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Reviews of *Mastering Digital Transformation* (Hanna, 2016) and *Digital Kenya* (Ndemo & Weiss, 2016)

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Nagy K. Hanna, Mastering Digital Transformation: Towards a Smarter Society, Economy, City and Nation. *Bingley, UK: Emerald, 2016, 300 pages,* £29.95 (paperback), *ISBN Print: 9781785604652.*

Bitange Ndemo and Tim Weiss (Editors), Digital Kenya: An Entrepreneurial Revolution in the Making. *London: Palgrave Macmillan, 2016, 509 pages, free (eBook), ISBN: 978-1-137-57878-5.*

1. Opening comment

It is important that these two books were published in the same year, 2016, because together they reflect a more diverse set of perspectives than either one on its own, while demonstrating the common denominator of radical change relative to each particular country's locality, context or development trajectory. The books illustrate that even where countries are not be at similar levels of economic development, they all experience the digital revolution, resulting in both common and distinguishing features.

2. A perspective on Hanna's *Mastering Digital Transformation*: Learning and doing

Written in three parts, Hanna's major work on digital transformation attempts to map the new digital world, where people, organisations and markets, and the animate and inanimate instances that depend on them, are engaged in radical change of the geography, the landscape, indeed every facet of human activity. Part One on "The Big Picture", Part Two on "Pursuing Transformation Possibilities", and Part Three on "Mastering the Implementation of Digital Transformation", each deal with different modes of engagement with the transition from an analogue to a digital world – thinking, designing and achieving.

One of the reviewers spoke with the author and asked him: why the word "mastering" in the title of the book? Did this choice have anything to do with use of the word in the context of strategy, as related to Sun Tzu's implicit use of the idea of "mastery", with respect to self-mastery as a key leadership quality, for gaining insight in and navigating a changing environment? The author's response (December 2016):

> Digital transformation is a process that takes time and effort for integration of lessons, it requires learning to plan and planning to learn. You must design the plan and design the process in such a way as to learn and process/integrate as you learn from the experience […] this is "mastering" the process. These views are in contrast to those of donor agencies, who usually truncate the [digital transformation] process into a project cycle of short-term interventions […]. One of the dangers with the notion of leapfrogging is that it creates the impression that if you take the latest technology, you don't need the learning, or infrastructure, or policies and institutions, you just need to acquire the latest tech. But this is not true – the foundations need to be there for using the latest tech.

So the author is not using Sun Tzu, but the text of the book comes remarkably close to Sun Tzu's strategic thinking: make the strategy most relevant to the context to increase the chance of success. Relating the many discussions in the book to the African continent's experience, we would also emphasise the word "mastering", because it is now time to master particular facets of digital transformation in the 55 countries on the continent, relative to each country's context, rather than simply embarking on the journey. The existing levels of failure of digital development projects must breed greater levels of success, which success occurs through learning from failure and the application of such learning to advancement towards success, a transition typical in many innovation contexts.

Summary of selected chapters

There are many chapters deserving of comment, but we have chosen two that offer interesting ideas for contemplation for African countries.

Chapter 2's treatment of the "emerging smart, data-driven economy"

Hanna lists for the reader a few of the key terms associated with digital transformation today, of which we chose a few emerging modalities to explore in this review: frictionless economy, on-demand sharing economy, co-creation economy, orchestration economy, smart cities. The author also includes better-known terms, such as innovation economy and learning economy, important because innovation and learning underpin the possibility of engaging in the other modalities.

Summarising Hanna (pp. 15-23), data drive the frictionless economy through ease of mobile money transfer, through crowdsourcing, through online trading connecting manufacturers to buyers, and through using biometric identification to access public and private services. He writes that these "easy" transactions bring billions of the world's poor closer to digital opportunity, though new challenges emerge (e.g., privacy, consumer lock-in). As the author explains, data drive the on-demand sharing economy (à la Uber and Airbnb), with endless opportunities for connecting supply and demand of almost any kind of shared service, through integrated applications, incorporating digital mapping together with personal communication and online or mobile booking and other application elements. Data drive the co-creation economy, where citizens and consumers can create and recommend the kinds of services they seek from government and private-sector service providers. Data drive the orchestration economy, where global networks of suppliers are emerging and creating specialised resource bases to tap into, managed as networks of loosely organised people and parts rather than as highly hierarchical organisations. Data drive smart cities, through available data and the analytical capabilities to use the data to make major decisions on infrastructure, water, health, and other concerns. Hanna's provision of this range of ways to view digital transformation moves the reader away from attempting to "define" the term, towards exploring such transformation in all its guises.

