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Out of Africa

A new perspective on digitalisation in Africa

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Corporations, social organisations, and government stakeholders are increasingly engaged in implementing Western information and communication technologies (ICTs) in sub-Saharan Africa. Given the impact of the digital revolution, critical questions emerge around the presumed need for this “into Africa” implementation. Our contribution aims to strike a counter-intuitive note amid the global perspective of “expanding” ICT into Africa. In the first place, we argue that the “digital revolution” in Africa is taking place successfully because it is based on important values originating in indigenous cultures – including African cultures – rather than Western principles. In the second place, we assume that digitalisation will be driven through “out of Africa” developments rather than an “implementation in Africa”. To substantiate our thesis, we present an example of a successful ICT service provider “made in Africa” and cutting-edge propositions created by African ICT students as potential future “out of Africa” business solutions.

Out of Africa

Eine neue Perspektive auf Digitalisierung in Afrika

Wirtschaftliche und soziale Unternehmen sowie Regierungen befassen sich zunehmend mit der Einführung westlicher Informations- und Kommunikationstechnologien (IKT) in Afrika. Angesichts der Auswirkungen der digitalen Revolution stellen sich kritische Fragen zu dieser Implementierungsstrategie. Dieser Beitrag möchte einen kontraintuitiven Blick auf die „Expansion“ westlicher IKT-Lösungen nach Afrika werfen. Wir argumentieren, dass die „digitale Revolution“ deshalb erfolgreich in Afrika stattfindet, weil sie auf Werten gründet, die indigenen – auch afrikanischen – Kulturen eher entsprechen als westlichen Prinzipien. Wir gehen davon aus, dass die Digitalisierung zukünftig eher durch Innovationen aus Afrika als in Form der Einführung in Afrika vorangetrieben wird. Zur Untermauerung dieser These präsentieren wir das Beispiel eines erfolgreichen, etablierten IKT-Dienstleisters „made in Africa“ und IKT-Konzepte afrikanischer Studierender, die sich zu weiteren erfolgreichen IKT-Lösungen aus Afrika entwickeln können.

Keywords: digitalisation, information and communication technologies, digital revolution, mediatisation

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Introduction

“A paradigm shift is underway in Africa. New innovations are destroying old ways of doing business, and smart young entrepreneurs are at the forefront of this quiet but historic transformation. Teams of skilled developers and programmers have sprung up in innovation hubs, incubators, and accelerators across the country to build information and telecom solutions that capitalize on the country’s mix of challenges and opportunities.”

– Ndemo 2017, p. 1

Many African countries have leapfrogged into the mediated world of smartphones and apps without passing through the stage of wired telephone use. Through smartphone technology, the internet is more easily and flexibly accessible to more and more Africans. Global service providers of digital technologies stretch their business interests into formerly remote and difficult to access markets such as sub-Saharan Africa.

Given the political, societal and economic impact of the digital revolution in the northern hemisphere, the opportunities and challenges emerging around the increasing implementation of ICTs in sub-Saharan Africa should be explored and discussed. On the one hand, digital technology per se has been criticised as a “form of cultural imperialism” (Britz and Lohr 2004, p. 219) because implementing ICTs in Africa (created predominantly in Western societies) implicitly imposes non-African cultural codes, norms and standards such as copyright and English as the dominant language. For example, the tradition of owning and protecting information is not ingrained in many African traditions and legal cultures as digitisation projects of African heritage material such as the Cooperative African Microform Project or the Digital Imaging Project of South Africa clearly demonstrates (Britz 2007). On the other hand, ICTs bear the potential to encourage Africans to actively engage in expressing their points of view in cultural production rather than copying international codes and standards (Becker 2017).

