data, processes, and activities” (Ciborra, 1999, p. 145)? How this requirements elicitation activity fits with each disciplinary framework and scopes?

The consequence of the design science perspective of the disciplines classified as behavioural science is once again a separation and a specialization of information systems research: the resulting information systems field consists in studies which analyse, on the one hand, the socio-economic and organizational aspects of information systems, thus reducing information systems to an organizational system; on the other hand, aspects more closely connected with the processing of data and information by means of technologies, thus reducing information systems to technological systems (Viscusi, this volume). As a consequence, we have sociological, organizational, economic, or technological analyses in the information systems area, but what an information systems research means remains veiled and forgotten. The consequence is the design of good organizations for ideal systems or the design of complex systems for unready organizations (Viscusi, this volume). Thus, a phenomenological perspective on information systems design must let emerge the complex infrastructure of intertwined phenomena behind the contraposition between formal representations-situated actions: “the unveiling of the platform organization required a different analytical approach from one common in industrial organization research” (Ciborra, 2002). Taking these issues into account, we have first to clear the position towards phenomenology adopted by the editor in Section 2 of this volume.

As pointed out by Lyotard (1954) the terms ‘phenomenology’ received “full and singular meaning” with the Phenomenology of Spirit of Hegel, where phenomenology is defined “the science of consciousness…in that consciousness is, in general, knowledge of an object, either exterior or interior.” Here consciousness is the immediate being of spirit, possessing two moments, namely “that of knowledge and...
that of objectivity which is the negative with regard to this knowledge. When spirits develops itself in this element of consciousness…this opposition occurs at each particular moment, and they all appear as faces of consciousness. The science of this path is the science of the experience had by consciousness” (Phenomenology of Spirit, Preface, sec. 36).

Thus as Lyotard claims “the very idea of phenomenology puts this question out of play: consciousness is always consciousness of, and there is no object which is not an object for. There is no immanence of the object to consciousness unless one correlative assigns a rational meaning, without which the object would not be an object for. Concept or meaning is not exterior to Being; rather, Being is immediately concept in itself, and the concept is Being for itself” (Lyotard, 1954).

The reference to Lyotard recalls Hegel and his interpretation of phenomenology that allows the introduction of a perspective that does not adopt as starting point the phenomenological reduction which characterizes the Husserl phenomenology before the issue of the Crisis of European Sciences and Transcendental Phenomenology where the “radical foundation of truth reveals itself in the end as a return to Lebenswelt” (Lyotard, 1954). As noted by Giddens, the adoption of phenomenological reduction prevents Shutz and sociologists (and I would add some information systems scholars) to reconstitute social reality as an object-world (Giddens, 1976). This is a relevant point for information systems, where often scholars have integrated Husserl and Heidegger perspectives, without considering the fundamental philosophical differences and distances related to the issue of the phenomenological reduction.

The above discussion aims to introduce the perspective who guided the choice of contributions to Section 2 of this book, where “the term phenomenology refers only to the rules that will be found operating in any perspective—scientific, religious, aesthetic, practical, etc.—whereby certain areas of experience are regarded with a neutral attitude, i.e. are made non-relevant to the problem in hand, while others are accorded the accent of affirmation and just so, i.e. the accent of relevant matter of facts” (Garfinkel, 2008, p. 116).

Thus, the focus of the IS design from a phenomenological stance must not be on an individual whole person considered as an “actor,” namely a problem solving situated perspective as the ones above introduced for design science; the focus must be on the “rules on which the irreducible character of data-experiences is based” (Garfinkel, 2008, p. 116) and to the conditions “under which the world of an experiencer appears as a closed rather than a open set of possibilities (Garfinkel, 2008, p. 130). As a consequence, Section 2 of the book deals with “Design as the practice through which something new is brought to existence” (De Michelis, this volume). The adoption of a ‘phenomenological stance’ allows to go beyond the traditional idea of design as science, to capture its complex social nature (De Michelis, this volume). Thus, the main goal of Section 2 is to provide a phenomenology of design of Information systems that lets emerge its main constitutive attributes and rules. Current design science considers information systems as characterized by Information Systems and the organizations they support as complex, artificial, and purposefully designed (Hevner, et al., 2006); thus, in some sense design science points out a neutral representation of information systems that must be related and instantiated (in and) by context representations coming from results of behavioral science. Contributions in Section 2 of the volume aim to challenge this neutral perspective by showing that Information systems and the organizations they support are the challenge of design, considering that “social seems to be diluted everywhere and yet nowhere in particular” (Latour, 2005, p. 2) and that “no information is possible except against the constancy provided by a background of invariant social expectations” (Garfinkel, 2008, p. 75). Thus, the final aim of Section 2 is to contribute to a further foundation of design science rooted in the complex lifeworld (Lebenswelt) of information systems.
As a starting point, Kallinikos’s chapter considers how the current environment of information affluence and media convergence is constructing “a comprehensive living and knowing habitat that induces the framing of life issues in terms of data availability and the concomitant data permutations this encourages” (Kallinikos, this volume). The analysis aims to let emerge how this environment differs from 1) the work and professional settings in which information technology has been studied, and 2) from the “early internet,” before the advent of social networks, the so called web 2.0 and mediated by the diffusion of smart phones, location services (GPS), and augmented reality technologies. Indeed, current information growth is characterized “by its remarkable ability to deeply penetrate the social fabric and increasingly induce the framing of life issues in terms of data availability, and sense making based on data, assembled into meaningful categories and structures by machines” (Kallinikos, this volume). Furthermore, the analysis aims to identify and exhibit the generic attributes of this environment “that cut across specific contexts of social and institutional life,” namely the prominence of cognition over perception and the preponderance of information and computational principles in defining reality. These attributes define the inedited role of representations as “outcome of technological advances of reality documentation (satellite images, digital soil maps, weather forecasts), far beyond any human register capacity” (Kallinikos, this volume).

