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IFIP – The International Federation for Information Processing

IFIP was founded in 1960 under the auspices of UNESCO, following the first World Computer Congress held in Paris the previous year. A federation for societies working in information processing, IFIP's aim is two-fold: to support information processing in the countries of its members and to encourage technology transfer to developing nations. As its mission statement clearly states:

IFIP is the global non-profit federation of societies of ICT professionals that aims at achieving a worldwide professional and socially responsible development and application of information and communication technologies.

IFIP is a non-profit-making organization, run almost solely by 2500 volunteers. It operates through a number of technical committees and working groups, which organize events and publications. IFIP's events range from large international open conferences to working conferences and local seminars.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is generally smaller and occasionally by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is also rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

IFIP distinguishes three types of institutional membership: Country Representative Members, Members at Large, and Associate Members. The type of organization that can apply for membership is a wide variety and includes national or international societies of individual computer scientists/ICT professionals, associations or federations of such societies, government institutions/government related organizations, national or international research institutes or consortia, universities, academies of sciences, companies, national or international associations or federations of companies.


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Innovation Practices for Digital Transformation in the Global South

IFIP WG 13.8, 9.4, Invited Selection

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Preface

This collection of chapters is an initiative from the IFIP Working Groups 13.8 and 9.4 from Technical Committees 13 and 9, respectively. The book presents experiences and research on the topic of digital transformation and innovation practices in the global south. The works presented are anchored on digital transformation initiatives for novel innovative technological developments, practices, and applications relating to marginalized people in the global south. These chapters provide real cases of digital transformation for people whose human experiences and life perspectives emphasize the value of new technologies and skills. The IFIP Working Groups 13.8 and 9.4 also document challenges that face low-income communities outside the global south. While addressing the concerns and arguments that systematically prohibit society from leveraging the conceptions of the digital era in underdeveloped and developing countries, creative lessons in innovation are critical and fundamental in sustaining social and economic development.

Chapter one discusses the digital transformation of indigenous communities in the global south founded on a community-based codesign approach. The innovation practice used a drone and embraced local practices and epistemologies. Chapter two is framed on the digital transformation of Mandhwane, a rural community in South Africa, by fostering a community network with local internet access and innovative new digital services. Chapter three explicates the sociotechnical dimension of trucking sector operations in India using digitalization in a bottom-up fashion. Chapters four and five highlight self-healthcare monitoring mobile applications used to continuously educate and sensitize people about the need to adopt healthy lifestyles to prevent non-communicable diseases. There is evidence that mobile applications with educational content on healthy lifestyle and self-healthcare monitoring contribute to the adoption of healthy lifestyles.

Chapter six covers the digital discovery of a marginalized community engaged in science, technology, engineering, arts, and mathematics (STEAM) activities, and exposes the challenges that many low-income communities face. Sociocultural factors, capital knowledge, and creative lessons in innovation were noted from this community in the northeastern region of Mexico. Chapter seven highlights a machine-readable passport project concerning the automation of the passport transaction process involving multiple organizations in Bangladesh. Despite being successful, complex power dynamics, sociocultural factors, and the political environment were noted as challenges. Chapter eight shows that digital platforms have made entrepreneurial processes less bounded, where products and services keep on evolving long after being endorsed by the end user. Digital entrepreneurship has enhanced innovation, competences, control, financing, institutions, and ecosystems for social and economic development.

Chapter nine examines critical and fundamental arguments that systematically prohibit society from leveraging the conceptions of the digital era in underdeveloped

and developing countries. Digital transformation is critical to achieving social and epistemic justice, more so in the increasingly dynamic virtual spaces in education. Finally, chapter ten details the change and application of digital transformation within the context of the Latin American theater. Based on the innovative process employed at The Experimental Theater of Cali, the transition from analogue tradition to digital economy produced two different infrastructure approaches – relationship infrastructure guiding spectators and actors during staging and theater infrastructure as an agent of change. Here, digital transformation is about social, economic, and political protagonism.

The digital economy, also called the Internet economy or the Internet of Things economy, has transformed economies and societies in this knowledge society. With the digital discovery environment, digital platforms have expanded business enterprises with immense opportunities and prospects in rural settings. Digital platforms have enhanced and achieved innovations and competences in various sectors of the economy. With new digital innovations, and ideas and insights being witnessed across the globe in this free and open economy, there is a need for participation and collaboration from industry, academia, the public sector, and other stakeholders in order to achieve and sustain the gains in human transformation and societal development. We believe this book is a useful mouthpiece for the communities from the global south to be part of the digital transformation for sustainable development.

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Organization

Established in 1989, the International Federation for Information Processing Technical Committee on Human–Computer Interaction (IFIP TC 13) is an international committee of 35 member national societies and 10 Working Groups, representing specialists of the various disciplines contributing to the field of human-computer interaction. This includes (among others) human factors, ergonomics, cognitive science, computer science, and design. INTERACT is the flagship conference of IFIP TC 13, staged biennially in different countries around the world. The first INTERACT conference was held in 1984, running triennially before it became a biennial event in 1993.

IFIP TC 13 aims to develop the science, technology, and societal aspects of human–computer interaction (HCI) by encouraging empirical research; promoting the use of knowledge and methods from the human sciences in design and evaluation of computer systems; promoting better understanding of the relation between formal design methods and system usability and acceptability; developing guidelines, models, and methods by which designers may provide better human-oriented computer systems; and cooperating with other groups, inside and outside IFIP, to promote user-orientation and humanization in system design. Thus, TC 13 seeks to improve interactions between people and computers, to encourage the growth of HCI research and its practice in industry, and to disseminate these benefits worldwide.

The main orientation is to place the users at the center of the development process. Areas of study include the problems people face when interacting with computers; the impact of technology deployment on people in individual and organizational contexts; the determinants of utility, usability, acceptability, and user experience; the appropriate allocation of tasks between computers and users especially in the case of automation; modeling the user, their tasks, and the interactive system to aid better system design; and harmonizing the computer to user characteristics and needs.

While the scope is thus set wide, with a tendency toward general principles rather than particular systems, it is recognized that progress will only be achieved through both general studies to advance theoretical understanding and specific studies on practical issues (e.g., interface design standards, software system resilience, documentation, training material, appropriateness of alternative interaction technologies, guidelines, the problems of integrating multimedia systems to match system needs and organizational practices, etc.).

The IFIP Technical Committee 9 (TC 9) on ICT and Society focuses on understanding how ICT innovation is associated with change in society, and on issues of ethics and professionalism. TC 9 comprises ten working groups (WGs) and representatives of the national computer societies of IFIP.

The main work of TC 9 is conducted through its working groups, which organize workshops, conferences, and events regularly. Additionally, TC 9 organizes collectively the series of conferences on Human Choice and Computers (HCC). This is a well

established forum for the study of ICT and society – the first HCC conference took place in Vienna in 1974, while the last one was due to take place in Tokyo in 2020 – alas cancelled due to COVID-19. The next HCC will take place in Tokyo in 2022.

The main aim of TC 9 is to develop understanding of how ICT innovation is associated with change in society, and to influence the shaping of socially responsible and ethical policies and professional practices. TC 9 fosters multidisciplinary discourse into the role of ICT in the change of particular domains of human activity, including work; the home and private life; and governance. It is also interested in the ethical, political, economic, and cultural dimensions of ICT innovation.

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