Nevertheless, the limited access to digitally shared information has been discussed as a critical obstacle restricting the educational development and socio-economic growth of Africa and its people. The *digital divide* describes “unequal patterns of material access to, usage capabilities of, benefits from com-

puter-based information and communication technologies that are caused by society” (Fuchs and Horak 2008, p. 101). It is still more accentuated in African countries as they lack a broad access to information distribution systems. However, in technological terms, the internet revolution is booming in Africa. According to the United Nations’ International Telecommunication Union (2018), the African continent may have the lowest internet penetration but, simultaneously, it boasts the fastest increase in internet accessibility.

In this paper, we argue that the so-called digital revolution is taking place successfully because it is based on important values that originate in indigenous cultures – including African cultures – rather than Western philosophy and principles and will be driven in future through ‘out of Africa’ development rather than through implementation in Africa.

The digital revolution as cultural revolution

„If the first machine age helped unlock the forces of energy trapped in chemical bonds to reshape the physical world, the real promise of the second machine age is to help unleash the power of human ingenuity.“

– Brynjolfsson and McAfee 2014, p. 12

Digitalisation is changing the world dramatically. Brynjolfsson and McAfee (2014) compare the current societal changes with the impact of the industrial revolution sparked by the invention of the steam engine. In their view, the second machine age will be mainly driven by digital technologies such as the internet of things, artificial intelligence, the change of human-machine-interactions, and collaborations in the professional and the private sphere. New skills and competencies will be required to keep up with the effects of the digital revolution. To grasp the most relevant implications, the concept of the VUCA world has been developed (Bennett and Lemoine 2014). The acronym VUCA stands for:

- **Volatility:** the world is constantly changing, becoming more unstable through unpredictable changes and this is happening faster than in recent history leading to new ways of thinking in leadership, management and organisational development (Elkington et al. 2017).
- **Uncertainty:** it is impossible to predict and anticipate how events will unfold, what the future holds, or to make plans. Decision-making relies more often on experience-based heuristics than formal logic reasoning (Neth and Gigerenzer 2015).
- **Complexity:** challenges are more multi-layered and difficult to understand than in the past because their different levels intermingle and choosing the single correct path is mostly impossible (Mack et al. 2015).
- **Ambiguity:** despite the increasing amount of information,

facts are less and less clear and precisely determinable. Categories are not exclusive anymore and redundancies, overlapping boundaries, and ‘fuzzy’ concepts are rather the norm than the exemption (Ellsberg 2015).

Hence, in a VUCA world it is more difficult for companies to plan and predict. Innovations with a more radical and disruptive nature are needed because product and service innovations have become a substantial driver for long-term business success (Hon 2012). Thus, new formats and procedures for innovation management such as Design Thinking¹, SCRUM² and Kanban³ have been created recently (Amshoff et al. 2015; Denning 2010; Meinel and Leifer 2010). But besides innovative creativity tools, corporations need to provide a stimulating and supportive innovation climate (Zhu et al. 2018). Research in organisational psychology has revealed a number of dimensions (see figure 1) that are crucial for providing an organisational environment to cultivate innovative teams:

Team members need to feel comfortable to participate in the innovation process and to express unconventional ideas without risking negative reactions from their colleagues or superiors (Bain et al. 2001). Participative safety is a given when team members have a ‘we-are-together attitude’ and share information in the team rather than keeping it to themselves (Houston et al. 2017). Sharing information for the benefit of others rather than regarding information as a source of power is becoming a principle of collaboration. This might be new for many traditional Western corporations and managers but can be found in the ancient African tradition of Ubuntu, whose core message „I am because we are“ privileges a universal bond of sharing (Lutz 2009; Skjerdal 2012). However, the risk of abuse and romanticism of the bond of sharing should not be ignored (Mkabela and Nyaumwe 2007). Furthermore, learning, knowledge, and wisdom are deeply embedded in an oral and visual storytelling tradition in African cultures. For hundreds of years, experiences have been passed down from one generation to the next via rich and meaningful stories. Therefore, we argue that African values of sharing information for the benefit of the community are crucial for the innovation culture the digital sphere is striving for.