As a consequence, the challenge for design of information systems is to understand the attributes of the emerging prominence of “cognition qua computation” and the rendition of knowledge as outcome of agnostic statistical permutations performed upon mass of disseminated and distributed data tokens: “data comprehensively maps reality (the scans capture bone conditions) while computer-based data mining discovers its underlying principles (the mechanism of bone loss)” (Kallinikos, this volume). These attributes need to be studied and analysed in order to understand and expose “distinctive ways through which they are manifested, change and fuse into the fabric of social practices” (Kallinikos, this volume). Finally, the challenge for design is to understand the consequences and the way of acting on these representations that “create and establish particular versions of the world possible to act upon, perform, and manipulate. Kallinikos’s contribution allows one to clarify the definition of information systems provided by design science as “complex, artificial, and purposefully designed” (Hevner, et al., 2006) through the emerging constitutive attributes of the current information environment. In order to understand the way these attributes manifest and intervene in social practices, a further investigation must consider social practices and question them as “the social milieu where organizations are formed, as well as the social dimension of learning.” (De Michelis, this volume).

De Michelis’s chapter investigates, from a phenomenological stance, the concept of community as a relevant concept for understanding the social dimension of human life. In particular, the study focuses on the concept of Community of practice as “a means for understanding the behavior of the people using in their practice artifacts and sharing spaces.” Despite its relevance and diffusion, the concept of Community of a Practice (CoP) is characterized by an original ambiguity coming from its provenience from market rather than the academic field; indeed, “it becomes unclear if CoP are an analytical concept for understanding learning and practice or a powerful tool for developing effective education within organizations or for improving the professional skills of their employees” (De Michelis, this volume).

As a consequence, the chapter aims to root the concept of CoP in a more general concept of community as the first way through which we encounter something as a CoP. This concept emerge from the consideration by Jean Luc Nancy, “of ‘being in the world’ of Heidegger (Dasein) as a ‘being with’ (Mitsein), so that the community becomes ‘la position réelle de l’existence’” (De Michelis, this volume). Furthermore, sense making and individuals emerge from the social experience of ‘being with,’ where
“human beings appropriate the world, in the same moment they emerge as individuals with a specific identity” (De Michelis, this volume). Understanding social value as rooted in community as original appropriation of the world, provide a way to overcome the above mentioned “simplistic view” of people and organizational claimed by design science.

“On the one hand, information systems should avoid the separation between organizational performances, like invoicing, ordering, producing, planning, monitoring, etc. and the practices within which they are embedded. On the other, even if any practice is situated within a community (of practice), we should remember that different human beings participate and contribute differently to any community of practice: this sheds a new light on situatedness of human practice emphasizing its distributed nature” (De Michelis, this volume).

Furthermore, the artificial character of information systems design emerges as grounded in the “being with.” Indeed, formalization “is the move through which human beings are able to interact even when they don’t share a context” (De Michelis, this volume) and formal models are representations of the community: “modeling, de-contextualizing knowledge, allows to break the boundaries between communities: formal models are typically boundary objects” (De Michelis, this volume).

The two discussed contributions of Section 2 of this volume point out the challenge of Information systems design to question the prominence of cognition over perception and the preponderance of information and computational principles in defining reality as emergent attributes, emerging from community as a fundamental and original appropriation of the world. Taking these issues into account, we have now to re-consider work and professional settings in which information technology has been traditionally studied as an emergent human practice.

Cabitza and Simone chapter in this volume addresses the question of how to study and design a technological support of work in organizational domains. The topic is addressed by investigating on the one hand, the differences and complementarities between Information Systems (IS) and Computer Supported Cooperative Work (CSCW) perspectives/approaches to systems design; on the other hand, it addresses the problems of sense making in information quality management, by providing evidence of these issues in the healthcare domain.

The identification of a ground for ‘reassembling’ IS and CSCW perspectives is a relevant topic for information systems design. Indeed, while both the perspectives show the combination of technological concerns with the understanding of the setting in which the technology has to operate, fundamental differences seem to characterize their approaches to organization and work as social phenomenon: “CSCW focuses on users, as the sole source of knowledge about the cooperative settings and its needs; on the other hand, IS focuses mainly on management, and when it recognizes a role for end-users, it sees them mainly as one of the possible stakeholders at play, or social actors” (Cabitza & Simone, this volume). The starting point of what we can define a second order contribution by the authors is the conceptualization of work that is common to both IS and CSCW research:

“work is an intrinsically (and probably irreducible) social phenomenon – and argument that nevertheless the phenomenon of collaboration is conceived differently in these two fields. This will bring us reconsider the role of “artifacts” in organizations (for informative and coordinative purposes), by distinguishing between the conceptualizations that see artifacts (and the representations they carry on)” (Cabitza & Simone, this volume).
IT artifact is a widely investigated and debated topic in both IS and CSCW areas, and Cabitza and Simone propose a reconciliation that considers IT artifact as rooted “in a class of ‘tools’ that are widely used within organizations, let’s say before any sort of digitalization: the paper artifacts that often take the shape of semi-structured forms” (Cabitza & Simone, this volume). Furthermore, the digitization of paper is an ‘event’ occurring along with the introduction of an information systems application, usually with aims “to preserve and enhance the role of artifacts as information archives and information sources, especially in their function of ‘gateways’ to the underlying information system.” (Cabitza & Simone, this volume). Thus, the challenge posed by digitalization of paper as IT artifact is further rooted in the information-intensive domain where “data are produced in the practice, during the practice and for the practice itself” (Cabitza & Simone, this volume). Finally, through the discussion of the case study of a prototypical Electronic Patient Record (EPR), authors show the emergence of “sense-making networks of data that could reconcile their accumulation for the sake of coordination with the intrinsic (process and data) quality requirements” (Cabitza & Simone, this volume). As a consequence, the chapter points out how IS and CSCW perspectives can be reconciled considering the emergent roles information plays, namely the archival and the coordinative one, that belong to two different layers of the information system. This connection is realized “by letting quality be interpreted differently in the two layers; and by supporting this interpretative act by augmenting the artifacts with meta-information” (Cabitza & Simone, this volume).

