

SPECIAL TOPIC

Digitalization in the Global South

What are opportunities and risks of ICT in a global context from an ethical and interdisciplinary point of view? This TATuP special topic addresses often neglected issues, like unequal power relations, neo-colonialism, (digital) illiteracy, general barriers to access, or the gender digital divide.

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Ethical questions of digitalization in the Global South

Perspectives on justice and equality

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Digitalization and information and communications technology (ICT) influence and transform the world economy, our everyday life, politics, and our way of communicating. This entails opportunities and benefits as well as risks, challenges, and difficulties for all actors involved. Especially in the African context, but also in other countries of the Global South, there are important questions and aspects of digitalization which have to be addressed by technology assessment (TA) from an ethical point of view: questions of unequal power relations, neo-colonialism, (digital) illiteracy and language barriers, general barriers to access, and the gender digital divide. To broaden the perspectives of TA in global contexts, these issues should be discussed by different scientific disciplines, equally considering the positions of those affected. The inter- and transdisciplinary approaches in this TATuP special topic make a much-needed contribution to TA of digitalization in a global context.

Ethische Fragen zur Digitalisierung im Globalen Süden Perspektiven auf Gerechtigkeit und Gleichberechtigung

*Digitalisierung und Informations- und Kommunikationstechnologien (IKT) beeinflussen und verändern die Weltwirtschaft, unser Alltagsleben, die Politik und unsere Kommunikation. Das birgt Chancen und Vorteile, aber auch Risiken, Herausforderungen und Schwierigkeiten für alle beteiligten Akteur*innen. Besonders im afrikanischen Kontext, aber auch in anderen Ländern des Globalen Südens, gibt es wichtige Fragen und Aspekte der Digitalisierung, die in der Technikfolgenabschätzung (TA) von einem ethischen Standpunkt aus adressiert werden müssen: Fragen zu ungleichen Machtverhältnissen, Neokolonialismus, (digitalen) Analphabetismus und sprachlichen Barrieren sowie zu allgemeinen Zugangsbarrieren und der digitalen Kluft zwischen den Geschlechtern. Um die Perspektive von TA in globalen Kontexten zu erweitern, sollten diese Fragen aus unterschiedlichen wissenschaftlichen Disziplinen heraus diskutiert und die Perspektive derjenigen miteinbezogen werden, die im konkreten Fall betroffen sind. Die inter- und transdisziplinären Ansätze in diesem TATuP-Thema leisten einen wichtigen Beitrag zur TA der Digitalisierung im globalen Kontext.*

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Keywords: digitalization, ICT access barriers, power relations, ethical questions, value-laden technology

Introduction

Although people in the Global North are usually not exposed to the latest developments in the Global South, it seems that Northern media increasingly reports stories of digitalization processes in the Global South, especially in Africa: Africa as an untapped pool of digital talent, Africa leapfrogging development and closing the digital divide, Africa as a home to start-ups and international tech hubs. Transnational corporations deliver a growing number of services to the continent. On the one hand, the governments of China, Europe, and the United States of America (USA), development organizations, civil society, and researchers also increasingly promote, implement or analyze digitalization in the Global South, particularly in Africa. On the other hand, governments of countries in the Global South are themselves striving for digitalization at home.

The worldwide process of digitalization opens up a new field for technology assessment (TA) in an interconnected world of shared responsibilities. TA stems from technology-driven problems in the Western hemisphere, particularly in the US in the 1960s. In this context, TA was a question of political regulation and engineering ethics. Technology as an area for experts and/or industrial technologies was complemented by a new kind of personalized technology, which was simultaneously established by new super companies and individual users. With the emergence of the public usage of information- and communications technology (ICT) in the 1990s, new aspects of TA came to the fore: individual responsibilities, supranational regulations, intercultural values, and at the same time global efforts to use tech-

nologies for a better society. In response to the transformation in human-machine interaction, ICT calls for underlining the relevance of new forms of governance and participation in TA.

Against the backdrop of widespread optimism, this TATuP special topic addresses less regarded aspects of digitalization in the Global South¹. These neglected aspects include neo-colonialism, barriers to access, (digital) illiteracy, and the gender digital divide. They all relate to unequal power relations between the Global North and South and between different stakeholders in society, as well as existing socioeconomic, gender, and ethnic relations. They engender inequalities such as global digital divides (see Wakunuma in this TATuP special topic), and, in the context of digitalization and the project of a global information society, they provoke ethical questions about global justice and equality.