1 Design thinking encompasses the cognitive, strategic and practical processes by which design concepts are created by individual designers or design teams in order to meet the customers’ needs and the requirements for the innovation of products and services within corporate and social contexts.

2 Scrum refers to an agile framework for managing knowledge work that originates in software development and has spread into various fields of micro project management. Teams split their activities into actions that can be accomplished within time-boxed iterations (“sprints”) that last between two and four weeks and will be monitored and re-planned in short, daily stand-up meetings (“daily scrums”).

3 Kanban (Japanese for “billboard”) is a scheduling system in the context of lean and just-in-time manufacturing that has been developed to improve manufacturing efficiency. In agile management, a Kanban board is used as a tool in order to manage work at a personal or organizational level by visually depicting work at various stages using cards to represent work items and columns to represent each stage of the process.

Offers such as Instagram or Snapchat can be conceptualised as the digital version of a storytelling culture that differs from Western traditions. Research findings reveal the importance of the narrative nature of social media for attitude change and persuasion, emotion and identity management (Casas et al. 2018; Lambert 2013). Given this background, it is not a big surprise that Instagram is one of the most popular ICT applications worldwide and the number of daily users of Instagram stories is on the rise (Facebook 2019). It enriches Western cultures through its narrative nature and allows Africans to apply local storytelling traditions to the contemporary cultural production, which enhances the diversity of perspectives, freedom of speech and cultural expression (Becker 2017).

From a business perspective, the characteristics of the VUCA world strongly affect corporations, social organisations, and governments beyond the innovation sphere. *Agile management* is currently expanding in a vast area of business sectors in Western societies (Amato and Molokhia 2016; Putnik and Putnik 2012). A number of lean software development methods evolved in the 1990s to overcome former methods of micromanagement, i. e. highly regulated, planned, and supervised management. In 2001, a group of software developers published the Manifesto for Agile Software Development (Beck et al. 2001) as a result of their discussion of the new methodological approach. The Manifesto consists of the following core values and principles which are gradually implemented in an increasing number of organisations:

- valuing individuals and interactions over processes and tools,
- valuing working solutions over comprehensive documentation,
- valuing customer collaboration of contract negotiation,
- valuing responding to change over following a plan.

We argue that African management is agile by nature. African businesses have been managed in line with the above-mentioned values long before the term “agility” for this management principle was invented. For instance, the affordable, stop-and-go minibus taxi industry of many African countries flexibly manages to provide public transport regulated by passengers’ needs rather than well-documented schedules that are common in Western public transport systems. Passengers and not fixed bus stops define the entry and exit points and these vehicles leave when full rather than at a scheduled time. This accords with the concept of “African time” that has been criticised as lack of discipline and punctuality from a (post)colonial perspective (Nobles 2000). What has often been criticised as chaotic in the past is more commonly embraced as agile and disruptive innovation in the present. For instance, the new ridesharing services company Moia, fully owned by the Volkswagen group, digitally organises sharing minibus taxis in two German cities along certain routes that are independent of fixed stops and time schedules. Again, this mind-shift in the digital age is mostly framed as Western accomplishment although arguably founded on values and princi-



Figure 1: Team climate dimensions fostering innovation.

Source: authors' own compilation

ples that originate in indigenous and African cultures and practices rather than Western Platonic traditions and Western corporate cultures (Abdi 2018; Lutz 2009).

Digitalisation out of Africa

„I am guided each day by these three questions: ‘What are you fixing?’, ‘What are you making?’, and ‘Who are you helping?’“

– Juliana Rotich (2013), Founder of Ushahidi⁴, Kenya

The second machine age might be driven by technological innovations but can only be pursued successfully if strategies and cultures adapt to the volatile, complex, and uncertain nature of today’s world. African cultures appear to be better prepared to cope with the lack of a clear, single-minded and foreseeable environment than non-African traditions. Thus, Africa can rather be regarded as a starting point than a mere recipient of ICTs that have been created in the innovation hubs in the Silicon Valley, Tel Aviv or Beijing. In order to substantiate our thesis, we will present differing business cases of digital offers made in Africa.

