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Introduction

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The history of Information and Communication Technologies (ICTs) is full of developments, surprises, debates and as many certainties as many uncertainties. Landmarks in the history of ICTs that stand out including the first packet-switching network, the Transmission Control Protocol (TCP) and the Internet Protocol (IP) in the late 1960s, the development of hypertext language in 1989, the release of the World Wide Web by CERN for general use in 1993, and the spectacular developments around Broadband, Web 2.0 and Web 3.0 from the mid-2000s onward, cannot portray sufficiently the scale, magnitude and wealth of breakthroughs in the domain of ICTs and ICT-enabled services.

At the same time, ICTs and their histories have been marked by dichotomies, dualisms and binary tensions, the most important of which is that concerning the role of ICTs in the society. On the one hand, acknowledging the significance of rapidly developing technologies such as Internet-based technologies resulted in strongly argumentative, normative and even emotional approaches that either glorified or cursed the Internet for driving a fast-changing and increasingly challenging and globalising mode of living. On the other hand, claims about the 'Internet revolution' have been treated with particular caution, resulting in the downplaying of the Internet as technology, the advocacy of the importance of social contexts within which technology is designed, and approaches in support of the social shaping of technology (Tsatsou, 2014)

At the core of such dualisms and associated debates is the question of the role of ICTs in social inclusion. Social inclusion is of immense interest to technology experts, activists and policy-makers due to the way information and communication technological innovations such as those based on the Internet have been rapidly and largely unexpectedly emerged, affecting people's positioning in the society. Questions regarding the role that technology might play in people's positioning in the society began to be examined by researchers and scholars mostly from the turn of the 21st century (e.g., Warschauer, 2003), with the emphasis ranging from the study of the role of media technologies and ICTs in enhancing people's citizenship (e.g. Coleman and Blumler, 2009; Mossberger, Tolbert and McNeal, 2008) to the study of the barriers to equal opportunities for everyone to access and use such technologies (e.g., Ferro et al., 2009; Norris, 2011; Tsatsou, 2011, van Dijk, 2005). However, existing research hardly offers a wide-ranging and inclusive account on the role of innovative ICT-enabled services in social inclusion. Instead, it either focuses on single techno-centric issues, such as that of technology diffusion and adoption (e.g., Rogers, 1995), or it approaches questions concerning social inclusion in a rather vague and fragmented way. Even research that focuses on human interaction via technology does not seem to delve sufficiently into issues relating to technology's management, the diversity of society's responses to technological development and the policy strategies that mediate the intercourse between society and technology.

There is a continuing need to make sense of complex socio-technical systems that are associated with the adoption, management and policy of new technological services in order to unpack the intercourse of social inclusion and usability of innovative ICT-enabled services. It is our hope and belief that this book can make some contribution towards fulfilling this need.

The vision of this book is to bring together latest thinking and ground-breaking research in the area of innovative ICT-enabled services and social inclusion, in order to dig deeper into the socio-technical, management and policy dimensions related to our increased reliance upon ICT-enabled services for reinforcement and enhancement of social inclusion. Specifically, the book focuses on aspects and benefits of social inclusion that are highly driven by the usability and employment of ICT-enabled services, rather than on the features of the technology itself or just the sociological aspects of the issue. The case studies in this book delve into, explore further and critically assess whether ICT-enabled services reinforce social inclusion and how they impact the delivery of public or community related services to individuals and whole populations who previously did not take advantage of such services due to demographic, personal or broadly social conditions. Also, the case studies in this book shed light on whether ICT-enabled services and products can lead to enhanced social capital and whether individuals or groups become more aware of macro-space, non-personal issues due to more engagement with technologically distributed information and the provision of new technological means for exchange, sharing and collective action. The book offers analysis and evidence that inform the reader on the potential of improved teleworking capacity and how ICTs can lead to a new world of entertainment, occupation, social networking, political communication, and e-governance possibilities. The contents of this volume also touch upon diverse groups of the society, such as young people, older adults, farmers, professionals and students.