The present article exemplarily provides an overview of the status quo of digitalization in Africa while simultaneously addressing the following issues, which are dealt with in detail in the individual articles of this special topic:

- (i) **Neo-colonialism:** From a postcolonial perspective, digitalization processes in the Global South are a cause for concern as the dominance of foreign players and foreign ICT – and therefore foreign values, perspectives, and ideas – resembles colonial structures (see Holdermann and Aal in this TATuP special topic).
- (ii) **General barriers to access:** Barriers include strong regional differences in internet and ICT adoption rates, high costs of internet (e. g. mobile data), existing social inequalities which may reinforce or exacerbate access barriers, and government-facilitated internet shutdowns. Moreover, (digital) skills, language, and gender can constitute barriers, but also social hierarchies that prevent people from benefitting from access (see Keja and Knodel in this TATuP special topic).
- (iii) **(Digital) illiteracy and language barriers:** Skills such as (digital) literacy and (English) language skills are crucial to facilitate or even enable access to ICT in the first place. With illiteracy and language barriers persisting among some societal groups, ICT cannot be used as intended. However, people are slowly appropriating ICT and developing strategies to benefit from them (see Sègla in “Images and voices from digital Africa” in this TATuP special topic).
- (iv) **Gender digital divide:** Social, economic, and political barriers often impede women’s access to ICT. Women generally have lower ICT literacy rates, less ownership of devices, and therefore less access². This is a global phenomenon,

seen in for instance Latin America as much as in Africa (see Martinez Demarco in this TATuP special topic).

In regarding these issues, this TATuP special topic discusses important but largely neglected ethical aspects of digitalization. On the one hand, ethical perspectives are crucial to evaluate digitalization processes in terms of justice and to provide concepts for an inclusive and fair development of the African and international information society in the future. On the other hand, it is vital to consider counter narratives as sources of empowerment; for instance, values and traditions in Africa and elsewhere may serve as a source of success in digital transformation and allow for digitalization “out of Africa” (see Rademacher and Grant in this TATuP special topic).

Actors and power relations in Africa’s digitalization process

Politics and power relations arguably lie at the core of Africa’s digitalization process. Involved stakeholders include national governments, inter-governmental bodies such as the African Internet Governance Forum, as well as foreign governments; transnational corporations like Alphabet, Alibaba, Tecno Mobile, or the German IT company SAP; but also start-ups and tech hubs; civil society organizations, activists, journalists, and, of course, users.

National governments are important key drivers of digitalization on the African continent. Due to their engagement, digital service provision has increased over the past years and the mobile economy has created numerous new jobs. Yet, African governments’ digitalization agendas remain vague in terms of goals and steps to be taken. Additionally, many governments engage

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in abusive practices to control the flow of information, particularly on social media. Thereby, governments strategically use internet shutdowns, mostly around the time of elections or during protests (Majama 2018).

At the international level, political and economic power relations pervade negotiations on internet governance, for instance in the area of e-commerce. Online trade and shopping have been met by massive demand in Africa, and African governments

1 Thereby, it is inspired by the stimulating debates that took place at the conference “Digitalization in Africa: Interdisciplinary perspectives on technology, development, and justice” in Tübingen, Germany, in September 2018.

2 It is important to note that not all women are disadvantaged or equally affected by the so-called gender digital divide, and that not all men have more access than all women. This paper does not intend to essentialize. However, space constraints mean it can unfortunately merely address “women” rather than a variety of gender identities.

have embraced this trend. Yet, when it comes to international negotiations on e-commerce (e. g. at the World Trade Organization – WTO), African governments' performance and position vis-à-vis the USA and China are weak (Kiiza 2018), which might be due to their high indebtedness and the organizational character of global actors such as the World Bank or the WTO.

Global tech giants such as Facebook, Microsoft, Huawei or Alibaba also embody unequal power relations within Africa's digitalization process. Thereby, their role is ambiguous: On the one hand, transnational corporations empower local people by providing much-needed economic opportunities in the form of

ing the digital divide (Wakunuma 2018; Masika and Wakunuma 2017; Kelbessa 2018). Moreover, concerns regarding autonomy and freedom of expression arise with regard to China's heavy investment in African digitalization: China as an authoritarian regime has few inhibitions to align with authoritarian African governments and provide technology for repressive practices (Majama 2018; Wakunuma 2018). Overall, the fact that political regimes can be embedded in technology for development in the Global South adds another important layer to recent debates in TA over the relation between technology, TA, and democracy (Grunwald 2018).

The paradigm of progress has been central to modernization theory and has promoted the export of Western interpretations of certain values through value-laden technology.

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ICT-based jobs (Busch 2018). On the other hand, exploitation and precarious work conditions are prevalent in the digital economy – for instance the dumping of foreign e-waste in African countries or the employment of women in the low-wage and low-skill ICT sector (Kelbessa 2018; Gillard et al. 2008). Moreover, transnational tech giants have been accused of so-called digital colonialism. This is one of the four above-mentioned aspects of digitalization processes in the Global South that we will now assess in more detail.