⁴ Ushahidi, meaning “testimony” in Swahili, is a technology leader in Africa, headquartered in Nairobi, with a global team. The social enterprise provides software and services to numerous sectors and civil society to help improve the bottom up flow of information.



Figure 2: One of the Meeting Rooms at GetSmarter's office in Cape Town with furniture in line with the education theme. *Source: authors, courtesy of GetSmarter*



Figure 3: Value Badges. *Source: authors, courtesy of GetSmarter*

Business Case 1: GetSmarter

GetSmarter is a South African provider of premium online courses with a data-driven educational focus founded by brothers Sam and Rob Paddock in 2008. The core of GetSmarter's business model is the insight that "the best learning takes place with support from, and in collaboration with, other people" (GetSmarter 2015, p. 6). In line with this conviction, the company developed their service offer to deliver a more learner-centric approach to online learning than their competitors, which the founders perceived to be "an industry plagued by low completion rates and poor student satisfaction" (GetSmarter 2015, p. 5). In addition to high quality content and technically reliable short courses, each student at GetSmarter receives personalised support in terms of academic, performance, technical, and administrative help throughout his or her participation based on real-time learning analytics. As skills that are relevant to and recognised by institutions and companies are a key driver of individual growth and the wealth of African people, their fami-

lies, and communities, the mission of the company is not only to provide knowledge but to "improve lives through better education" (GetSmarter 2015, p. 8).

Similar to the agility principles (see above), this small educational start-up neglected the sophisticated documentation of a traditional business plan and instead created a "One-Page Strategic Plan", focussing on creating the right community in terms of collaboration partners and team members instead. Their registered trademark "Relationships first" approach resulted in a continuously increasing number of courses and employees. In order to meet the demands of superior student support, the GetSmarter team grew to more than 400 fulltime employees based in South Africa in 2018 and this number has recently soared to over 600. Human resources (HR) initiatives such as providing facilities that enable flexible team meetings, sprint meetings, and workshops in a creative and playful environment (see figure 2) demonstrate that individuals and interaction are key and more important than organisational processes.

A Chief Happiness Officer (Weber and Gesing 2019) manages the well-being of staff and supports traditional HR initiatives through a variety of initiatives to cultivate team spirit and positive leadership (Dallwitz-Wegner 2016). The corporate culture revolves around a set of values that are closely associated with the com-

pany's mission. Employees can honour each other through value badges that are designed in line with the corporate identity and mission (see figure 3).

In 2016, GetSmarter decided to expand out of Africa. Goldsmiths, University of London was the first international university presenting an online course – on Digital Marketing – in collaboration with GetSmarter. Following this leap into international waters, more universities outside Africa became interested in partnering up with the South African company, amongst others the Massachusetts Institute of Technology, Harvard University, Rice University, the Stanford Center for Health Education, and the London School of Economics and Political Science. In so doing, GetSmarter has enabled thousands of working professionals to cultivate skills they could use to have an immediate impact in their careers and aims for improving one million lives by the end of 2030. In 2017, GetSmarter received the opportunity to speed up their progress in reaching this goal by being acquired by the US-American edtech company 2U, who

have maintained the GetSmarter brand. The Paddocks brothers bid their farewells, not only rich in online education prowess but in monetary terms as well.

