Preface

In a prescient essay, Drucker (1993) asserts that "knowledge is fast becoming the *one* factor of production, sidelining both capital and labour" (p. 13). In the last twenty years, if knowledge, however conceptualized, has not totally displaced the traditional factors of economic production, it has emerged as a formidable co-operant factor in contemporary society and economy. This reality has spawned congeries of descriptors: "knowledge society," "information society," "digital society," and "network society," among others. These descriptors, which tend to be used interchangeably, attempt to capture myriad ways in which the production, manipulation, storage, and transmission of knowledge (as information) is shaping and reshaping contemporary life in all its facets. Enabling and powering these transformations wrought by knowledge are the advances made in Information and Communication Technologies (ICTs), which have spawned entirely novel industries with staggering market value and life transforming impacts: personal computers, mobile telephony, electronics, nanotechnology, robotics, etc. For instance, the value of the global mobile phone and smartphone market is expected to be worth a staggering $341.4 billion by 2015.

What does all this mean for an emergent Africa that is beginning to attract the attention of the globe as her economies show robust and consistent growth and for the continent's socio-economic transformation? The central burden of this book is to proffer some answers to this question. As a gesture to the literature and in order to maintain conceptual consistency, the book adopts the descriptor *knowledge society* as a fulcrum around which these answers are presented. These answers are crucial if the great possibilities and threats that the knowledge society presents to contemporary Africa today and in the future are to be confronted and addressed. Africa is a global leader when it comes to innovation in mobile money (mMoney) initiatives (M-PESA, the mobile money transfer system developed in Kenya, makes that African nation the unchallenged global leader in the mMoney sector). A host of African nations have put together policy documents spelling out policies and programmes that would turn them into knowledge societies in the coming decades. Some universities (and non-governmental organizations) in Africa have set up and rolled out programmes in robotics and artificial intelligence (Ashesi University's *Ashesi Robotic Experience*, ARX, is a case in point) to train a cadre of young people in this field. Mobile telephony is spawning new organizations (telcos and telchambs), which were hitherto unknown in Africa, and bursts of creativity in the online gaming industry, literature, advertizing, music, and film on the continent. One struggles to find any book that not only documents these novel occurrences in Africa but also interrogates the implications for the continent and tries to map the knowledge society future as well. This book attempts to fill this worrying lacuna. Without any ambiguity, therefore, the central objective of this book is to catalyze thinking and provide relevant information on the complex ways in which the information age is shaping Africa and the implications that this will have for the continent and the world. The book seeks to be an authoritative reference source for the latest cutting-edge theoretical and empirical research on Africa's ongoing informationalization. For those seeking deeper insights into the emergent frontiers of Africa's development, this work should also prove very useful.

The book is divided into four sections, which capture the thoughts of practitioners and academics from a variety of disciplinary and professional backgrounds as they interrogate the idea and the impacts of the reality of the still nascent knowledge society in Africa. The contributions utilize a mix of approaches in this regard: statistical, economic theory, public policy theory, philosophical and political economy analysis, legal theory, case study, and survey reports.

Section 1 (Chapters 1-3) focuses essentially on the philosophical and conceptual issues related to the idea of the knowledge society and what this means for Africa's development. In particular, the chapters stress the importance of definitional clarity and relevance for Africa's cultural, developmental, geo-political and geo-economic interests, and realities of the concepts and values generated by the digital age.

Just what is the knowledge society? Is there a knowledge society or are there knowledge societies? How come an idea centered around knowledge, sharing, and openness seems, on the examination of the empirics, to be cementing global and local inequalities? Adu (Chapter 1) grapples with these questions in her chapter and, in doing so, opens up the possibility of conceptualizing the idea of the knowledge society beyond country-level indexing and benchmaking to one entailing "opening up the world in terms of trade, mobility, and data, employing new technology in cross-border collaborations and acknowledging our humanity's interconnectedness or *ubuntu*."

Mayiga (Chapter 2) is essentially concerned about the mandatory global turn to digital television from analog television and the developmental implications for the African continent, which does not control the technical regime regulating the process nor possess the technological muscle to pursue her aesthetic and informational interests as the process unfolds. In mitigation, Mayiga canvasses "for a cautious approach to the digital switch-over" in Africa in order to address the "logics it espouses, the inclusions and exclusions it engenders, and the vested interests it serves."