Digital colonialism

Concerns about digital colonialism are caused by increasing ICT exports, in particular from Western countries and China to Africa (Wakunuma 2018). Among the most used ICT systems in Africa today are those produced by Huawei (China), Tecno Mobile (China), Motorola (USA), Infinix (Hong Kong), and Samsung (South Korea). These companies have realized the potential of African markets and started catering to the needs of Africans, e. g. by creating longer-life batteries that answer to the problem of scarce power supplies in many African regions (Majama 2018). However, by exporting their products to a vastly different cultural context, transnational corporations are also imposing their values (embedded in the design of their technologies) on African people.

Specifically, technology production, promotion, and export are based on the idea that progress through technology is vital for the advancement of societies. This paradigm has been central to modernization theory and has promoted the export of Western interpretations of certain values through value-laden technology (Heesen 2004). Such technology centered conceptions of progress and development may conflict with local conceptions, e. g. in the case of privacy (see below). Besides, exported Western or Chinese technology may be based on discriminatory algorithms and incorporate gender biases, further deepen-

Several dangers for African ICT users thus result from exported technology, fostered by unequal power relations. These include value impositions, the potential abuse of private data, and surveillance. Besides, new (technological) dependencies may be created (Wakunuma 2018; Kelbessa 2018). Often, development projects from the Global North link their financial support to so-called good governance, and good governance to e-governance. This situation can reinforce the overall dependency of countries in the Global South, since software and hardware systems become crucial to functioning public sectors. However, these systems have been introduced by the USA or China and cannot necessarily be maintained by key actors in countries of the Global South (Wade 2002).

General barriers to access

Other challenges of digitalization include limited or no access to ICT devices and services, the high cost of airtime or data, and weak ICT infrastructure. Even though “the digital face of Africa is mobile” (82 percent of the African population had a mobile connection in 2018), only a portion (34 percent) of the population had access to the internet in 2018. While mobile phones are prevalent, bandwidth is scarce and the cost of internet access constitutes a significant percentage of a user's income (Majama 2018; Kemp 2018). Despite much activity in the field of digitalization, in reality most Africans have no access to the internet. Infrastructure and affordability remain important issues on Africa's digitalization agenda.

While these issues are arguably mainly economic, government shutdowns and associated repressive policies (e. g. after the 2016/17 elections in Uganda) constitute notable political barriers to people's access to information and ICT. Beyond the fact that journalists, activists, and human rights advocates are particularly negatively affected by these crackdowns on free speech, these so-called blackouts also impede areas such as healthcare

provision, and have massive economic impacts, compromising the promise of economic prosperity through digitalization. Increasingly, civil society actors are now seeking legal remedy by contesting shutdowns in national courts, e. g. in Uganda, where the shutdown of 2016 (social media such as Facebook or Twitter were blocked during the elections) are still reviewed by the high court in Kampala (Dahir 2018).

(Digital) illiteracy and language barriers

Even when general barriers to access are overcome, users may lack the skills to benefit from ICT: Illiteracy persists in many African societal groups, and the illiterate cannot use most ICT systems as intended. Moreover, language barriers remain a major challenge, as exported technology is often not available in local languages (see Sègla in “Images and voices from digital Africa” in this special topic). Lastly, users may lack skills such as basic electronic data processing knowledge or information literacy skills needed to independently use ICT (Toffa 2018).

At the local level, people are working around these issues by appropriating ICT to suit their needs and preferences. By way of example, indigenous people such as the Yoruba in West Africa struggle with the use of ICT services such as SMS and online platforms (whether e-government or social media), which rely on alphabetic literacy and are often designed in a foreign language. The mostly illiterate Yoruba people of Benin have thus developed strategies to nonetheless benefit from ICT such as using signs and specific symbols or voice messages on WhatsApp (see Sègla in “Images and voices from digital Africa” in this TATuP special topic).

This example shows that basic ICT skills are crucial. Small steps matter, whether it is learning to create a blog entry or exploring all functions of one’s phone (Toffa 2018). This is especially true for marginalized members of society.

Another barrier to women’s information access is gendered violence online such as doxing, stalking, bullying, and even revenge pornography (Segrave and Vitis 2017). Violence may also extend into the private sphere, with a husband controlling his wife’s mobile phone due to a fear of her flirting online. Finally, women have been found to lack confidence when it comes to ICT use and the “technology-is-not-for-me-syndrome” is prevalent among women (Wakunuma 2018). Improving women’s digital skills is one solution that can contribute to reducing the cycle of poverty and preparing women for the future of work (Toffa 2018). ICT training for women and girls potentially leads to new competences and leverages female empowerment, eventually resulting in a transformation of established power relations (Ramey and Brzezinski 2018). On the other hand, there is the danger of discriminating against gender non-conforming people by providing ICT training only for women (see Martinez Demarco in this TATuP special topic).