Business Case 2: GetSchool'd

„Prior to university, I only learned and spoke in two native languages, namely Xitsonga and Sepedi. My first-year experience was gut wrenching. I felt out of place and could not hear nor understand anything either of my lecturers was saying. I struggled with weekly tutorials and assessment. I failed my first few tests and had to extend my program, which meant more debt because I relied on government assistance and loans. Had there been a multilingual, inclusive and affordable learning platform, maybe I could have followed my dream of being an Astrophysicist.“

– Breyden Monyemoratho, BSc Hons Computer Science, from Seshego, Limpopo (quoted from his presentation of business propositions at University of Cape Town on 14 February 2018)

The Global Information Technology Report (Baller and Dutta 2016) reflects the results of an initiative of the World Economic Forum, which globally assesses education systems. Regarding maths and science education, essential for many jobs in the digital economy, South Africa ranked 139 out of 151 countries, receiving the highest African score. ICT solutions for the support of students have been successfully launched in recent years, but students still struggle to find solutions catering for the multi-lingual and multi-cultural challenges in tutoring.

*Digitalisation offers a valuable springboard
by making use of African values and practices when designing
and creating innovative ICT solutions.*

GetSchool'd is one of a series of cutting-edge product propositions that African computer science honours students created during their collaborative Professional Communication and New Venture Planning courses at the University of Cape Town in 2018 (see figure 4). This innovative ICT product aims to provide an online one-on-one quick-fire tutoring experience.

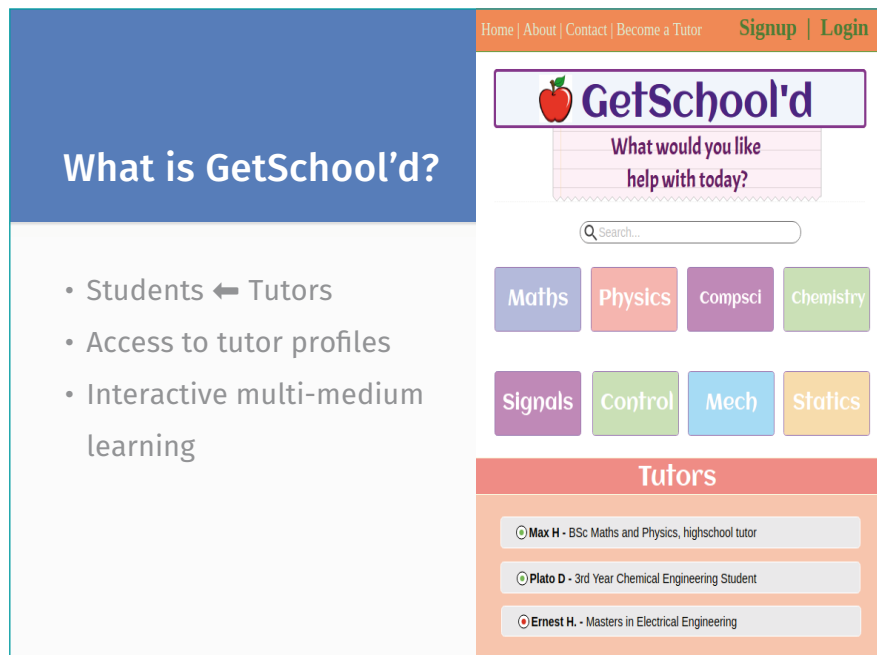


Figure 4: How the app “GetSchool'd” will work.

Source: Abraham et al. 2018

GetSchool'd therefore envisages to build a diverse multilingual student team that will be trained in competencies needed for tutoring. The innovative ICT platform will help to match African students in need of support with relevantly educated and experienced senior student tutors. Besides English, Xhosa, Sotho, and Zulu, tutors will be able to speak less common African languages. African students from various backgrounds will therefore be supported in reaching their academic goals and finding jobs that reflect their talents rather than their language skills.

