

# Preface

## The Context

Recently, the world has witnessed unprecedented advancements in terms of speed and geographical coverage and diffusion of information and communication technologies (ICTs). Broad empirical evidence shows that even the most economically backward countries are adopting ICTs to eradicate their technological deprivation.

ICTs are universally acknowledged as a powerful tool for development and are often promoted as pivotal to bringing about social and economic growth. The revolutionary feature of modern ICTs – mainly the Internet and mobile telephony – facilitates low cost and speedy interaction among network participants. The full potential of new technologies can be easily unleashed when they are deployed as an economic development accelerator in least developed countries. ICTs bring to developing markets new business models, innovations, capital-labor substitution, and improved goods and services. Because they can spread rapidly, with little cost and minimal skills required for usage, ICTs create a solid background for social and economic gains. They enable significant reduction in information asymmetries, which improves access to economic activities for a multitude of agents, fostering participation, inter alia, in labor market of disadvantaged societal groups.

The adoption of ICTs creates better conditions for education and skills improvement, allows overcoming barriers for disadvantaged groups, brings about empowerment, and paves the way to tap the global market of goods and services. ICTs enhance shifts from traditional to modern forms of conducting business and provide the necessary impetus to usher in an industrial revolution.

Regardless of all the abovementioned facts, information and communication technologies' impact on economies' performance is claimed to exhibit in the long-run perspective, and – in addition – their real impact is limited and hardly quantifiable. Therefore, after almost two decades of rapid diffusion of ICT in the developing world, it becomes imperative to assess the real consequences of adoption of ICTs in

economically backward countries. Broad, real-world-based evidence would provide a better understanding of the precise nature of new technologies and their impact on a country's economy and society.

The recent years have witnessed the role of ICTs in influencing the socioeconomic context in many countries. Despite that, in many regions, a significant proportion of the population does not have access to clean water, sanitation, basic health services, infrastructure, and proper education. The mission of this book is to explain how ICTs provide novel opportunities for information interchange and technology transfer and escalate socioeconomic development in the developing world. ICT can be pivotal to building a transparent and all-inclusive society. This being said, integration poses challenges that are not easy to overcome, and so strategic and holistic approaches are needed to realize the full potential of these advancements in technologies to reform governance and transform public agencies and services. The gap is especially wide because policy makers and government agencies view ICT as an add-on technical fix, while ICT specialists fail to speak the mainstream development language. Our thoughts are that policy makers and technology specialists must communicate across the divide and manage the transformations brought about by a new paradigm.

### ***What This Book Offers***

This highly valuable book offers the reader a critical look into aspects of ICTs in raising socioeconomic development in underdeveloped countries. It intends to illustrate “success stories” in developing countries in reducing poverty, improving productivity, and addressing climate change issues. It aims to bridge the gap between the disciplines of ICT and economic development, and hence, it argues for the need to merge socioeconomic development with the revolutionary advances in information and communication technologies in order to address development challenges facing poor countries and emerging economies, particularly those concerning basic facilities such as clean water, sanitation, and basic healthcare services. It also builds a case for integrating new technologies into development strategies and governance reforms. It offers a number of frameworks and tools to advance this integration agenda. When properly leveraged, the ICT tools can reduce the cost of public services, enhance access to quality services, and make governing agencies more transparent.

This book comprises five parts.

**Part I General and Multiregional Studies:** In this part, you will understand why and how ICTs may affect socioeconomic development in economically backward economies and the prerequisites that are required to bring about social and economic escalation. We focus on some of the challenges faced by emerging economies in tackling corruption and the issues encountered in handling and processing

heterogeneous, complex, and unstructured data for better decisionmaking. We use case studies to demonstrate how ICT can be a powerful tool to fight corruption and handle big data for implementing better management policies.

**Part II Asia:** We use Bangladesh as a case study to highlight the role of ICT in strengthening the public sector accounting and introducing more transparency and accountability in the system. You will also gain an insight into how ICT can play a vital role in addressing climate change with particular focus on agricultural adaptation and disaster risk reduction from a community perspective.

**Part III Africa and the Middle East:** Case studies from Africa and the Middle East are used to evaluate infrastructure deployment in OECD and MENA countries. The section highlights how reconstructing the institutional framework that supports scientific knowledge management systems (SKMS) in developing countries can be a panacea for successful IR innovation. It also throws light on how developing countries can enhance their ICT adoption for development by improving formal institutions and strengthening domestic determinants of ICT adoption.

**Part IV Latin America:** In this part, we study the role of ICTs, especially the Internet, in three Latin American countries to understand how people can attain the lifestyle they value and how inequalities in this ability or “information richness” can be explained by sociodemographic characteristics that do not depend on the individual’s decisions. Evidence from Chile illustrates how ICT can improve communication access and participation in social programs and reinforce preexisting inequalities. We use country-specific information from Chile to show how e-commerce is emerging as a channel to penetrate new markets and opening up new avenues for productivity in the manufacturing and service sector.

**Part V Europe:** In this part we assess the economic potential of big data industries in Europe and the challenges they face. We use data from Slovenia and Slovakia to understand the common patterns of digital development in developing countries and find that while the levels of efficiency of these industries are high, they are missing some key economic links with other sectors of the economy. We then shift focus to Estonia, which is home to many new ICT startups to understand how ordinary citizens are benefitting from this revolution.

We expect that the book content draws on the insights and contributions of many colleagues and academics in developing countries. Its intended audiences are policy makers and ICT strategists. We also hope that it provides the necessary impetus for a more active communication among government agencies concerned with socio-economic development and ICT strategies to build more inclusive societies in the developing world. We are fully aware that the book tackles only a small sample of issues which are associated with problems of ICT adoption in the developing world and exploiting its full potential. However, we do hope it is an inspiring worldwide study, paving the road ahead for further research.

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