Ethical questions of digitalization in Africa

The discussion above demonstrates that, while much has been done to advance digitalization in Africa, inequalities and divides in ICT access persist between the Global South and North, men and women, rural and urban areas, and the generations. Power relations within the process of digitalization are asymmetric, and transnational corporations, foreign governments, and national repressive policies shape Africa’s digitalization.

This is striking, given the widespread optimism that connecting different world regions would automatically lead to prosperity, democracy, and more global equality. Even though the internet was at first available only to elites, the idea was that, over

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Gender digital divide

The gender digital divide refers to inequalities with regard to ICT access and use between men and women. Social, economic, and political barriers hinder many women’s access to ICT. Women have lower ICT literacy rates, less ownership of devices, and therefore less access (Chakravorti 2017; ITU 2017). Patriarchal structures and cultural practices of both male and female authorities impede access, because they consider internet content inappropriate for wives and daughters. Moreover, there is concern that women may neglect their household and family responsibilities, which are ascribed to them due to the prevalence of gender roles (Majama 2018).

time, everyone would eventually enjoy the benefits of digital life. Moreover, it was believed that ICT would have a democratizing effect similar to a Habermasian ideal speech situation: If everyone had the opportunity to voice their opinion, democracy would flourish (Ess 2018).

Ethicists have pointed out that this technological determinism does not hold true in light of the American and Chinese domination of global digitalization processes and the replication of social structures of inequality in the digital sphere (Ess 2018). Kelbessa (2018) calls for the establishment of codes of ethics and responsibilities to be followed when developing and introducing new technologies. Sustainable development, partici-

pation and self-determination should be at the core of technological innovation. Ethical concerns about digitalization in Africa include (1) the fear of digital colonialism through value-laden technology, (2) the violation of privacy and its implications for societies and individual identities, and (3) the exclusion of marginalized populations as well as the neglect of environmental protection (Schelenz and Schopp 2018).

Addressing concern (1), philosophers of technology argue that technology is not neutral but has certain values embedded in it. These values reflect the norms and standards of the society where the technology was developed (Simon 2016). In the African context, the above-mentioned implementation of foreign

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values (especially through technology as a symbol of modernization and progress) is particularly delicate, as it resembles and potentially replicates the imposition of European norms during colonial times. While African countries have struggled to decolonize and end European control, digitalization may now pave the way for new forms of “digital colonialism” (Wakunuma 2018; Ess 2009). Thereby, foreign values may be imposed on African societies through “computer-mediated cultural imperialism” (Ess 2009, p. 116). One example is Facebook’s application “Free Basics”. The App includes Facebook, BBC, some pages of Wikipedia, and other sites such as job portals or maternal health information. “Free Basics” has been criticized for providing only certain content and violating principles of net neutrality, displaying mostly Western content and ignoring popular national or local websites, prioritizing English over local languages, not responding to the needs of users, and collecting large amounts of data (Global Voices 2017).

Digitalization through value-laden technology is further complicated by the fact that different societies might have different interpretations of the same value. One example is privacy, which is usually understood as individual privacy in North America and Europe. However, African and Asian societies see privacy as related to the community. When regarding digitalization in the Global South, scientists and practitioners must therefore consider notions of privacy, e. g. by engaging with the philosophy of Ubuntu, and how they conflict with Western privacy concepts embedded in ICT. Intercultural information ethics deals with exactly such ethical questions, aiming at integrating diverse cultural perspectives (Ess 2009, 2018).

With regard to concern (2), ethicists are worried about the lack of data protection in the context of digitalization in Africa. This is a particularly sensitive topic, as human rights violations remain frequent in many countries. ICT-based projects such as the documentation of human rights violations in Kenya on the Ushahidi platform are thus necessary to raise awareness and hold violators accountable (Kelbessa 2018). When privacy and data of computer scientists developing such platforms and of journalists providing information about abuses is endangered, openness, justice and democracy are at stake. Moreover, another concern regarding data protection in the African context is the widespread lack of digital literacy, including knowledge on how to protect one’s data from unwanted privacy intrusions.

Concerning (3), ethicists address the exclusion of marginalized populations through language and technology design, which does not take into account end users’ perspectives in the development of devices, apps, and ICT literacy programs (Heeks 2008). Finally, environmentalists see environmental ethics being violated through digitalization in Africa, for example through the exportation of e-waste to African countries, which has seriously negative effects on marginalized populations and the environment (Kelbessa 2018).

The frequently neglected ethical concerns raised in this paper and the potential ethical responses point towards new questions central to all fields of study and practice engaging in and reflecting upon global digitalization: What does an equal and fair global digital society look like? And how can we put that into practice?

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Wie dekolonial kann Kooperation sein?

