Participation in Broadband Society

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(eds.)

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Volume 1

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Introduction: Approaching the notion of humans as e-actors interacting with Broadband Society

This book aims to focus on the specific dimensions experienced by people in their participation in the broadband society[1]. It explores the concept of the e-actor and discusses the different ways in which individuals, social groups, institutions, operators, manufacturers, policy makers, designers and others in socio-technical systems contribute to human interaction in broadband society. The recent diffusion and implementation of new generations of information and communication technologies (ICTs) and of new trajectories of uses create the need to capture more profoundly the characteristics of contemporary users. The term 'e-actors' underlines the idea that human beings are playing a more powerful role in experiencing and developing ICTs (Vershinskaya 2003; Raycheva 2008; Höflich & Gebhardt 2005). The notion of humans as e-actors refers to the confluence of many different roles and situations that people experiment with in their relationships with ICTs. These different roles include those of user, citizen, customer, consumer, co-designer, and stakeholder, but also those of drop-out and non-user (Gebhardt et al. 2010). The book covers four theoretical and empirical areas of research: Firstly the conceptual perspectives of e-actors; second the emergence of new forms of agency, subjectivity, and mediated interpersonal communication; third the exploration of the broadband society through the eyes of the e-actors; and fourthly the shaping policies and regulations in the broadband society.

The first area debates and challenges different notions and theories of ICTs users and their activities within the broadband society. The chapters presented in this section deal with the development and promotion of an anthropocentric perspective in developing broadband ICTs. In other words how such ICT development should be user-pulled rather than technology-pushed (see also Fortunati 2005). Any such anthropocentric perspective requires one to reflect upon the end user as often being the main target, beneficiary and 'raison d'être' of ICTs (Gebhardt 2008).

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1   The term "broadband society" is used to characterise a society in which information has not only become the primary economic commodity, as it defines the information society, but where people's instant access to a wide variety of modes of information and communication (made up of sounds, images, texts) is becoming a common and – to a certain extent, in certain contexts – indispensable feature of their everyday lives.

The second area focuses on how agency, subjectivity, and identity change in relation to the new trajectories of mediated interpersonal communication as it reconfigures itself in the broadband society. This is very significant for issues of social cohesion and re-organization of social structures as well as for different types of relationship. In addition, the ways in which e-actors are managing their electronic identities and the way they can access ICTs in public and private spaces are seen as crucial for the integration of these new media in the everyday life. This section concludes by mapping the emerging research areas relevant for understanding uses and relationships with ICTs (e.g. cognitive complexity, group decision making, ethical aspects, etc).

The third area addresses issues concerning the electronic portraits of individuals that are raised by the concept of humans as e-actors. What type of electronic information do people deal with, how do they exchange and make use of it in order to present themselves in and through digital devices? What are the styles and modalities of self-presentation in the new technological environment where the analogue and digital technologies converge, diverge, or complement each other? Given that humans use, produce, store, disseminate and retrieve information, these particular processes have been studied in order to understand the production of the electronic self and its social consequences in the digital broadband society.

The fourth area analyses how the broadband society deals with policy and regulation issues regarding new media, and it addresses the conceptual and methodological aspects of the digital divides (Vehovar et al. 2005; Raycheva 2006) that are being produced by new forms of social exclusion, and how these might be overcome. Reflections on the political understanding of ICT scenarios in which e-actors are involved are presented in this section in their various guises as users, consumers, customers, citizens, innovators (Haddon et al. 2005), as well as observations on the current agenda of the debates on the policy about the broadband society.

Overview of Book

The book addresses the issue of e–actors interacting with broadband society by bringing together the work of a group of international researchers who are part of a global community researching ICTs and peoples' participation in the broadband society. The chapters of this book represent a very important moment of dialogue and discussion within this community, as it emerged from an international conference organized by the European network COST 298 in Moscow in May 2007. This conference was unique in the degree to which it was an international and interdisciplinary event focusing on a broad theme – Participation in the Broadband

Society – and in the ways it tried to produce a true conceptual integration of different approaches and disciplines. The subject matter was explored from the perspective of various disciplines, including social sciences, computer and engineering sciences and design. The common focus of attention were the processes in which personal and social relationships, devices, signs and communication practices and its users are mutually shaped.