In the midst of ICT-enabled innovations that are being introduced and spread rapidly and in all different contexts, this book provides valuable insights on critical aspects of social inclusion that arise or could emerge as innovative ICT enabled products and services proliferate. The book offers original insights into emerging issues and agendas concerning the role of usability of ICT-enabled services in social inclusion and maps out the implications for the emergence of new forms and attributes of social inclusion. It contains fifteen original and timely contributions to the critical thinking and knowledge enhancement about social inclusion and usability of innovative ICT-enabled services, which run at both the theoretical and empirical case study levels, involve the study of various population groups and draw concepts and insights from different disciplines. It is a cutting edge research book written not only for researchers, students and academics, but also for stakeholders and policy makers. The contributing authors are scholars and researchers with expertise in Information Systems, Management, Information and Communication Technologies, New/Digital Media, and Communications Policy, offering a collection of chapters that provides original and powerful insight into the value of ICT-enabled services for the various facets and evolving features of social inclusion.

Hence, the contribution of this book can be summarised as mostly lying in the following areas:

1. Shedding light on long-standing and ongoing debates and themes related to the theme of social inclusion and usability of ICT-enabled services.
2. Examining a range of countries and contexts (e.g., Australia, India, UK, USA), while also shedding light on a range of sectors (e.g., e-health, telework, e-government, e-entertainment, farming) where the presence and influence of ICT-enabled services are broadly perceived as crucial.

3. Adopting an interdisciplinary and reflective approach to developing new knowledge on phenomena, topics and issues that are pertinent to the theme of social inclusion and usability of ICT-enabled services.

This book is structured into 3 parts. Part 1 focuses on theoretical concepts related to social inclusion. Part 2 captures a number of cutting edge ICT-enabled services used within organisations and society, while Part 3 assess the adoption, use and management of ICT-enabled services to achieve social inclusion. Details of each chapter are outlined below.

Part 1: Examining the theoretical foundations of social inclusion and usability.

The chapter by Efraxia D. Zamani, titled ‘Social Inclusion and ICTs: A Literature Review through the Lens of the Capability Approach’, argues that in the context of today’s hyper-connected society, adopting Information and Communication Technologies (ICTs), which are considered to be a way towards achieving social inclusion is no longer adequate to ensure participation of all. ICTs need to specifically address the needs of disadvantaged individuals to empower them and support them in improving their welfare and meeting their goals. Drawing upon the Capability Approach, this chapter looks into the abilities, needs and personal wants of disadvantaged individuals in relation to ICTs.

Christoph F. Breidbach contributes a chapter on ‘Connectivity: A Socio-Technical Construct to Examine ICT-Enabled Service’ that explains vividly how advances in Information and Communication Technology (ICT) transformed interactions between service providers and their customers. It shows that ICT-enabled customer-firm interfaces are increasingly the norm in service contexts such as healthcare or consulting. It argues that academic research has not fully caught-up with this new reality. The chapter introduces the ‘connectivity’ construct as a socio-technical lens to advance the current understanding of ICT-enabled service.

The chapter by Patricia McKenna on ‘Re-conceptualizing Social Inclusion in the Context of 21st Century Smart Cities’ explores and develops the social inclusion concept in the context of smart cities with the aim of re-conceptualizing inclusion for 21st century urban environments. Aspects and benefits of innovative ICT-enabled services and social inclusion are examined in contemporary urban spaces, along with emerging forms and attributes. This chapter introduces and theorizes ambient inclusion, and operationalizes an ambient inclusion framework for the exploration of innovative ICT-enabled spaces, services, and designs in smart cities.

Finally, the chapter by Arthur Glenn Maaíl, Sherah Kurnia and Shanton Chang on ‘Enhancing Social Inclusion through Optimal Community Participation Levels in ICT4D Projects’ acknowledges that user participation in Information and Communication Technology for Development (ICT4D) projects is critical to promote social inclusion for the local community. The authors develop a conceptual framework that identifies the optimal level of user participation based on the approach deployed and the relevant conditional factors affecting user participation for each approach. The study enhances the current understanding in managing user participation in the development of ICT4D projects.