Kritische Anmerkungen zu IKT-Interventionen im Globalen Süden

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Projekte zu Informations- und Kommunikationstechnologien (IKT) in der Entwicklungszusammenarbeit im Globalen Süden operieren mit impliziten und expliziten Vorstellungen, Ansprüchen und Zielen. Die kritische Reflexion zu den Rahmenbedingungen, dem ethischen Status und den Konsequenzen solcher IKT-Interventionen und -Projekte kommt dabei oft zu kurz. Durch eine interdisziplinäre Perspektive und unter Rückgriff auf post- und dekoloniale Theorie können die Bedingungen und Partizipationsmöglichkeiten von „Nord-Süd-Kooperationen“ problematisiert und die ihnen zugrunde liegenden Begriffe, Konzepte und deren Konnotationen kritisch beleuchtet werden. Auf der Basis eigener Erfahrungen mit designorientierten Herangehensweisen in einem entwicklungs- und bildungspolitischen Projekt im Hohen Atlas in Marokko sollen diese Kritiken und Problemstellungen veranschaulicht und reflektiert werden. Indem eigene Vorannahmen, Erwartungen und Ansprüche auf den Prüfstand gestellt und Projektverlauf, Technikaneignung und interne Kommunikation nicht als gesetzt, sondern als prozesshaft und wechselseitig aushandelbar verstanden werden, können die Bedingungen für Kooperation in eine dekoloniale Richtung weisen.

How decolonial can cooperation be?

Critical remarks on ICT interventions in the Global South

Information and communications technology (ICT) interventions and development cooperation projects in the Global South operate with implicit and explicit ideas, expectations, and goals about the course of the project and cooperation. Critical reflection on the framework conditions, ethical status, and consequences of such ICT interventions and projects is often neglected. Through an interdisciplinary perspective and recourse to post- and decolonial theory, the conditions and participation possibilities of “North-South cooperation” can be problematized, and the underlying concepts and connotations can be critically examined. Based on our own experiences with design-oriented approaches in a development and education project in the High Atlas in Morocco, we will illustrate and discuss these critiques and problems. The conditions for cooperation can point in a decolonial direction by

putting one’s own assumptions, expectations, and demands to the test and by understanding project progress, technology appropriation, or internal communication not as given but as process-oriented and mutually negotiable.

Keywords: cooperation, Morocco, participatory design, ICT, postcolonial/decolonial critique

Einleitung und Projektvorstellung

Im Folgenden wollen wir anhand eigener Projekterfahrung über Problemstellungen bei Informations- und Kommunikationstechnologie-(IKT-)Interventionen im ‚Globalen Süden‘¹ reflektieren. Man befindet sich bei Projekten mit entwicklungspolitischem und gestalterischem Anspruch häufig im Spagat: Einerseits steht man handfesten Missständen gegenüber, die von Menschen vor Ort als solche empfunden und beschrieben werden (bspw. hinsichtlich Trinkwasser, Abfallbeseitigung, medizinischer Versorgung oder Bildung) und für deren Problemlösung sich lokale oder transnationale Akteur*innen aktiv einsetzen. Andererseits können Expertisen, normative Vorstellungen und Praktiken aus dem ‚Globalen Norden‘ Abhängigkeiten hervorbringen oder gar zementieren. Wie kann vor diesem Hintergrund das eigene Vorgehen, bzw. die gemeinsame Arbeitsweise, vorhandene Machtasymmetrien zu jeder Zeit kritisch zur Disposition stellen? Und auf welchen Wegen können Interventionsprojekte und Kooperationsbedingungen ‚dekolonialisiert‘ werden?

Um zu erklären, wie wir selbst mit den Fragen dieses Beitrags in Berührung gekommen sind und auf welchen eigenen Erfahrungen diese fußen, möchten wir zunächst unser eigenes Projekt beschreiben. Das interdisziplinäre Forschungsprojekt B04 im Rahmen des Sonderforschungsbereichs (SFB) 1187 „Medien

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1 Bei der ersten Verwendung von ‚Globalem Süden‘, bzw. ‚Globalem Norden‘ nutzen wir die Anführungszeichen, um darauf hinzuweisen, dass die Begrifflichkeiten nicht völlig neutral oder unumstritten sind (Comaroff und Comaroff 2012).

der Kooperation“ setzt sich zu einem Teil aus Sozio-Informatik (Wulf et al. 2018) und zum anderen aus Ethnologie zusammen. Gemeinsames Forschungsinteresse ist dabei, wie Medientechnologien und die sie umgebenden Medienpraktiken mit der weitreichenden Transformation einer Gebirgsregion im Hohen Atlas in Marokko zusammenhängen. Während die Sozio-Informatik auf Basis empirischer Forschung sozio-technische (Infra-)Strukturen in Form eines Computer Clubs (Aal et al. 2014) gestaltet und implementiert, verfolgt die ethnologische Forschung, welche Formen von Kooperation durch die Nutzung von Medientechnologie vor Ort entstehen und wie diese sich mit den lokalen politischen und sozio-kulturellen Begebenheiten und Ordnungen in Beziehung setzen lassen.