This book presents the discourses of leading scholars in the form of originally published material that was presented in the "Humans as e-actors" strand of the Moscow conference.[2] Within this context, the chapters that are presented and discussed here include the development of theoretical frameworks as well as current research projects and different methodological approaches in analysing people's practices and experiences of ICT use and their social implications. The present aim is to build upon the dialogues and networks that have grown from this conference, crossing and integrating many different cultures as well as conceptual perspectives, with a view to developing a new theoretical position on humans as e-actors to emerge from this collective work.

Central Themes

The empirical research and conceptual work presented here is organised according to the four areas outlined above. The chapters in the four sections of this book shall contribute to a better understanding of the notion of humans as e-actors by examining their interaction with, and the outcomes of their participation in, the broadband society The concept of the e-actor is introduced with the purpose of helping scholars, policy makers, designers, etc. to adequately conceptualise both the complex and crucial role these e–actors play in the broadband society and the enormous potentialities they represent for the development of the knowledge society. In the following sections we outline the various chapters that comprise the aforementioned research areas.

Theme 1: Conceptual perspectives on e-actors interacting with broadband society

In this section the authors discuss theories on humans as e-actors based on empirical findings gathered from studies carried out in Italy, Austria and Slovenia. Key

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2 Other chapters presented in the same strand are collected in the book "Experiencing Broadband Society", edited by Gebhardt et al. (2010).

to these chapters is the emphasis on the way that the interdependence between humans and those features of ICTs that are meant to empower them as social actors is shaping their different forms of participation in the broadband society. The increasingly high penetration of broadband technologies and services leads to unforeseen tensions between users and technologies, and these aspects are explored in the first four chapters, with emphasis on the pull from the user rather than the push from the technology.

Leopoldina Fortunati in her chapter *From ICT User to Broadband e-Actor* looks at the new way in which the traditional ICT user could and should be conceptualised. Her chapter aims at analysing the shift that is now occurring from ICT users to broadband e-actors, who are 'augmented' users. The research question explored in this chapter is: In the face of the broadband penetration, are the roles and identities of e-actors changing? If so, in which direction and with which modalities? The thesis that Fortunati discusses here is that broadband actors are subjected to increasing social control, social negotiation, and power conflict. The use of the new media is configured more and more, not as a generic activity, but as a veritable labour, which is immaterial labour. In this conceptual framework, ICT use should be understood as a political domain, in which the control and dominion over people's everyday life will be confronted by a strong process of self-determination and valorisation by people themselves. Through broadband technologies, e-actors have accelerated and invigorated the process of acquisition of a new power by means of which they re-configure the world of information and communication on the basis of their subjectivity. The author tries to show that it is on the base of its intrinsic, political value that technology use is increasingly becoming a political domain in itself.

However, the elaboration of the concept of e-actors also may start from other points of view. *Gregor Petrič, Andraž Petrovčič and Vasja Vehovar*, in their chapter *Communication Technology Use as a Structuration Process: Exploring the Communicative Portraits of Active Users,* view the notion of the e-actors through the lens of the convergence of the usage of different ICTs. The authors advance the notion of an active user as a central notion for improving the current understanding of how shared ways of achieving communication goals through various interpersonal communication channels are related to people's socio-cultural embeddedness, and their active role in experiencing the social consequences of (un)mediated modes of communication. This chapter argues that the active use of communication devices should be conceptualised as a structuration process within which users' awareness of media interactional affordances, expectations of media-related social outcomes, their innovative appropriation and deliberative selection of media are embedded in socio-cultural arrangements and socio-technical systems that set the framework of evolving usage patterns. In order to identify such patterns, a research project

was conducted by Petrič, Petrovčič and Vehovar on a representative sample of the Slovenian population which yielded four groups of users of communication technologies with distinctive communicative patterns and socio-cultural features. These groups were identified by means of a cluster analysis and labelled as techno-ascetics, cyber-communicators, techno-rationalists and mobile-traditionalists. The chapter concludes with an analysis that details the social consequences of emerging communicative portraits, demonstrating how these four clusters differ in the size of their social support networks and levels of social participation associated with the specific configuration of their use of communication technologies.