Mawuko Yevugah (Chapter 3) revisits the historically unequal power relations in all their variegated manifestations between the developed and developing world. In his view, the ICT-inspired developmental paradigm promoted in the main by international organizations such as the World Bank and the United Nations Development Programme may be reproducing the historical asymmetrical power relations between the global North and the global South, as they perpetuate the ideational hegemony (regarding what development is and how it can be achieved) of the former and effectively disables home-grown responses to the latter's developmental challenges.

Section 2 (Chapters 4-7) is policy-oriented. In this section, vexing policy questions implicated in coming to grips with a digitizing world at the national and global levels are examined. The chapters offer responses to a variety of questions: What does the rise of increasingly powerful telcos mean for African countries? Do these telcos collude? Has the nature of African politics been changed by ICT? Should African countries bother about the international intellectual property rights regime at all regarding ICT innovation?

Shaikh and Nahmias (Chapter 4) present a soberly wrought legal perspective on Africa's knowledge society dreams and the ways in which this will have to contend with the pertaining global intellectual property rights regime underpinned by WTO rules. This chapter should help draw attention to critical legal issues that are overlooked in the discourse on ICTs and development in Africa, given the inordinate focus of this discourse on infrastructure, skills, investment, and the like. Given the ongoing tussle over Economic Partnership Agreements between the European Union and African countries (expected to be concluded in 2014), the lapse of the Africa Growth and Opportunities Act in 2015 and the expiration of the Cotonou Agreement by 2020, Shaikh and Nahmias predict tougher and more stringent intellectual

property standards for African countries. African countries will be well advised, the authors argue, to decouple trade and intellectual property issues by promoting interregional trade or trade with other developing countries that do not demand TRIPS-Plus protection and also negotiate forcefully intellectual property issues within the framework of the WTO.

In Chapter 5, Armah mulls over whether anti-trust laws will catalyze greater competition in Africa's burgeoning telecommunications sector, using Ghana as a case study. Employing primary and secondary data, Armah reports that Ghana's telecommunications sector "is open to 'cartelization,' which can result in different forms of price collusion despite the existence of a state regulatory body" and requires anti-trust legislation to protect consumer welfare.

In the wake of the so-called Arab Spring, the claim has been made that online social networking sites such as Facebook and Twitter accessed through mobile telephones were responsible for mobilizing citizens to protest against their inept and corrupt leaders in North Africa. In other words, ICTs need to be seen as a key element in citizen political activism and engagement and by extension political competitiveness in contemporary Africa. Clarke (Chapter 6) tests this hypothesis using continent-wide data on the spread of landline telephones, wireless handsets, and Internet connections used contrasted against the level of political competition in Africa throughout the post-colonial period. His findings suggest that while communications technology may serve as a boon to the cause of political competition immediately following first introduction, its long-term effects are likely to be limited.

If Armah (Chapter 5) is seized with the telcos and finding ways in which to regulate their industry in order to improve customer welfare in particular and socio-economic welfare in general, Amoah (Chapter 7) ruminates on how these telcos can be directly engaged in pursuit of an African country's knowledge society goals. Amoah argues that telecommunication chambers seem to be the emergent organizational forms that will allow mutually beneficial interactions between telcos and African governments to occur and make realizable as a matter of strategic policy formation the vast socio-economic, technological, and cultural potential of mobile telephony.

In Section 3 (Chapters 8-12), any African country in search of ideas on how to go about constructing her knowledge society will find useful clues. The prescriptions encompass what can be done at the national level in an organized, systemized, and institutionalized fashion, and the value within such a scheme of local government and indigenous knowledge.

Agola (Chapter 8) provides a twelve-point roadmap (what he terms "pillars") for building a knowledge society in Africa. In Agola's view, "The widespread and entrenched infusion of knowledge into economic activities" is the mark of "a knowledge society whose productivity is therefore relatively higher than a non-knowledge society." For this to occur, a deliberate, conscious, targeted, and well-managed process needs to be set "on a multi-dimensional plane comprising of technology, contextual, and social human relational aspects." Agola's chapter brings to the fore the complex, wide-ranging socio-economic, political, and cultural processes entailed in building a particular society's knowledge store in order to spur higher levels of productivity and higher standards of living.