Die Intervention ist dabei zugleich eine Methode der sozio-informatischen Wissensproduktion und ein Projekt der Entwicklungszusammenarbeit. Als Teil eines Projekts in dem von der Deutschen Forschungsgemeinschaft (DFG) geförderten SFB, ist die DFG somit auch Geldgeber für die sozio-informatische Intervention. Der Umfang von Projekt und Intervention wird durch die im bewilligten Antrag abgesteckten Rahmenbedingungen vorgegeben. Darüber hinaus liegt der Ort der Intervention im wissenschaftlichen Erkenntnisinteresse und den eigenen Forschungsschwerpunkten begründet: Es handelt sich um eine stark verwandtschaftlich strukturierte Region, die von profunden sozio-ökonomischen, infrastrukturellen und technologischen Umbrüchen gekennzeichnet ist. In Verbindung mit detaillierten Ethnographien zu den lokalen Bezügen wird so eine Analyse der Transformationsprozesse und Herausbildung transnationaler Verknüpfungen in historischer Tiefe möglich.

Rahmenbedingungen, Erwartungen und Herausforderungen der IKT-Intervention

Insgesamt lassen sich drei Gruppen von Beteiligten identifizieren: die Forscher*innen aus Deutschland, die lokale marokkanische Nichtregierungsorganisation (NGO) und die Zielgruppe, d. h. all diejenigen, die durch das Projekt adressiert werden sollen. Alle Gruppen bringen indes ihre eigenen Erwartungen, Agenden und Zielvorstellungen mit sich.

Einige Rahmenbedingungen des Projekts waren bereits vor der eigentlichen Aushandlung mit den lokalen Kooperationspartnern über den konkreten Verlauf im Projektantrag der Forscher*innen fixiert. Auf Grundlage des Projektantrags konnten die Forscher*innen ihre Explorations- und Vorbereitungsreisen durchführen und vor Ort die lokale NGO als Kooperationspartnerin gewinnen. Im Zuge dessen wurden mit den Verantwortlichen der NGO der Verlauf und die Durchführung des gemeinsamen Projekts besprochen sowie eine vertragliche Kooperationsvereinbarung zwischen NGO und Universität unterzeichnet.²

Im Projektantrag selbst wurden vorab Erwartungen der Forscher*innen formuliert: Der Computer Club könne eine Möglichkeit für lokale Ermächtigung (*empowerment*) sein. Für die lokale Bevölkerung solle damit eine Option geschaffen werden, an Debatten und Diskursen teilzunehmen, von denen sie bislang möglicherweise ausgeschlossen gewesen sei. Unterstützt durch die Projekt-Koordinatoren der lokalen NGO sollten die Teilnehmenden sich – alleine oder in Kleingruppen – in projektspezifischen Arbeiten Medientechnologien wie Tablets, Laptops und Kameras oder Navigationsgeräte und 3-D-Drucker aneignen (Rode et al. 2015). Um den Computer Club erfolgreich zu gestalten und zu etablieren, sollten insbesondere die methodischen Ansätze des Participatory Design (Bratteteig und Wagner 2012) und Grounded Design (Rohde et al. 2017) eingesetzt werden. Diese zielen im Kern darauf ab, die unterschiedlichen Beteiligten gleichwertig im Prozessverlauf – d. h. vom Design über die Implementierung bis hin zur Durchführung – einzubeziehen, sowie Relevanzen, Projektparameter und Zielvorstellungen gemeinsam vor Ort zu erarbeiten und aus der Empirie heraus zu entwickeln.

Die lokale NGO ist als Interessenvertretung für die Belange der Menschen gegründet worden und realisierte vor allem infrastrukturelle Gemeinschaftsprojekte, die auf Verbesserungen des alltäglichen Lebens abzielen, wie Befestigung von Bewässerungskanälen, Müllbeseitigung, oder Nachhilfeunterricht für Schulkinder. Aus diesem Grund hat sie eine hervorragende Reputation in der Bevölkerung und eine gute Vernetzung mit offiziellen Stellen. Der Computer Club wurde von der NGO in das bestehende Nachhilfe- und Förderprogramm für Schulkinder integriert.

Entgegen der Erwartungen der Forscher*innen an projektbezogene, kreative Arbeit mit und an der Technologie, wurde die Technik-Appropriation vor allem in einem Frontalunterricht-Setting angeleitet. Die Projektverantwortlichen wählten Schulkinder als Zielgruppe, da diese „die Zukunft“ seien und noch bereit wären, sich neue Dinge erklären zu lassen. Gleichzeitig waren die Verantwortlichen auf Seiten der NGO davon überzeugt, dass es strikte Schulungsformate und klare Lernziele geben müsse, um den negativ bewerteten Konsequenzen der eigenverantwortlichen Projektarbeit (Ablenkung durch Smartphone und Facebook) vorzubeugen und einen professionalisierten Bildungsrahmen zu schaffen.