The reflection on e-actors might also start from the vantage point of design, as in the third chapter by *Hajo Greif, Oana Mitrea, and Matthias Werner,* entitled *Usability vs. Functionality? Mobile Broadband Technologies and User Agency.* Their argument starts from the observation that, while providers hope that mobile broadband devices and applications will define the future of telecommunications, and while the dissemination of devices is increasing, real-world usage does not live up to the promise of the widespread adoption of newly available services. One possible reason for this discrepancy is that both the convergence of functions and applications in mobile broadband devices, and the everyday uses intended by their designers, imply trade-offs between the norm of usability and the ease and intuitiveness of accessing the functions of a device with the norm of functionality and the control over, and in-depth access to the functions of a device. The working hypothesis in this chapter is that the way in which these possible trade-offs are addressed in design depends on developers' preconceptions of users' expectations and actions. On the background of a discussion of the notion of user agency, the two norms mentioned are critically compared by Greif, Mitrea, and Werner, with respect to their value as conceptual tools for analysing the case in question. In a second step, three different design strategies towards the issue of functionality and usability, and the notions of user agency they imply, are matched against findings from a recent Austria-wide survey on the usage of advanced mobile applications. Users' perceived needs and adoption strategies appear to suggest that different degrees of specialisation and adaptability of functions should be available. Finally they question the seeming disjunction between the norms of usability and functionality.

The discussion on the notion of e-actors is further advanced by examining strategic issues pertaining to the understanding of the evolution of socio-technical systems in contemporary societies. It is within this framework that *Giuseppina Pellegrino* in her chapter *Mediated Bodies in saturated environments: Participation as co-construction* deals with the issue of e-actors, elaborating further on powerful features of current socio-technical systems such as the notion of a saturated environment. The chapter starts from the observation that social interaction

is increasingly intertwined with technological artefacts. Such a process changes the characteristics, definitions and expectations related to participation. According to Pellegrino, the issue of participation can be interpreted in the light of the convergence of bodies and environments under the mark of an increasing dependence on technology. ICTs in particular mediate and contextualise both interaction and action towards other actors/systems. Indeed, social actors are more and more required to use complex socio-technical systems in their everyday life. As users, they are required to manage new contexts and especially the crucial combination of mobility and proximity in order to be skilled social actors and competent communicators. Pellegrino argues that to participate means to become engaged in patterns of co-construction involving mobile, convergent and saturated communication environments. This implies that participation is linked to access to infrastructures and resources of connectivity, even if this does not automatically guarantee a better connection between actors and environments. Connection and connectivity cannot be considered the same: saturated environments represent both catalysts and constraints to effective participation by users.

In summary, this first section proposes to move from the established concept of ICT users to the new notion of e-actors, in order to face the new usage dimensions of information and communication technologies in the broadband society. It therefore tries to include and to elaborate upon several research traditions. Firstly, it encompasses the user-centred research approach, which has produced a considerable number of studies on the domestication (see, for example, Silverstone & Hirsch 1992) and social representation of ICTs (Contarello et al. 2008; Fortunati & Manganelli 2008). Secondly, this section draws on science and technology studies and social informatics inquiries into the role of users in technology development (Bijker & Law 1992; Oudshoorn & Pinch 2003, 2008; Kling et al. 2005), and thirdly, it refers to media studies which have proposed the notion of the "active" user (Livingstone 1999; Blumler & Katz 1974). These different traditions contribute to identifying the main aspects of what makes up the e-actor: the integration of identities, the integration of ICT uses, the role of human beings in design and the contradictions posed to them by technologically saturated environments. The chapters address different new technologies, although the main focus is on mobile technologies.

Theme 2: Emerging Interpersonal Communications among e-actors

Understanding the communications, inner feelings and subjectivities of e-actors and how they integrate their personal ICTs into the intimacy of their everyday lives is at the heart of this section. It provides new insights to the definition of

e-acting and social interaction in public and private media spaces. This is echoed for example in the emergence of new forms of agency (see also Greif et al. in Theme 2 of this volume), subjectivity, and mediated communication as new integral parts of the developing broadband society.[3] Such issues are becoming increasingly important for all users of ICTs. All three chapters in this section examine the social fabrication of mediated communication in the context of both new digital media and devices which e-actors are using to establish and maintain their social contacts and relationships.