Part 2: ICT-enabled services of value to society and organisations

The chapter by David Yates, Girish Jeff Gulati and Christine B. Williams on ‘Understanding the Impact of Political Structure, Governance and Public Policy on e-Government’ examines two distinct but related measures of e-government effectiveness; namely the online service index and the e-participation

index reported in the 2014 e-government survey conducted by the United Nations. The study analyses the impact of political structure, public sector performance and policy initiatives on both indices in 175 countries. The study suggests that the path to e-government leverages different strategies depending on a nation's political structure and processes, and that authoritarian countries may be utilizing e-government to maintain the status quo.

Avijit Sarkar, James Pick and Jessica Rosales contribute a chapter on 'ICT-enabled e-Entertainment Services in United States Counties: Socio-Economic Determinants and Geographic Patterns' that examines spatial patterns and determinants of the use of the internet for entertainment purposes in the counties of the United States. Spatial patterns of e-entertainment diffusion in U.S. counties indicate an urban-rural divide. High use of e-entertainment amidst low e-entertainment clusters is often found in counties that are home to large public universities, military reservations or government labs. This chapter fills an important void in the digital divide literature as research and related discourse shifts from measuring and examining differences in access of information and communications technologies (ICTs) to differences in actual use of the internet.

The chapter on 'eHealth as an Enabler of Social Inclusion' by Ken Clarke, Adam Lodders, Robyn Garnett, Anne Holland, Rodrigo Mariño, and Zaher Joukhadar shows how eHealth can improve the access and reach of health services to include those sections of the community who can be otherwise excluded due to factors such as advanced age, having English as a second language, or remote location. The practical examples in this chapter demonstrate how well designed eHealth initiatives that have simple user interfaces and 'ambient' sensing technologies can drive and obtain both better health outcomes and improved levels of social engagement. Society can also benefit from efficiency gains that allow healthcare professionals to address the needs of more people, particularly in rural and remote areas with clinical skill shortages.

The chapter by Victoria Carty on 'Challenging the Cost of Higher Education with the Assistance of Digital Tools: Case Studies of Protest Activity in Canada and the United States' presents two case studies involving Canada and the United States that focus on how activists use digital tools to challenge the cost of higher cost of education using digital tools. It shows that new communication technologies allow social movement actors to operate in a new political terrain that enhances not only virtual, but also face-to face forms of interaction, debate and critical thinking. Social movement theories are applied to show the relevance of peer-to-peer networks that allow activist to circumvent state and corporate-controlled and owned media, allowing them to take ownership of the narrative of their protest activity.

Rachelle Bosua, Sherah Kurnia, Marianne Gloet and Antonette Mendoza's chapter is titled 'Telework impact on Productivity and Wellbeing: An Australian Study'. They argue that forms and locations of work have changed dramatically over the last few decades. Facilitated by Information and Communication Technologies (ICTs), it is expected that mobility in work (telework) will increase. Using Australia as the study context, this chapter shows that telework improves team productivity and individual wellbeing and highlights key elements that contribute to effective telework: appropriate IT support, trust, management support, a supportive telework culture and access to hybrid telework arrangements. A focus on one or more of these elements would improve social inclusion of workers from a productivity and individual wellbeing perspective.

The chapter by Sherah Kurnia, Md Mahbubur Rahim, Serenity Hill, Kirsten Larsen, Patrice Braun, Danny Samson and Prakash Singh on 'Supporting Regional Food Supply Chains with an E-Commerce Application' evaluates the effectiveness of the Open Food Network (OFN) in connecting and supporting regional food supply chain communities in Australia. In this chapter, the authors show how an

innovative E-Commerce application improves farmer's access to local markets and consumers' access to fresh local produce, as well as optimizes the regional food distribution and improves the local community welfare. Thus, they demonstrate the potential of ICT-enabled innovations to include disadvantaged local food players in order to establish a more socially sustainable and fair trading environment.