Kooperation³ fand und findet im Rahmen des Projekts auf drei unterschiedlichen Ebenen statt: 1) zwischen den zwei Disziplinen Sozio-Informatik und Ethnologie im Forschungsprojekt selbst; 2) zwischen Forscher*innen und lokaler, marokkanischer NGO, mit der für die Intervention eng zusammen gearbeitet wird; 3) zwischen den Organisierenden des Computer Clubs (eigene Projektmitarbeiter*innen und lokale NGO) und der Zivilbevölkerung vor Ort. Hierbei treten durch die jewei-

2 Neben der Anschaffung von Technik wurden darin auch die Finanzmittel für den Betrieb des geplanten Computer Clubs (Stromkosten und Gehalt der Projektkoordinatoren der lokalen NGO) geregelt und festgehalten.

3 Das spezifische Verständnis im SFB, das auch der Intervention zu Grund liegt, fasst Kooperation prozessual als die „wechselseitige Verfertigung gemeinsamer Abläufe, Ziele oder Mittel“ (Schüttelpelz und Gießmann 2015, S. 39).

ligen Kooperationsbedingungen unterschiedliche Reibungspunkte zutage: Die verschiedenen disziplinären Wissenschaftsverständnisse und -traditionen müssen in produktiven Dialog gebracht und Erwartungen, Agenden und Ziele sich gegenseitig deutlich gemacht sowie ausgehandelt werden. Diese gemeinsame Agenda bestimmt wiederum die konkreten sozialen und medientechnischen Praktiken im Computer Club mit den Teilnehmenden.

Kooperation, daran erinnern Star und Griesemer (1989), muss nicht auf einem gemeinsamen Konsens beruhen, sondern es kann durchaus unterschiedliche Interessen geben. In unserem Fallbeispiel war die Zusammenarbeit mit der NGO von Beginn an für die Kommunikation mit allen beteiligten Akteur*innen sowie für das Verständnis des lokalen Kontexts von größter Bedeutung. Gleichzeitig war die selbstverwaltete Appropriation des Computer Clubs im partizipativen Design des Projekts vorgesehen. Jedoch wich die Aneignungspraxis der kooperierenden NGO (Frontalunterricht, Fokus auf Schulkinder) von den im Projektantrag formulierten Erwartungen der Forscher*innen (Projektarbeit und *maker*-Gedanke, offen für alle) ab. Die eher politische Akzentuierung des Projektantrags erfuhr durch die Appropriation der Kooperationspartner*innen im Verlauf vielmehr eine entwicklungs- und bildungspolitische Stoßrichtung. Verschiedene Ansprüche an den Projektverlauf sowie Erwartungen hinsichtlich der Kooperationspartner standen sich widersprüchlich gegenüber.

Wenn die beantragten Projektvorstellungen von der tatsächlichen Umsetzung abweichen, ist dies durchaus ein Grund, einzu-

gischer Artefakte, Infrastrukturen und Prozesse zentral miteinzubeziehen (Mainsah und Morrison 2014). Doch inwiefern steht dieser Ansatz im Widerspruch zur Planbarkeit und Finanzierung von Interventionsprojekten? Bevor wir diese Fragen in der Diskussion erneut aufgreifen, wollen wir uns zunächst dem postkolonialen Moment von ‚Nord-Süd-Kooperationen‘ widmen.

Einwände post- und dekolonialer Kritik

Bereits im Titel dieses TATuP-Themas finden sich die Begriffe „Entwicklung“ und „Fortschritt“, die auch in IKT-Interventionen und Projekten der Entwicklungszusammenarbeit verwendet werden. Diese Begriffe sind diskussionswürdig, weil sie eng mit dem Metanarrativ der Modernisierung verbunden sind. Sie sollen einerseits komplexe Zusammenhänge und Sachverhalte beschreiben, verleiten andererseits aber durch die mitgeführten Konnotationen dazu, den Blick auf die eigentliche Widersprüchlichkeit und Komplexität zu verstellen.

Vor allem Vertreter*innen der postkolonialen Theorie haben auf die Implikationen dieser Modernisierungsvorstellungen hingewiesen (Mignolo 2011; Bhabra 2014; Castro Varela und Dhawan 2015). Der zentrale Parameter von Modernisierung betrifft eine temporale (Ein-)Ordnung, die einen evolutionären Prozess beschreibt und entlang eines linearen Zeitverlaufs gedacht wird. Verbunden mit dem Eurozentrismus und den Vorstellungen über ‚die Anderen‘ wird sie zur teleologischen Scha-

Die Begriffe „Entwicklung“ und „Fortschritt“ sind diskussionswürdig, weil sie eng mit dem Metanarrativ der Modernisierung verbunden sind.

greifen, um den Projekterfolg zu gewährleisten. Gleichzeitig widerspricht diese Steuerung dem partizipatorischen Ansatz, mit dem das beschriebene Interventionsprojekt verfahren möchte. In welchem Verhältnis stehen damit Kooperation und Partizipation?