As to these issues, a relevant challenge is the role of artifacts in the work practices of people devoted to the design and development of information systems. Tellioglu study in this volume focuses on artifacts used in collaborative engineering processes. The aim is to understand work practices of engineers and designers in order to identify and provide them more suitable IT-tools. Grounded in the CSCW perspective, the study first summarizes the state of the art of engineering as a design process, artifacts, and their representational role in design and engineering. Then, the study analyses and discusses artifacts’ creation and use in engineering work, focusing on team-based coordination and decision activities. The studies presented are based on ethnographic research carried out for several years in different design and engineering companies. Furthermore, the case studies consider artifacts from their representational role as visualizations of different kind. Visualizations emerge ‘network-organizing devices’ that “are used to illustrate the design ideas to different actors involved in the project, such as the clients, external professionals, or partners, convincing them of the design idea and mobilizing their cooperation” (Tellioglu, this volume).

The final chapter of Section 2 authored by Gianluigi Viscusi considers the issues for information systems design methods that emerge from the phenomenological analyses carried out by Claudio Ciborra (2002). In particular, concepts such as e.g. Kairos3, Drift4, Bricolage5, unveil 1) a specific path (odos) for the information systems as a discipline and 2) a meth-odos towards new opportunities offered to design by answering the provocation of information systems considered as infrastructures (Ge-stell). This meth-odos aims to provide a preliminary support to uncover the foundation of representations in the readiness-to-hand of the being in the world. The aims is to define a way to move back from representations towards the unit of Befindlichkeit (i.e., affectivity), Verstehen (i.e., the understanding), and the Rede (i.e., speaking) (Viscusi, this volume). Thus, the chapter proposes to integrate this meth-odos and state-of-the-art methodologies in order to challenge the bestand of schemas and representations inscribed in the technological and engineering facets of the information systems. In particular, the chapter proposes to integrate an archaeology and a genealogy of emergent representations in the early phases of information systems design; these paths must be introduced either (1) in the observation phase in the
social and participatory design oriented methods and (2) in requirements analysis in the engineering oriented methods (Viscusi, this volume). In particular, the integration of meth-odos in the early phases of systems design should support the uncovering of the opposition of organisational and engineering/technological perspectives as not reducible facets, “which must be analysed and synthesized together in an evolutionary design of information systems” (Viscusi, this volume).

ON THE FULLNESS OF SITUATION OR THE BIOGRAPHIC TURN IN THE SOCIAL STUDY OF INFORMATION INFRASTRUCTURES

Section 3 introduces a set of research projects, which the authors feel comfortable designating as being social studies of information systems. The common denominator of the chapters enclosed in this session is the search for the possibility of a sociology of technology, and of Information Infrastructures in particular. Information Infrastructures are long-lived complex technologies, that face the dilemma of aligning multiple stakeholders over extended periods (Ciborra, 2001), often implemented across multiple sites within large branch-plant organizational structures (Markus, et al., 2000). Uncomfortable with the many sociologies that have been proposed to study the Information Infrastructure phenomenon (micro-sociology and ethnomethodology in particular), the authors contributions in Section 3 seem to endorse an “empirical turn” in the social study of information systems, which deeply analyzes case studies and concrete issues concerning Information Infrastructure design and use. Assuming, according to many science studies programs, that artifacts have an agency, they look at how these particular technologies embed a view of interaction, society, and organization that may challenge core assumptions of received sociological notions. Each chapter contains an Information Infrastructure concrete case study but it also leaves space for a modification of sociology itself, and in particular to some sociological concepts inherited by Information Systems studies from the ethnomethodological and micro-sociological traditions of study. The authors of the chapters collected in Section 3 demonstrate to share the basic tenets of a phenomenological program in the social study of phenomena, in line with Ciborra (2006) and a vibrant seek for capturing “the total situation” (Heidegger, 1993, p. 185 and 262; in Ciborra, 2006) of the Information Infrastructure phenomenon. Therefore, social studies of information systems scholars abandon the concept of system and replace it with the concept of Information Infrastructure. The concept of Information Infrastructure drives our attention to its shared nature, its openness, its always being an extension of existing ones—the installed base, its heterogeneity and evolving nature (see Nielsen, this volume).

More specifically, the fact that each of the chapters concerns the same type of techno-scientific practice (the work surrounding Information Infrastructure development) contributes to elucidate how a specific research project of doing a sociology of Information Infrastructures might look like, in contrast with that of applying sociology to information systems studies or importing sociology to address information systems concerns.

One of the key aspect of the Information Infrastructure’s phenomenological structure that is highlighted in all the five essays, is its unique relation with space, time and materiality. This specificity of Information Infrastructures puts some information system researchers at odds with sociologies that still give prominence to place by assuming space naturalness and its essential “thereness,” and that underestimate the difference between materialities and their different capacity to order social relations. As stated by one of the contributors in this volume: “Zimbabwe water pumps, enterprise resource planning systems..."
and many health ICTs have more flexible compositions from any other particular time to another than, for instance, pens, bicycles or electricity grids” (Hyysalo, this volume).