Part 3: Adoption, usage and management aspects surrounding social inclusion and usability of ICT-enabled services

The chapter by Bianca C. Reisdorf and Darja Groselj on 'Digital Divides, Usability and Social Inclusion: Evidence from the Field of E-Services in the UK' examines how digital divides and usability affect engagement with e-services. Using the context of British Internet users and non-users, the chapter investigates whether Internet users are more likely to use any government services as compared to non-users and what factors shape use of e-government services. The study shows how that apart from socio-demographic factors, digital skills and high quality, ubiquitous Internet access are crucial for use of e-government services. This has implications for the necessity for high levels of usability in the design of e-services and the acknowledgement that Internet users are not one homogeneous group.

The next chapter by Mohammad Hossein Jarrahi and Luke Williamson titled 'Mobility of Work: Usability of Digital Infrastructures and Technological Divide' focuses on the technological barriers of mobile knowledge work. The study examines technological barriers that diminish the usability of systems for mobile knowledge workers and plague communication, information management, spatial mobility and navigation of organizational boundaries. These barriers can lead to a potential digital divide between mobile workers and those who work from traditional work settings. This study further offers an overview of adaptive strategies pursued by mobile knowledge workers in addressing these technological barriers. Findings from this work inform the design of more inclusive technological infrastructures that cater to the needs of mobile knowledge workers.

Deana A. Rohlinger and Shawn Gauden contribute a chapter on 'Overcoming Obstacles to Activism with ICTs: An Analysis of Move.Org and the Florida Tea Party Movement'. Drawing on participant observation data and 52 interviews with supporters of MoveOn.org and the Florida Tea Party Movement, the study identifies three obstacles to political participation: motivational obstacles, organizational obstacles, and feelings of efficacy. The findings show that ICTs can help individuals overcome motivational obstacles by connecting information to political activities and by creating opportunities for individuals to learn new political skills. Organizational obstacles can be overcome by cultivating identities focused on supporters' roles as citizens and make them feel efficacious by linking them to a larger political community.

The chapter by Ranjan Vaidya on 'Social Inclusion, Farmer Resignation and the Challenges of Information Technology Implementation' explores the role of Information Technology in achieving social inclusion of farmers in India using stakeholder theory and Bourdieu's theory of practices. For this purpose, a qualitative approach is used to study the case of a state government organisation in India that implemented an information technology project to provide fair prices to the poor farmers by interconnecting the agricultural market yards of the state. The study highlights stakeholder resignation as a type of practice that is exercised when the powerless stakeholders have lost all hopes of their social inclusion. The study has important implications for academics, policymakers and the agricultural industry.

The next chapter by Jyoti Choudrie, Sutee Pheeraphuttarangkoon, and Uchenna Ojiako on ‘Smartphones adoption and usage of 50+ adults in the United Kingdom’ explains that Smartphones are devices providing advanced computing capabilities and connectivity that offer immense benefits and convenience to diverse users. The chapter investigates the adoption, usage and diffusion of smartphones within UK’s older adults through an online survey of North London households. The study shows that Perceived Enjoyment was the strongest adoption factor followed by performance expectancy, compatibility, facilitating conditions and effort expectancy. Moreover, education and experience were identified as the moderating adoption variables. The identification and understanding of the factors that encourage or inhibit smartphone use within the older adult population can assist future researchers to identify ICTs that can assist in reducing social isolation within the older adult population.

The final chapter in this section is by Panayiota Tsatsou, Gillian Youngs and Carolyn Watt and it is titled ‘Literacy and Identity Links Forging Digital Inclusion? Critical Reflections and Signposts from a Qualitative Study’. It argues that the concept of ‘interactivity’ lies at the core of digital literacy and suggests a micro-perspective on people’s identity in general and age identity in particular in order to conceptually shed light on the joint role that literacy and identity play in digital inclusion. It also reports on qualitative research that operationalises and empirically tests these conceptual suggestions. The findings suggest that literacy and age identity affect digital inclusion separately as well as jointly, while age influences factual and perceptual literacy gaps. The findings challenge the assumptions about ‘digital natives’ and ‘digital immigrants’ and invite further exploration of ‘intra-generational’ nuances in the realm of digital inclusion for a better understanding of the importance of digital inclusion for social inclusion.

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