Business Case 3: ParkBot

The “mobile revolution” (Krauß 2018) in Africa comes at a price. For instance, the growing number of cars due to shortcomings of public transport infrastructure contributes to in-

creasing congestion. The time spent in traffic jams and looking for a free parking space has a negative impact on productivity, quality of life, and health in many African countries. Thus, the “ParkBot” app aims to address ecological and economic problems by reducing petrol consumption, the time lost in parking troubles and stress. This service proposition intends to capi-

Park Bot

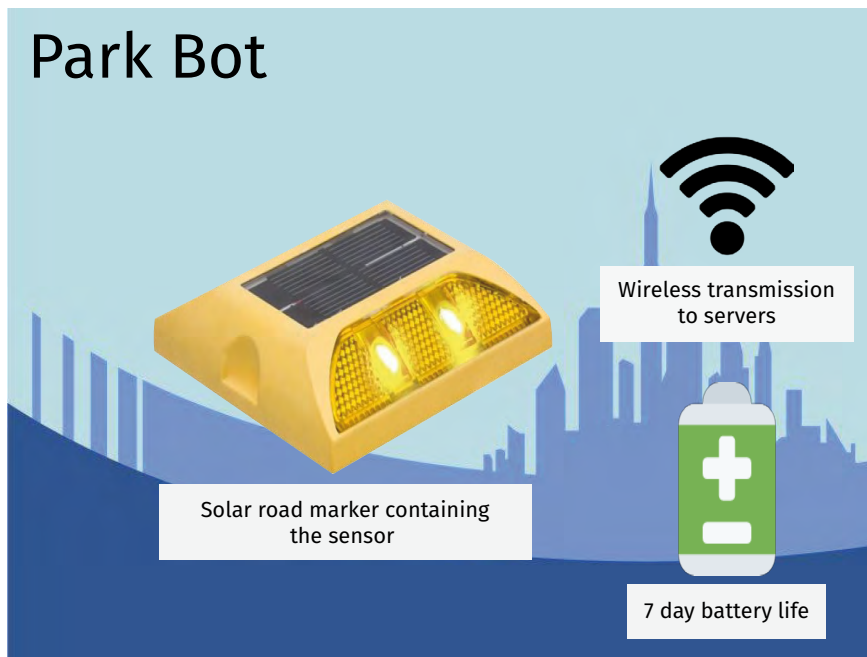


Figure 5: How the app “ParkBot” will work.

Source: Dolley et al. 2018

rate mind-sets regarding entrepreneurship in their cultures.

These offers might focus on solutions for specific needs in African regions or on global needs such as user-centric transport, individualised education or environmentally friendly consumption. However, the distribution and ownership of these digital services might represent an essential challenge to African countries and corporations due to the lack of stable political systems, technological education and financial funding that are needed to nurture a sustainable culture of digital entrepreneurship. Not only are these innovations, such as the South African online education provider, GetSmarter, and business propositions like ParkBot and GetSchool’d, good for the continent itself. As has been shown, they may have global appeal demonstrating that digitalisation “into Africa” may be counter-balanced by digitalisation “out of Africa”.

talise on the convenience and interconnectedness of the digital age and to support African countries in building smart(er) cities.

Road markers will be equipped with solar panels and sensors that identify whether parking spaces in public and possibly private areas are available (see figure 5). The data will be transmitted wirelessly. Users of “ParkBot” can identify in real-time where parking is available close to their current location. Additional characteristics about the type of parking (e. g. with or without fees, in shade) can be provided via the app allowing drivers to find the best parking for their needs and decreasing economic and ecological problems of many African countries.

Conclusion

The digital age can only be pursued successfully if strategies and cultures adapt to the nature of the VUCA world. Because African cultures appear to be more lean, more agile and community-oriented, they have the potential to better cope with the lack of a clear, single-minded and foreseeable environment than non-African traditions. Thus, we have argued that digitalisation offers a valuable springboard by making use of African values and practices when designing and creating innovative ICT solutions. The business cases presented in this contribution introduce a small sample of the representatives at the forefront of the “digital entrepreneurship revolution in Africa” (Ndemo 2017, p. 2) that could emerge successfully despite high unemployment rates, limited technological infrastructure, and dispa-

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