The empirical focus on technologies such as Information Infrastructures, makes the authors regard them as distinct and discontinuous with the technologies populating previous epochs of human history. One key assumption in social studies of interaction can be described, drawing on a concept from biology, as being the isometric scaling of social phenomena. Isometric scaling occurs when changes in size (during growth or over evolutionary time) do not lead to changes in proportions, i.e. types of interactions between parts of the organism. On the contrary, the social study of information systems introduces the notion of allometry in the understanding of social phenomena. Allometry is when changes in size can lead to discontinuities in the relation between properties (e.g. to stay within the biological metaphor: between mass and surface area-based properties or length-based properties). Therefore, the social study of Information Infrastructures addresses the need of a change in the concepts describing social interactions when the scale of their spatio-temporal distribution changes. Furthermore, given that each of our mundane affairs is increasingly information infrastructured (i.e. imbued if not directly at least potentially in larger-scale digitally-mediated social forms), the social study of Information Infrastructures may also suggest a rethinking of the concepts by which sociologists interested in interactions have addressed the way the orderliness of mundane affairs is achieved by members of a society.

The idea that Information Infrastructures embed modifications of sociology extends what Gian Marco Campagnolo noted in his doctoral dissertation (Campagnolo, 2007) in relation with new technologies of accountability with respect to the ethnomethodological distinction between “accountability” as what people provide as a description of their context and behavior and “accountability” as an intrinsic part of these activities. At least according to ethnomethodology, accountability belongs in the life-world of each of us as a radical property of social action from the start, ‘since the immemorial,’ as a fact in nature. However, some changes in the late modern conditions underscored by studies of new public management in the turn of the century (e.g. Marilyn Strathern book on the ‘Audit Culture’ or Micheal Power reflections on the ‘Audit Society’), may have revealed the historicity of accountabilities. Take the example of an everyday conversation between a customer/client and an operator providing services through a call centre. The interaction begins with a warning that the conversation might be recorded for evaluation or training purposes. We know from then that the ways we will naturally act in order to make things visible-and-reportable are not at all circumscribed to the practical purposes impinging upon the present situation, but they will also be referred to in other context for other less practical purposes—namely, statistics purposes, training purposes. Furthermore, government actions are in place that expect to discipline subjects in being aware that their actions are not to be taken as having consequences only locally, but also on the way important decisions will be taken in spatio-temporally distant circumstances (e.g. with respect to socio-economic or environmental policies) with the help of technologies that record, save and export information from place to place. It is assumed here that what was said for the ethnomethodological concept of accountability goes also for other ethnomethodological notions. A modification of sociology that has been fostered by contemporary Information Infrastructures, as already suggested by Giddens (1994), is thus the addition of an institutional, strongly calculative, material dimension to the practice of making things visible-and-reportable for all practical purposes, as well as to the way these accounts contribute to constitute the observability of a setting (i.e. reflexivity). Recognizing this additional layer, makes it impossible an analysis of how members reflexively monitor their streams of action without strongly referring to the increasing capacity of institutions to code information to control action at a distance. One example of the heightened institutional appropriation of ethnomethod’s reflex-
ive nature emerges from Nicholas Rowland study of Enterprise Resource Planning software usage in American Universities (Rowland, this volume). His empirical case study demonstrates that the received ethnomethodological transcendental interest that the social order is always a local accomplishment— that is the result of a concerted activity of a community of co-operating fellows—requires some further discussion. Rowland’s paper provides illustrations of how people involved in large-scale information systems implementation do not know what they mean when they produce accounts. He does so by making reference to the ‘fit-gap work’ taking place during ERP implementations, but he also identifies how participants found ways to deal with these uncertainties, to manage the reflexivity of their understandings. In particular, he makes reference to the “prioritizing/de-prioritizing” work. Something that cannot be decided, or evaluated on the basis of a sufficiently accountable manner, gets de-prioritized. The most useful feature of de-prioritization is that issues related to implementation that become de-prioritized are “removed without removing” and remain in the purgatory of prospective possibilities.

The process of natural objectification of practices for organizing the orderliness of events produces tools, instruments, artefacts, benchmarks that become available for future and distant accomplishments. What the illustration deriving from the “fit-gap work” reminds us is that these commodities are certainly re-enacted in each locale, but people do not re-invent the wheel all the same all the time. Prior to the transcendent re-enactment of social order, the chief interest of social researchers in information system is on the layers of customization encrusted in organizing artifacts and ordering systems that protect people from being disbanded every time they encounter even the most routine task. What Nicholas Rowland study suggests is that it is true that people do not know what they mean when they produce accounts, but it is also true that they know that. And by knowing that, people’s major occupation is to produce work-arounds in order to reduce the noise of the reflexivity of understandings (e.g. the ‘fit-gap work’). These accomplishments, that take the form of routines, tools, instruments, artefacts and institutions, are of central interest for a social researcher in Information Infrastructures.