The first chapter in this section, *Mobile Culture and Subjectivities: an Example of the Shared Agency between People and Technology* by *Amparo Lasen,* discusses the role of mobile culture in the transformation and production of e-actors as subjects, understood here as changing and heterogeneous entities both in a material and an informational sense. The author shows how mobile phones play an ever more important role in the constitution of subjects and subjectivity (in what she terms "subjectivation processes"), both in the shaping of the self and how the self is perceived by others. This phenomenon is reflected in the example of how subjectivity is related to the processes of co-production between people and their technological devices. Lasen's analysis is situated within contemporary theoretical approaches that challenge the views on the status of objects and subjects. In this regard she discusses a recent contribution of the Italian philosopher Giorgio Agamben (2007), who revisits Foucault's concept of the *dispositif* and its role in answering such questions. Her theoretical analysis is illustrated by an example drawn from ethnographic and qualitative research about mobile phone use among couples and how this leads to a trans-personalisation of this device. Since the personalisation of mobile phones is a way of individuation, self-representation and recognition, it not only concerns the single individual but also other entities, such as couples and other dyadic relationships. At the same time it reveals how mobile phone usage is embedded in specific power relationships, reciprocal control and monitoring and how this, in turn, helps to identify and consolidate the relationships of the couples investigated.

While Lasen's chapter deals with the subjectivity of e-actors and the way in which they expand it in situated contexts which are emerging in the use of broadband devices such as third generation mobile phones, *Julian Gebhardt* draws on the social, inter-subjective, pre-conditions of these processes. The title of his chapter is *Alfred Schütz and the media: The intersubjective constitution of mediated interpersonal communication in everyday life.* The theoretical foundation

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3 For more-in-depth analyses of the concept of human agency in the context of ICTs by authors present in this volume see Lasen (2005, 2007); Lobet-Maris et al. (2008); Lobet-Maris and de Terwangne (2007); Lobet-Maris and Gallez (2009); Grandjean et al. (2008), Greif et al. (2008).

employed here is the socio-phenomenological concept of the "life-world" as it has been developed by Alfred Schütz (1967) and subsequently elaborated by Alfred Schütz and Thomas Luckmann (2003). These studies inquire into one of the most fundamental problems of any kind of social (inter-)actions and consequently of any types of mediated communicative activities: the problem of inter-subjectivity, which may be described here as the problem of co-ordinating reciprocal communicative actions, i.e. such activities in which at least two people are orientated towards each other. Gebhardt first draws on Schütz' notion of communicative actions as "expressive", "meaningful" and "goal-directed" acts of working. Based on Schütz' concept of everyday life tools as meaningfully constituted artefacts, he then conceptualises communication technologies as communicative working tools, whose interpersonal usage is based on reciprocal orientations, rules and mutually established social practices. In conclusion, the author shows how Schütz's work can help us to better understand the constitutional processes of using and adopting communication tools not only in their technological, but also, and especially, in their social and inter-subjective dimensions.

The analysis of e-actor's agency in this section is completed by the reflections of *Jane Vincent* entitled *Me and My Mobile.* The author discusses the question of how the identity of e-actors and their emotions, mediated by new technologically advanced devices like the mobile phone, are closely related to the issue of situated (inter-) subjectivity (Vincent & Fortunati 2009). Based on various empirical research projects conducted by the author and the Digital World Research Centre (DWRC) since 2003, Vincent's chapter examines the ways in which people have appropriated the mobile phone into their everyday lives. From the theoretical perspectives of the interactionists Goffman and Hochschild, the author explores people's use of the mobile phone as a means of maintaining social interaction between family, close friends and work colleagues. In contrast to situated individual-to-individual connectivities, Vincent's research also highlights the me-to-machine relationship that many people, particularly children, have now established with their mobile phones. This is exemplified by the ways in which they explore and play with these devices, their technological capabilities and their convergence with other broadband technologies. The author goes on to describe how such individual-to-individual and me-to-machine relationships have given rise to a specific emotional discord – both with regard to users' emotions to all that the mobile phone enables and with regard to the demands that are placed upon them, such as to be available at any time and to respond in ways that are different from how they feel at a certain point in time.