Chapter 6's treatment of "transforming key sectors"

It is apparent from a reading of this chapter that, in the 21st century, the information and communication technology (ICT) sector is only as valuable as its capacity to transform other economic and social sectors. Here lies the challenge. For e-health, Hanna writes, digital transformation will require (p. 117) "a planned, sequenced, integrated and continuous approach" rather than a silver bullet. For e-education, countries and individual schools will need to (p. 129) "build a critical mass of trained teachers" to teach ICT skills and use ICT in all subjects and in all forms of educational engagement. Hanna argues that to transform finance, mobile money innovations must become widespread, and that (p.136) "[d]igitally-enabled agricultural transformation can help meet the challenge of feeding over 9 billion people by 2050 […]". He convincingly argues that in agricultural extension services, mobile communications can advance each element in the agricultural supply chain, including primary production, aggregation and processing, distribution, and the retail and consumer segment (p. 136).

Part of the value of Chapter 6 is that it deals with "key sectors" (health, education, finance and agriculture) from a global perspective – sectors that are foundational to all economies and nations, without which they cannot reasonably pursue digital transformation in other sectors. These four are sectors where digital transformation can make a significant difference to just about every person on the planet.

Review comments

As a critical comment on the book, it is our view that an even more explicit case could be made for digital innovation for the billions of citizens who are unlikely to experience most of the digital innovation opportunities discussed in this book, in their lifetimes. While this latest digital divide is implied in many sections of the book, and addressed to some extent in Chapter 7 on "promoting inclusive information society", it could be more explicitly addressed as a key theme, exposing the challenges that particular countries and social groups will face to achieve any form of digital inclusion and related economic emancipation. Some, few, countries are ahead at the game of mastering digital transformation. Some countries have had early realisation of benefits from a few, popular applications. Most countries require an even more detailed guide on the "how" of digital transformation. There is much to explore in this book, and at the same time so much more that can be added to its key themes.

3. A perspective on Ndemo and Weiss's *Digital Kenya*: Emphasis on entrepreneurialism for digital transformation

Digital Kenya is available free to download at http://link.springer.com/book/10.1057/978-1-137-57878-5, courtesy of the Ford Foundation. Published in four parts, the editors Ndemo and Weiss and the chapter authors present "Part I: Looking Back and Looking Ahead"; "Part II: Uncovering Unique Market Opportunities"; "Part III: The Inner Life of Technology Entrepreneurship in Kenya"; and "Part IV: Managing the Fine Details of Doing Business in Kenya".

The authors of the 15 chapters and 14 "conversations" (as the editors have labelled them) in this volume provide rich material for contemplation. The book is strongly geared towards entrepreneurship and the content is suggestive of both strengths and weaknesses in the entrepreneurial landscape. As reviewers, we are not entirely convinced that many of the ideas introduced by start-ups are at present being adopted by Kenyans in similar proportion to the mobile money innovation M-Pesa. Ushahidi, for instance, while a Kenyan innovation, is now mostly used in other parts of the world.

Summary of selected segments

Conversation #1: "The Past, Present, and Future of 'Digital Nyika': How to Fix an Aircraft in Flight"

The reflections of Gitonga, in the first conversation, on the "Digital Nyika" ("*nyika*" meaning "grasslands" in Swahili), highlight the risks for future digital innovation

in Kenya. He notes a tendency to import foreign technological approaches rather than creating home-grown innovations, though this is changing. From the reviewers' perspective, a good example of this shift to local innovation is the introduction of taxi-hailing apps. When Uber first came to the Kenyan market, there was some resistance, but with time, it grew to be accepted. More recently, Kenya has competing apps, such as Safaricom's Little Cab, taking on Uber.