A further specific aspect of Information Infrastructures phenomenological structure is that our experience of here and now in dealing with (and researching on) them has increasingly lost its immediate spatio-temporal referents and has become tied to and contingent on actors and actions at distance (Newmann, 2008). This allows for a further modification of the received sociological notion of interaction via ethnomethodology with respect to the principle of seeking a perspicuous setting (Garfinkel, 2002, pp. 181-182), with its emphasis on bilateral relationships. Perspicuous settings are settings where parties are actively engaged in making a situation intelligible (e.g. courtrooms, surgeries, classrooms, etc.). A perspicuous setting has to be able to tell us more about our interests than what we are able to imagine about it. However, to do ethnographic research, for example, on the social grounds that contribute to the production of an Information Infrastructure requires different practices and opportunities than does fieldwork among the situated communities (e.g. workplaces) such Information Infrastructures affect. While the default assumption of interactionist studies is that the relevant ‘public’ is the body of immediate co-present interactants, in the case of Information Infrastructures, the ‘public’ is a more diffuse set of (potentially significant) others, often dispersed temporally and physically. Thus, very different kind of research agendas are needed to address the multiple locations and the different timeframes in which technology operates. By emphasizing the central importance of local redesign for the success of information systems, interactionist studies of Information Systems implementation fail to recognize the role of other spaces in stabilizing member’s local streams of activity: for instance, the production chain, the developers, the physical environment, the competent authorities, legislators, interest organizations, industrial analysts, and the scientific community. Gian Marco Campagnolo’s chapter on the
development of ERP systems addresses this problem by providing a map of how key tensions between distributed actors and social worlds contribute to the framing of a particular discourse on information technology development for the public administration, which to its turn affects workplace interactions between consultants, management, Staff personnel and line workers in an Italian public sector organization dealing with a large scale information system implementation. A concern with the space distribution of design-use relation in Information Infrastructure development is also masterfully raised by Sampsa Hyysalo contribution titled How is situated design interaction situated, when he says: “we hope to open up the question about the centrality of design process by examining what comprises the situated action taking place in design, in other words, examining how design interaction is situated within design-use relations that are temporally more long term and spatially more distributed” (Hyysalo, this volume).

The final chapter of Section 3 is authored by Neil Pollock and Robin Williams. Their argument relies on the empirical illustrations deriving from the development of Connecting for Health, an UK health infrastructure. There, Pollock and Williams maintain that local studies of immediate settings of action inevitably draw attention to the scope for discretion (user workarounds, appropriation strategies, resistance, etc.) but provide a poor vantage point for exploring longer-term processes of technology-organizational alignment (for example around common business process templates within enterprise systems). They find it odd that there is such a wide-ranging set of terms in sociological essays demonstrating interest in information systems (including Science and Technology Scholars) to describe the way standardised technologies are ‘imported’ (‘domesticated,’ ‘appropriated’ or ‘worked-around’) into user settings, while there is a comparative lack of emphasis on the reverse process through which an artefact is ‘exported’ from the setting(s) in which it was produced. This is striking since the bulk of organizational software in use today is produced in this way—the same systems are recycled from one context to another. Thus they attempt to develop the beginnings of a vocabulary to capture this exporting, what they describe as the practice of making software generic (generification work), including its various explicit and revealed generification strategies, as the process of “generification.” Furthermore, sociological essays in information systems designed to focus on the ‘importing’ process are often accompanied by a particular temporal framing, which has been identified as snapshot type of study. Snapshot studies are often conducted a relatively short time after the introduction of a new technology, “arguably before the complete consequences of an innovation can be reasonably assessed” as Pollock and Williams say. According to our view, the research design and temporal framing of current sociological enquiries in information systems embed a tacit determinism with respect to the nature and stability of the normality structure, which derives from the interactionist perspective: it is a hidden naturalism, a tacit assumption that everyone has the same basic normality structure (Lynch & Bogen, 1994). The interactionist studies perspective derives from Garfinkel’s critique of Durkheim’s conception of the nature of social facts. Contrary to Durkheim’s view that a fundamental principle of sociology is the objective reality of social facts, the ethnomethodological perspective assumes that the reality of social facts is a process of continuous accomplishment in the concert of daily life. Although theirs is no longer Durkheim’s consensual rule-governed society, the picture emerging from interactionist studies is that of a society consisting of a vast but stable repertoire of fragmented micro-rules. As a consequence of the assumption of the stability of the normality structure, interactionist studies informed sociological enquiries in information systems may fail to fully realize that ambiguity of context in human societies is partially removed by a whole gamut of tools of which they analyze only a part.

Pollock and Williams (via the biography of artifacts framework—BoA), as well as Hyysalo (via the Biographies of Technologies and Practices study—BOTP), proposed modification of sociology is
something that we can call a biographic turn in the social study of Information Infrastructures, which
consists in suggesting that Information Infrastructures have biographies. It is, we think, a concern to
reassemble macro and micro levels of analysis that explain the interest in biographical method by infor-
mation systems researchers. The biographic method, as it has been used in different branches of social
sciences, represents a way to clarify the connections between the personal and the socio/historical after
the flat ontologies of postmodernism (see Wengraf, Chamberlayne, & Bornat, 2002, for a review), and
so it does for the social study of information systems. Quoting Hyysalo, this turn in the social studies
of information systems assumes that when the unit of analysis is design work, its biography can span
different dispersed (in space) and successive (in time) organizations without loosing its unity:

“any moment in human conduct is simultaneously a part of the unfolding of a task, the development of
the individual doing it, the development of the work community, and the development of professional
practice” (Hyysalo, 2004, p. 12).

The biographic turn in information systems studies can also be seen as an attempt to write about the
fullness of the total Information Infrastructure situation, while refusing to resort on the analytical move-
ment from singular expressions to delocalized generalizations. The opportunity given by Information
Infrastructure to social sciences scholars to connect (often concretely, by social bonds, the internet or
global institutional affiliations) different social grounds into the same terrain of research (e.g. following
the biography), feeds back on the legitimacy of grounding the critical force of the arguments social stud-
ies of information systems aim at making: if we can find ways to make connections between disparate
events, we will have extended empirical analyses. While assuming that connections between historical
players and ideas must be shown in the local setting, the biographical turn is also suggesting that there
are no limits to the size of the analytical network we can create by concretely connecting multiple local
analyses.

One final aspect of the phenomenological structure of Information Infrastructures as a research topic
we want to flag is that of unifying different scholars from different countries into a common research
program. Based on the critical comparison and juxtaposition of empirical aspects of distant but con-
nected and converging phenomena, the social study of Information Infrastructures can solidify into its
own specific methods and proposals of modifications of social science, of which the biographic turn is
just an initial manifestation.