In summary, this second section is devoted to developing a deeper understanding of e-actors and agency as it becomes visible in the relationship between people and technology. Drawing on the lessons from such theorists as Foucault and

Agamben, Schütz and Luckmann, and Goffman and Hochschild, the discourse developed here deepens the understanding of both the limitations and the opportunities that the use of the new ICTs and, in particular, the mobile phone implies in the domain of (inter-)subjectivity, personal identity and emotion in situated contexts across different cultures in countries such as Spain, Germany and the UK.

Theme 3: Exploring the notion of e-actors within the information society

This third section presents current research from Russia that examines the very notion of the emergence of the e-actor from within the information society. Starting from the concept of the noosphere¸ theoretical perspectives are developed that offer a new approach to scrutinising the ways in which humans are interacting with ICTs, thereby combining the biological, technological and social realms. This section is composed of only two chapters, both offering a significant contribution to this still under-exposed debate.

This section is opened by *Vsevolod M. Zherebin*, who presents a chapter entitled *Information Society as the Law-governed Result of the Evolution of Information.* Zherebin approaches the phenomenon of information from the perspective of the process of its evolution, from its emergence to the modern social forms and formation of the information society. The thesis Zherebin vindicates here is that information, contrary to the accepted conception, is not an attribute of matter in general, but appears only together with the animate life and represents an inherent part of it. The process of the evolution of information and current concepts of it are considered from the point of view of the general information theory. Since the evolution of information, the development of concepts relative to it and the growth of informational possibilities in society are interconnected, these are examined in parallel fashion in this text. Discussing the natural history of information, the author takes an untypical stance towards an evergreen topic that has inspired a huge corpus of scholarly literature, but that, in its capacity of being the regulator principle of the post-modern societies, has also inspired policy-makers, professionals, consultants, public administration managers and many other social actors, as the literature especially at European level shows.

The second chapter *Theoretical Approach to the Concept of Humans as e-Actors* is authored by *Olga Vershinskaya* and reflects on the fact that e-activity is one of the possible perspectives with which to study change in the relationships between society and ICT. For her, the emergence of the notion of e-actors is a direct consequence of the fact that the dissemination, adoption, and appropriation of the new technologies have posed the problem of overcoming the fragmented images of digital users and their portraits. According to Vershinskaya, there is still no ho-

listic theory that studies users and the social influence of ICT dissemination. She thus discusses the formation of an action-oriented multidisciplinary approach to research, based on other theories and approaches: semiotics, noosphere theory, the theory of sociocultural reproduction, domestication theory, and the social portrait genre. From Vershinskaya's point of view, there are different options "to draw" e-portraits: an e-portrait may be a part of the social portrait, or a list of e-activities performed, or a type of user and so on. The pragmatic value of e-portraits is also considered, since they can be used in many different ways: to monitor the transformation of the service sector, to measure social differentiation and stratification, or to study lifestyles and other issues involved in measuring users' behaviour at quantitative and qualitative levels. It is also argued that the importance of cultural, informational, and psychological aspects of the social dynamics is growing. In this framework, e-activity is analysed as part of the computer culture in general.

This third section offers a fascinating glimpse at the current debate on e-actors that takes place in Russia, where next to rural areas still characterised by a limited diffusion of the internet, urban areas are conversely 'informatised' at an astonishing pace. Under these specific conditions, a specific school and type of scholarship evolves with regard to the diffusion of computers and information systems – a scholarship whose importance to research on issues regarding the information society and e-actors should not be underestimated.