Gitonga argues that digital innovators and entrepreneurs should emphasise pressing local problems. Here, they will get larger numbers of users and, if the initiative is really of value, the sustainability is almost a given provided there is focus on continuous improvement.

Chapter 3: "The KINGS of Africa's Digital Economy"
This chapter by Osiakwan paints a brief picture of the driving factors for digital innovation in five countries, namely Kenya, the Ivory Coast, Nigeria, Ghana and South Africa. While the chapter discusses the notion of "Africa tech rising", and the first wave of tech innovation, it does so in a limited way, the emphasis rather biased towards infrastructure, with only a cursory glance at digital innovation and enabling or constraining policy environments in the five countries.

Nevertheless, Osiakwan's notion of "first mover countries" on the African continent – countries to watch, countries to emulate – is useful for two reasons: (i) it suggests to the reader that there are particular countries to learn from in Africa, though the leading countries may change with time; and (ii) it gives African countries a sense of what may be possible in their own contexts, if they can follow the examples of fellow African countries with similar development trajectories and socio-economic challenges.

Chapter 11: "Inside a Policymaker's Mind: An Entrepreneurial Approach to Policy Development and Implementation"
Ndemo's reflections, in this chapter, on approaches to policy development and implementation are valuable. Having served as the Permanent Secretary to Kenya's Ministry of ICT, he is able to take the reader on a tour of the inner sanctum of government, where policy is conceived.

Review comments
As reviewers, we are sceptical that many of the ICT-based services introduced by Kenyan start-ups are being adopted by Kenyans to the same extent as the mobile money innovation M-Pesa and other mobile financial services. More evidence of adoption rates for the many digital innovations – for example the number of players of the Moraba digital game – will be a valuable focus for future research.

Understanding adoption of local innovation will be important because it will enable

us to understand the most crucial parts of the Kenyan ecosystem for continued, long-term digital innovation, noting that high levels of adoption can breed continuous demand for innovation, while low levels of adoption can lead to stagnation in the digital innovation space. Also vital to the future growth of innovation is that researchers study digital innovation – in Kenya and other African countries – beyond the ICT infrastructure perspective, making available research-based knowledge on the services, innovations and techno-cultural artefacts that use ICT infrastructure for digital transformation of African economy and society.

A subject that could have been addressed more explicitly in the book is the need to inculcate a culture of matching relevant skill sets, such that innovators and entrepreneurs complement each other and in the process build solutions and future business. Such dynamics are necessary to build sustainability of solutions and stabilised management of small, local, tech-driven companies. The future of "digital Kenya", in our view, lies to a great extent in encouraging Kenyans to harness home-grown solutions to local problems. Such issues are indeed highlighted in the chapters and conversations of this volume, but would have merited a dedicated chapter.

In light of the insights from this volume, how do we see Kenya's digital future? The next generation of policymakers will be young people who are prickly in their conduct towards bureaucracy. It is therefore necessary to ensure that the education and insights these future policymakers acquire, both at universities and in the various technology and tech policy fora they engage with, give them the capacity to craft policies that will enable the African digital future. That will be central to making digital Kenya, and digital Africa, real.

4. Conclusions

Those readers seeking to understand Africa's economic, social and political transformations can benefit from reading these two volumes, *Mastering Digital Transformation* and *Digital Kenya*. The broad conceptualisation of digital transformation that emerges from these books forces the discussion beyond technologies, beyond ICT infrastructure, and beyond ICT policy, to the many drivers of digital development in the next decade and beyond, such as the requirement for innovation skills and capabilities, and the demand for innovative services and transformational impact.

While ICT infrastructure remains a valid descriptor, we argue that, based on the insights from these two volumes, the age of ICT policy is past and the age of digital transformation and digital innovation policy is with us. Why do we say "digital transformation and digital innovation policy"? Our view is that "ICT policy" as a descriptor does not capture the necessary disruptive nature, nor the necessary creativity or innovation capability, which are more explicitly embraced by a notion of policymaking for digital transformation and digital innovation.