In Chapter 9, Conteh and Smith connect the building of a knowledge society to the extent to which public administration and public policy formation is enhanced by information and communication technologies. The chapter focuses on the rationale and characteristics of e-government in Africa, as well as its strengths and weaknesses, with particular reference to two countries on the continent – Ghana and Kenya. Essentially, Conteh and Smith point us to the overall developmental value of having open, free, and democratic societies in Africa founded on "inclusive government institutions" that the African knowledge society must not only inspire but be defined by.

Ankomah and Larsen (Chapter 10) demonstrate that the increasingly pervasive influence of ICTs in Africa can and should be consciously tapped to promote national development. Using Ghana as a case study, their chapter articulates a framework by which the setting up of a cyber/virtual community can aid the West African country in tapping the skills of her citizens abroad in making her tourism sector more organized, attractive, and competitive. More broadly, the chapter provides practical ideas on how the brain drain can be converted to brain gain through the instrumentality of bits and bytes.

Knowledge can have a life-transforming impact, as this work highlights. For rural communities in Africa the more so given the existential challenges these communities face. These challenges are further exacerbated by the spatial and communication gaps between rural communities and central government. Using data collected from rural communities in the Republic of Tanzania, Philips, Chantal, and Mtega (Chapter 11) report that a creative interplay between indigenous/cultural communication approaches and modern communication vectors, especially the mobile phone, can play a useful and critical role in enabling life-saving and enhancing information to reach those who need it most.

Soudi (Chapter 12) brings a practitioner's insight into what it would take to build a knowledge society in Africa. Her chapter documents the various initiatives in the field of robotics and artificial intelligence being set up and rolled out across the African continent. Using robotics education approaches from all over the world, Soudi shows that it is imperative to expose students in Africa to the field at an early age and to craft policies that connect the products of this education to industry. Soudi's claim is that Africa can compete in a field that is now attracting some nascent attention on the continent.

The chapters (13-16) in the last section (4) reflect on the ways various countries have made progress in responding to various aspects of the widespread and entrenched digitization in contemporary socio-cultural and economic life. The chapters shed light on the successes that have been made while pointing out the challenges as well. The chapters courageously provide benchmarks for how to "do" the knowledge society in Africa.

Pierre-Louis (Chapter 13) delves into his experiences as managing director of TV10, the first private television channel in Rwanda, and its project leader (for the digital switch over) to provide industry player insights on what can be done and must be avoided as African countries make the migration from analog to digital television.

Though China is the second largest economy in the world, it is in some respects still a developing nation if one considers the urban-rural divide and the socio-economic conditions in the Eastern and Western portions of that country. In spite of and ironically because of its peculiar developing country challenges, China has made notable strides as she builds her knowledge economy/society. Li, Chen, and Guo (Chapter 14) trace and analyze the policy processes by which such an undertaking was pursued, the challenges encountered, and the lessons learnt. China is thus offered as an exemplar developing country that has grappled successfully, though not without problems, with the onerous demands of a digitizing world.

Kim (Chapter 15) utilizes the Actor-Network Theory (ANT) to proffer some of the crucial elements that African countries must concentrate on if they wish to push forward with m-government initiatives and follow the examples set by Korea and Kenya. The chapter argues that at the heart of highly successful m-government initiatives in these countries lay synergistic co-operation between the state and private corporate entities that was deliberately cultivated.

Following a comprehensive description and analysis of the Corporate Social Responsibility (CSR) policies implemented by Huawei—the leading multinational Chinese information and telecommunications brand—within the framework of its business operations in Africa, Rataj (Chapter 16) points up the possible implications of the company's presence in Africa for the continent's transition to a knowledge

society. The chapter shows how a multinational company from a developing country via location sensitive innovation can serve as a critical vector for technological innovation. In conclusion I will be remiss if I do not stress that if the chapters in this volume inspire thinking and action on building Africa's knowledge societies and economies then the effort expended on this work will have been well and truly directed at a useful enterprise.

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REFERENCE

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