Theme 4: E-actors in the institutional context: Policies and regulations from e-actors' point of view

The broadband society is dependent on a variety of European policies and regulatory regimes to ensure ubiquitous and equitable opportunities for e-actors to participate in this society. These policies and regimes are of course the fruit of sometimes hard negotiation processes between the different e-actors involved, understood as users, consumers, citizens and so on. Unfortunately, the results of these negotiation processes are not always in e-actors' favour. Therefore it is necessary to analyse the legislation corpus very carefully and be aware of its relevance to people's lives. Policies may be attentive to people's different needs and social and economic situations, so as to enable them to contribute to the arenas in which they participate. However, as it turns out, policies may also be found to be pushed by industry's interests, either forcing people to live according to new standards, thus in a certain sense designing the modes and ways in which they and next user generations may participate, perhaps leaving out large sectors of the population, or failing to achieve any goal in the first place. In particular, the following chapters examine the ways in which researchers from some Central- and South-Eastern

European countries – namely Bulgaria, Greece, and Slovenia – address some of these issues, with special attention to the transition to digital television service as well as to the means of avoiding digital divides within European societies.

This last section is opened by *Lilia Raycheva's* chapter *Television: The Good, The Bad and the Unexpected Challenges of ICT. In this chapter, the author argues that t*he rapid progress of the information and communication technologies has intensified the issue of their influence on the global/regional/national/local communication environment. According to Raycheva, that progress stimulates the mass media to pass from an extensive into an intensive phase of development. A market-driven technological convergence is taking place across the media industries. The combination of terrestrial broadcasts with cable and satellite TV to the households in EU countries is expected to grow into a strongly competitive environment, allowing for programmes, technical and financial backups. The type and pace of these changes may present challenges to both EU citizens and the European governments, policy-makers, regulators and broadcasters. Digital compression of the spectrum has already given access – continues Raycheva – to the widest possible range of programmes by offering many commercial and public services. Broadband TV which enhances the possibility of the individual selection of programs, is now on the agenda. Meaning that, television actively moves towards diversification of the services on offer. It is becoming a service itself. At the end of her chapter, Raycheva examines the contemporary European audiovisual policy developments, particularly in terms of the digital switchover. The transformation processes that involve television are a sensitive issue, given that TV use is embedded in the everyday life of millions of people, and given that the transformations illustrated by Raycheva are more technologically driven than user pulled.

Not only television, but also the Internet is a key component of the everyday life of millions of people. This issue is addressed by *Panayiota Tsatsou* in her chapter *Digital Divides in Greece: The Role of Culture and Regulation in Internet Adoption. Implications for the European Information Society.* Tsatsou looks at digital divides in Greece from a cultural and regulatory perspective, with the aim of making a contribution to the theme of the participative role of e-actors. The chapter first draws on the scholarly literature on digital divides as a phenomenon embedded into a social context in which various other kinds of social exclusion take place as well. Then, the author argues that the existence of digital divides in Greece is to a significant extent a result of both culture and regulation. Based on the discussion of various policy schools and paradigms, and highlighting the tensions between the ideology of the information society and the power of the market, the state and resistant citizens, Tsatsou's chapter opens up a discussion about how we should view the relationship between culture and regulation in the Greek case. In particular, she poses the question: 'Can culture be regulated in the Greek

information society?' Moreover, data and evidence concerning the Greek puzzle of digital exclusion allow Tsatsou to apply her general socio-cultural and regulatory account to a case-study that is of particular interest, since it entails significant implications for future research on digital divides in Europe.

The issue of digital divide, analysed by Tsatsou in a particular case study – Greece – is also taken up by another author, *Vesna Dolničar*, in her chapter *Regulating on an informed basis: Integrative methodological framework for monitoring the digital divide.* The author points out that, when analysing the dynamics of the digital divide, the answer to the seemingly simple question 'Is the digital divide increasing, decreasing, or is it constant?' is not straightforward. Dolničar introduces an integral methodological tool that could comprehensively address this question.

This new methodological approach is based on the assumption that none of the established statistical measures – absolute measures, relative measures and S-time-distance are considered here – truly communicates the essence of a certain digital divide phenomenon. Even the simultaneous reporting of all three measures is insufficient. In order to monitor and interpret the dynamics of the digital divide it is thus very important to explicitly take into account future scenarios of ICT diffusion among the subjects observed (e.g. population segments, countries…). Dolničar has developed these scenarios within the broad framework of the diffusion theory of innovation (Rogers, 1962/2003), but with a critical view on two of its implicit assumptions that amount to a deterministic conceptualisation of the diffusion process: the form of the diffusion function and the anticipated level of the final penetration rate. The author argues that the proper measure – that could be easily integrated in the process of benchmarking, monitoring and regulating the basic digital divide on the national and international levels – can only be provided if we anticipate and take into account the full distribution functions of the compared subjects or population segments and the location of the subject at a certain point.