PLURALISM IN ACTION RESEARCH FOR TECHNO-
ORGANIZATIONAL CHANGE

Section 4 investigates the consequences of the phenomenological orientation for action research, and
the possible alternative modes of approaching action research in organizations.

Action research can be generally defined as a form of applied research distinctively characterized by
the intertwining between theory and practice, so that to shape an epistemology of knowing by changing
and vice versa; a participative approach, according to the idea that all people involved in the social prac-
tices under investigation should actively cooperate in all research phases in order to produce knowledge
actually able to change social practices; and participation extended to all decisional levels, according to
the idea that change should concern the overall organizational design and regulation of social practices.
In the organizational field, the core characteristic of action research is the attempt of connecting the organizational analysis of empirical work settings, organizational change, and the evaluation of organizational re-design with each other.

In this framework, the chapters enclosed in Section 4 presents a number of methods and approaches for dealing with organizational re-design, and particularly with organizational re-design associated with the introduction of Information and Communication Technologies (ICTs) in work settings. And they provide examples of their application in different research settings, such as a medical Emergency Response Centre (Bassetti, this volume); an electronic small and medium sized enterprise (Jacucci & Campagnolo, this volume); an ambient assisted living project (Kai-Uwe, et al., this volume), a public administration (Albano, et al., this volume). In so doing, they leave space for reflections on the possible spaces for organizational re-design in such cases where: a) the action research starting point is the focus on concrete collective processes of work, each of which is seen as unique and unrepeatable (i.e. constantly different from itself, over time, and from other processes, at the same time); and b) the aim of action research is the organizational change effectiveness from the standpoint of the agents of the research setting under intervention.

The fist common denominator of the contributions enclosed in Section 4, thus, is that they are concerned with the issues of whether and how organizational re-design associated with the introduction of ICTs in work settings is still possible even though the starting point is the focus on unique and singular worlds.

In this section, I argue that answering the above questions requires a reflection on two further distinct, yet connected, controversial points. The first concerns the cognitive strategies employable to deal with ICT-related organizational change. The second one refers to what might be meant by organizational re-design.

With regard to the first point, the assumption that work processes are unique and unrepeatable should imply that they could not be organizationally re-designed accordingly to universal laws. As a consequence of that, answering whether and how ICTs-organizational re-design is still possible starting from that assumption requires first to reflect on the possible cognitive strategies that might be employed in place of the positivistic one for researching organizational change related to ICTs; and then to grasp which spaces they leave for organizational design.

Tony Hines’s contribution offers preliminary insights to move some steps towards this direction of reflection. The chapter attracts attention on the phenomenological cognitive strategy rooted in the notion of “horizon of experience” drawn from Husserl’s work. The premises are that social researchers consciously and intentionally set out to know the phenomenon of human existence that finds expression in human endeavours and human organizations. Knowing is understanding, i.e. making sense and meaning, through the lived experience, of the spatio-temporal relations between subjects and between subjects and objects. Knowing/understanding is an intentional and conscious act. One first experiences the world, and then conceptualizes it to understand personal experience. Every experience/knowledge has its own horizon, which, at least in part, limits it. According to Husserl, living together defines the horizon of the subjective experience. The researcher interested in the organizational change associated with the introduction of information technologies in work settings, should therefore adopt a natural standpoint. S/he should live in and experience the research setting, by setting aside any preconceptions and prior theories. His/her aim is to understand the understanding of change by people in the organization. Through understanding, change becomes an object of consciousness for the subjects, and the change in the research setting, as well as the subjects become objects of consciousness for the researcher. Both for the latter and for organizational members, understanding is the reconstruction of the points of view,
and the subjective meanings of the agents in their relationships with other subjects and with objects. The researcher, and the research “objects” should therefore proceed in a way similar to Aristotle’s “Posterior Analytics.” A consistent application of this strategy for researching ICTs-related organizational change should therefore imply that the phenomenon at hand might be justified ex post only. Therefore, any possibility of guiding ICTs-related organizational change according to prior rules should be ruled out.

With regard to the latter point, a couple of contributions in Section 4 of this book points out that two cognitive strategies provide a chance for maintaining the possibility of guiding ICT-related organizational change in accordance with prior rules. One is that which typically underlies socio-technical systems approaches, and newer systems theories (cf. the chapter authored by Kai-Uwe Loser and colleagues in this book), that is the positivistic cognitive strategy. As I stated before, this strategy should face many difficulties in coping with the ICTs-related organizational re-design of unique and unrepeatable processes of work, and, indeed, Loser and colleagues’ contribution in Section 4 of this book precisely attracts attention on the ways in which the method of socio-technical walkthrough, which is rooted in the above theoretical and methodological references, tries to overcome those difficulties. The other cognitive strategy which provides chances for guiding the ICTs-related organizational change accordingly to prior rules is the Weberian one. This epistemology underlies the approach to action research discussed in the chapter authored by Roberto Albano, Tommaso M. Fabbri, and Ylenia Curzi in this book. As this contribution highlights, the basic assumption of this approach is that work processes are ever changing processes.

As mentioned above, the second controversial point on which one should reflect to answer to whether and how ICT-related organizational re-design is still possible even though the starting point is the focus on unique and unrepeatable collective processes of work is “what the concept-word design might mean.” A number of contributions in Section 4 of this book suggests that the meaning of ICT-related organizational re-design varies accordingly to the cognitive strategy used for researching the ICT-related organizational change. They further suggest that this meaning, to its turn, strongly affects the way to proceed in real world work settings to organizationally re-design work processes affected by the introduction of ICTs.

The chapters enclosed in Section 4 of this book move from different epistemological viewpoints/cognitive strategies. Therefore they provide different conceptualizations of ICT-related organizational re-design.