In this fourth and last section, European policies and regulation regimes as well as methodological issues related to measuring the different forms of digital divides are thoroughly discussed. The two socio-technical systems under consideration here are television and the computer/internet. At the European level, humans as e-actors are confronted with policy-makers, regulators and media groups engaged in dismantling the socio-technical system of the analogue television that had been co-constructed by all these social actors. Raycheva's chapter illustrates very well what is at stake in the transformation of television nowadays. With regard to the Internet, Tsatsou introduces the culture variable into the debate on the digital divide, and thus introduces an anthropological sensitivity into that debate that had been missing so far. To that same debate, Dolničar contributes a new methodological instrument designed to properly measure the otherwise elusive dynamics of the

digital divide. The major common concern of these three final chapters is not to conceptually cope with the observation that humans are lagging behind the technological developments, for the latter's sheer rapidity and market-drive. The chapters also point towards solutions to this problem. In the face of the developments provided by scientific and technical research, more attention should be paid to the public's best interests by policy-makers, NGOs, and consumer associations.

Conclusions

Putting together and integrating different disciplinary perspectives, this book presents highly differentiated cross-cultural approaches and theoretical elaborations that are helpful in thoroughly understanding the relationships between humans and technology, the social meanings and functions of the new media, and the development of socio-technical systems.

One main focus of this book is on what one may call the "normalisation" of ICT uses in everyday practice, or the fact that uses become embedded in personal and social rituals and daily rhythms (Licoppe & Smoreda 2006). We refer, in contrast to studies emphasising innovative uses, to the way in which devices, applications, functions and services are embedded in the socio-technical environment as a part of the normative system that frames users' everyday social practices and which also embodies bottom-up innovations. This topic is approached from two different angles: Firstly, the ways in which 'active' users select and adapt new technologies, and, secondly, the ways in which social actors do not recognize a need for using these technologies, either ignoring or being indifferent towards them, or even actively choosing not to use them. These dimensions serve to reveal key aspects of the agency of what we define as e-actors. We analyse different technologies, and explore the notion of e-actors on different levels of activity, as well as we pinpoint the idea that access to some technology, in itself, does not warrant some actors' general agency as social beings.

Another main outcome of this book is that the notion of the e-actor in the broadband society cannot be defined simply in relation to a device, service or application, or to a certain set thereof, but only in its relation to the socio-technical systems that are co-constructed by e-actors and in turn shape them in the course of adoption, diffusion, appropriation, domestication and use. Thus it is evident both from the empirical findings and from the theoretical reflections presented here that one should look at a technology not merely as a material object, but as a node in a network of social relationships and human-machine relationships that mutually shape each other. This allows us to look at the e-actor as a multidimensional and multidisciplinary notion that comprises all the negotiations, the tensions and the

conflicts in which actors are involved. For example, this notion of e-actors might make policy-makers aware of the fact that they should not confound the concept of the Internet user with that of the citizen because they are not equivalent. Moreover, it enables us to look at the power relationships between different e-actors and to understand how the dynamics between them are evolving.

In terms of future directions of research, the conceptual framework introduced in this volume may serve firstly as a starting point for further empirical research that can be used for developing new applications, devices, features and so on. In this way, our approach may be of service to the development of new technologies or services in both private and public sectors. A second task for future research would be to connect the dimensions of agency developed here with existing theoretical discussions and research in the fields of Science and Technology Studies, technology policy, and technology assessment, from which either side may benefit. Lastly, while the chapters in this book already indicate the complexity and the importance of the phenomenon of the e-actor, a further step is required in developing new methodological approaches to that phenomenon, helping to identify and describe its properties and implications more accurately both on an institutional and interpersonal level.

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