In the study by Chiara Bassetti in this book, the word “design” refers to the order(s) of the activities related to technologies, which emerge in the field through improvisation and become established gradually. In accordance with that, the “design” is recognizable/visible only after the fact. In particular, the author uses the word “design-in-use” to emphasize that techno-organizational design is a practical activity, concomitant to the use of the technology, and the word of “co-design-in-use” to stress that the improvisational process of techno-organizational change is collaborative, situated, interactional, and based on the workplace natives’ collective knowledge/how, which is both exploited and increased in the process.

Gianni Jacucci and Gian Marco Campagnolo’s contribution in this book proposes to maintain the concept of design even thought the researcher assumes that social practices emerge by individuals’ and groups’ social construction, rather than being designed in an engineering way. The word should be used to emphasize the core characteristics of any process of organizational innovation, such as i.e. intentionality, proactive-ness, deliberation, and planning.

The study by Kai-Uwe Loser and colleagues in this book shows the limitations of upfront planning in coping with the complexity of technology-supported services processes for elderly people. This com-
plexity is related to the fact that the same service process conducted by different stakeholders results in different processes, and to the fact that even with the same stakeholder, the service process changes, because the conditions and requirements of technology usage change rapidly. In such circumstances, the design of the technology, and of the coordination of cooperative work involved in the offer of domestic services to elderly people, should not be intended as the search for a complete and durable solution, for a strict control, and planning of every aspect of the process. Rather, it should include change, and provide the different stakeholders involved in changing environments and complex processes with a guidance, a point of orientation for local adaptations during processes conduction.

Finally, the last contribution in Section 4 of this book, authored by Roberto Albano, Tommaso M. Fabbri, and Ylenia Curzi, considers organizational phenomena as products of the intentional and bounded rationality of human beings. Accordingly, it conceives organizational design as the process of actions and decisions aimed at ordering, co-defining means and ends in accordance with bounded and intentional rationality, and with a logic of mutual consistency. “Organizational design” is a search under condition of uncertainty, embedded in any work processes and distributed among all those who are directly involved in it.

In connection with different conceptualizations of ICT-related organizational re-design, the chapters in Section 4 of this book propose different approaches to techno-organizational re-design.

Bassetti’s study proposes a form of critical and dialogic action research, where the researcher lays the groundwork for the cooperative and emergent accomplishment of new order(s), and the self-reorganization of the setting. His/her task is to make explicit and intelligible to the other actors of the techno-organizational change process the tacit logics underlying the organization of the operators’ practices of work. The author particularly stresses the role of ethnomethodologically oriented ethnography as an useful methodology for analysing how different groups of people (i.e. designers, managers, future users) make sense of tools and artefacts, of the everyday technology-mediated work practices, and of the techno-organizational change process. The action researcher should therefore provide all subjects involved in the change process with additional understanding of themselves, of the relevant others, and of the specific ways in which orders are collaboratively and improvisationally achieved. This additional knowledge would increase their ability to identify, or to deal with techno-organizational problems, and to innovate work practices and instruments on their own.

The chapter authored by Jacucci and Campagnolo attracts attention on Social Practice Design (SPD). SPD is a form of action research based on phenomenology and counselling, which can be considered an extension of Participatory Design to the implementation phase of information systems. It creates a space for the design of social practices, and for the social design of organizational practices in the application of Participatory Design techniques in organizations with the final aim of “making room” for technology. Moreover, it is an approach to design based on improvisation, the latter intended as the reduction of the period of time between design and implementation. Within this approach, three external experts play a key role for the activation of staff and management people in the process of co-construction of innovation. The ethnographic researcher, who contributes to the identification and description of the social practices of the actors involved in the innovation process, and to the qualitative assessment of the change sustainability. The counsellor, who assists people in developing an attitude oriented to change, thereby fostering a process of co-construction of innovation in which all parties are involved and learn, and, finally, the action researcher, who supports the realization of innovation, by making people involved in the research group the authors of the organizational change, and by creating paths that the users of new technologies can follow to conceive and implement the visions of solutions for current problems in the social practice of work.
Loser and colleagues’ study focuses on the method of socio-technical walkthrough. This method practically supports the idea of design put forward in the chapter, through the technical feature of vagueness, and by assuring that all relevant stakeholders (e.g. users, technology developers, staff) take part in the design efforts early on. The study also shows that within the ambient assisted living project, the method at hand was combined with several other ones in order to closely relate the process design with real world applications of the designed process, so that to foster a circle of mutual influence between them. First hand experience from real world applications provides users, process designers, and the other stakeholders involved in the process conduction, with deeper insight into the needs of elderly people, the technology use, and the coordination of the different parties involved in the services process. As a consequence, conditions and requirements of use change, and with them the service process, the supporting technology, and the design.

Albano and colleagues’ contribution proposes an approach to action research based on the social theory of Elias, a theory of organizational learning, and a conception of action research in support of organizational learning, which share a non-dualistic view of the relation between individuals and organization. In this approach, the individuals involved in empirical organizational processes learn theoretical and methodological knowledge drawn from organization theory, and combine it with the knowledge drawn from their everyday practice of work, in order to analyse and change the structuration of their work processes on their own.

As mentioned at the beginning of this section, a further issue recurs in Section 4 of this book. It concerns whether and how ICTs-related organizational re-design is possible when the aim of action research is the organizational change effectiveness from the standpoint of the agents of the research setting under intervention.

These questions are related to the issue addressed, for example, in Bassetti’s study, namely the issue of technology’s usability and technology in use/in action in a complex, and changing situated configuration of people, artefacts, knowledge, information, activities and practices. Technology’s usability and technology in use/in action particularly refer to the technology’s appropriateness, usefulness, and coherence with respect to the endogenous organization of work practices and its underlying logic, which to its turn is related to the actual conditions of work, and the associated workers’ needs. It is precisely in connection with this issue that the author claims for the necessity of techno-organizational co-design (in use). The same questions just mentioned above are further related to the Ambient Assisted Living project discussed in Loser and colleagues’ chapter. Ambient Assisted Living precisely concerns the technology support to the everyday life of elderly people; the final aim is to promote and prolong their well-being, and this to its turn implies to adapt the conditions of technology’s use to their needs.

As these references show, the second recurrent issue in Section 4 of this book can be differently expressed in terms of whether and how it is possible to guide ICTs-related organizational change (i.e. it is possible to organizationally re-design) consistently with the organizational members’ requirements.

These are crucial questions, in that they concern the evaluation of the organizational change/re-design, that is one of the key moment of any action research, and in this regard, the studies by Bassetti, Loser, and colleagues, and Albano and colleagues in this book precisely attract attention on the fact that in real world organizations and action research projects normally there is a variety of possible, and potentially conflicting viewpoints on what might be considered as a desirable organizational change.

[Organizational] members, in fact, belong to different groups; each of them has a specific idea and representation of the (work in the) organization and its desirable future. These ideas, representations and desires are often conflicting, or at least diverging (Bassetti, this volume).
Guiding ICT-related organizational change consistently with organizational members’ needs thus requires to coordinate a number of potentially conflicting individual interests, purposes, and actions.

What the above-mentioned studies of this book suggest is that one might not answer to whether and how it is possible to guide ICT-related organizational change consistently with the organizational members’ requirements, without thematizing the relationship between power, conflict, and organizational change.

In particular, the chapter authored by Bassetti and that authored by Albano and colleagues in this book suggest that power and conflict play an interpretative role with respect to organizational re-design.

Power accounts for the direction of organizational change. Bassetti (this volume) highlights that an evidence that we cannot ignore is that:

participants, professional researchers, and local stakeholders represent a variety of value orientations and commitments that influence both the courses of action and the goal of a project. (Maurer & Githens, 2010; quoted in Bassetti, this volume) At the same time, different groups are equipped with different resources, power, and decision-making opportunities. (Bassetti, this volume).

Albano and colleagues’ study highlights that the extent to which the current regulation choices can be actually modified in order to meet individual goals and needs depends on the ability to sustain one’s own point of view, interests, and choices in the regulation of interdependent processes.

This study also points out that conflicts result from some incongruence between the current structuration of mutual dependences in the work setting and human needs. Therefore, they can be overcome only through some structural/organizational change.

Bassetti’s study similarly highlights that users group resistance to new information systems are usually due to their inconsistency with respect to the endogenous organization of activities and its underlying logic, which to its turn is associated with the actual conditions of work and the related individuals’ needs.

Section 4 of the book also suggests that conflicts should be neither repressed, nor denied. The different groups involved in techno-organizational re-design should instead be provided with spaces for dialogical confrontation.

In this regard, Bassetti’s chapter attracts attention on the role of the researcher in the form of critical and dialogic action research that she puts forward in her contribution. Here the action researcher acts as an agent of visibility and recognisability of the local organization of activities and its logic; as an agent of mutual awareness, by constructing the groundwork for the discussion among different groups of actors of the respective logics, and starting from his/her neutral and “expert” social position, s/he acts as an agent of legitimization of the standpoint of some actors—primary, even thought not exclusively, those more lacking in power—in front of the others.

Loser and colleagues’ study in this book shows how the method of socio-technical walkthrough supports the representation of different perspectives for different stakeholders, enabling them to understand and discuss the influence of others on their behavior. It further provides a chance for agreement, if it is wanted or needed.

Finally, Albano and colleagues maintain that conflicts may be ruled, and precisely oriented towards an organizational innovation involving a power ratio surplus for all individuals involved in the work processes under analysis, thereby escaping from the “zero-sum” concept of power. The action research approach discussed in their contribution aims at this end. In this regard, the authors stress that if the individuals learn the theoretical and methodological knowledge provided by organization theory, and combine it with the knowledge drawn from their everyday practice of work, in order to analyse (on their
own) the organizational structuration of their work processes, they will have greater chances of bringing the sources of conflicts (i.e. structural incongruencies) to light, and therefore of identifying more satisfying organizational choices.

To sum up: Section 4 of the book proposes a number of different approaches and methods for dealing with the relations between power, conflict, and techno-organizational re-design/change of work settings, and some examples of their application drawn from action research fieldworks. The aim is twofold. On the one hand, to continue on the path suggested by Ciborra: i.e. cultivating pluralism in information systems and organizations research, and, on the other, to invite scholars and practitioners to reflect on the methods and approaches (that might be) employed to guide ICT-related organizational change consistently with organizational members’ needs.

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REFERENCES


ENDNOTES


2 This is not the case of Claudio Ciborra, who on the one hand considers Husserl mainly for the issues he raised in the Crisis of European Sciences and Transcendental Phenomenology; on the other hand, Ciborra develops a phenomenology of information systems mainly from the idea of phenomenology of Martin Heidegger, whose position refuses the idea of a subject (no matter how
pure or transcendental) as the original foundation of our relationships with reality (Viscusi, this volume).

3 ‘the moment of opportunity,’ (see Ciborra, 2006, p. 138).

4 ‘a shift of the role and function in concrete situations of usage, compared to the planned, pre-defined, and assigned objectives and requirements that the technology is called upon to perform’ (see Ciborra, 2002, p. 85).

5 ‘Bricolage (from the late Latin bricola catapult) means tinkering through the combination of resources at hand. These resources become the tools and they define in situ the heuristics to solve the problem’ (see Ciborra, 2002, pp. 48-49).