Hier kommen Fragen nach den impliziten und expliziten Machtstrukturen von Kooperationsprojekten im Globalen Süden im Allgemeinen und von IKT-Interventionen im Speziellen auf. Denn wie und mit welchem Maßstab können und sollen konkurrierende Wissensformen bewertet werden? Wovon hängt der Projekterfolg ab und wer steuert letztlich das Projekt? Im Kern beschäftigt sich Participatory Design mit ebenjenen Fragen der Machtverhältnisse (Bannon et al. 2018), mit dem Ziel, die Kooperationspartner*innen als Expert*innen für eine angemessene Aneignung von IKT bzw. des Computer Clubs entsprechend der sozio-kulturellen Kontexte und lokalen Bedürfnisse wertzuschätzen und infolgedessen an der Entwicklung technolo-

blone dafür, wie universeller Fortschritt erreicht werden könne: Entwicklung durch Modernisierung. Gemäß der impliziten Wertemaßstäbe dieser Vorstellung, wird ‚der Westen‘ (Said 1981) dabei zugleich auf die ‚oberste Entwicklungsstufe‘ gesetzt, in Abgrenzung zu all jenen, die (noch) nicht ‚modern‘ – also ‚entwickelt‘ – seien (Comaroff und Comaroff 1993; Ferguson 1999; Bhabra 2007). Dem Universalitätsanspruch klassischer Modernisierungsvorstellungen wurde durch die Beschreibung und Analyse von dynamischen, *multiplen* (Eisenstadt 2000; Boata und Spohn 2010) oder *alternativen* (Gaonkar 2001) Modernen eine Absage erteilt. Die Modernisierungslogik hält sich jedoch hartnäckig und schwingt auch in der Diskussion um die digitale Spaltung (*digital divide*) mit, wenn Zugang und Nutzung von IKT eine entscheidende Praxis zur Armutsbekämpfung darstellt (Unwin 2017) oder gar als verheißungsvolle Motoren für nachhaltigen, ökonomischen Aufschwung und Erfolg verstanden werden (Graham 2018).

Vorstellungen, in denen Zukunftsorientierung und Fortschrittshoffnung eingeschrieben sind, überführen die Dichotomien ‚traditionell‘/‚modern‘ und ‚entwickelt‘/‚unterentwickelt‘ in eine aktualisierte Form: ‚digitalisiert‘/‚noch-nicht-digitalisiert‘. Die Gefahr jener Vorstellungen relativer ‚Unterentwicklung‘ besteht darin, dass durch sie Widersprüchlichkeiten rezenter Transformationsprozesse unzureichend simplifiziert und damit nicht vollumfänglich erfasst werden können (Bendix und Ziai 2015). Ein Beispiel dafür sind die Bedingungen der Mobilfunknutzung in der wirtschaftlich schwachen und vermeintlich ‚rückständigen‘ Bergregion in Marokko. Die Geschwindigkeit des mobilen Datenempfangs, die zwischen 3G und LTE

Diskussion

Im Laufe der IKT-Intervention im Rahmen des Forschungsprojekts ließen sich unterschiedliche Erwartungen und Widersprüchlichkeiten identifizieren, die auf Grenzen von Kooperation und Partizipation verweisen. Das Versprechen eines partizipatorischen Ansatzes scheint nie vollständig eingelöst werden zu können, weil die Antragstellung dem Projekt vorgelagert ist. Bevor die Kooperation als partizipatives Unterfangen startet, stehen Verlauf und Absicht bereits teilweise fest. Wie weit davon später abgewichen werden kann, bleibt eine projektspezifische Frage. Zudem ist fraglich, inwiefern ein partizipativer Ansatz überhaupt

Es ist fraglich, inwiefern ein partizipativer Ansatz überhaupt gelingen kann, wenn Projekte aus antragsformalistischen Gründen im Globalen Norden designt wurden.

schwankt, ist vor Ort im Hohen Atlas höher als in etlichen ländlichen Gebieten Deutschlands.

Des Weiteren sind Smartphones auch hier aus dem Alltag nicht wegzudenken und bereits für die Mehrzahl der marokkanischen Jugendlichen selbstverständlich. So nutzen unter ihnen 89 % WhatsApp und sogar 95 % Facebook. Dabei verwenden 92 % der Jugendlichen, die einen Social Media Account besitzen, ein Smartphone um sich mit dem Internet zu verbinden (Gertel und Hexel 2018, S. 224–226).

Hierbei geht es nicht darum zu belegen, dass auch Menschen in Marokko ‚modern‘ sind, sondern aufzuzeigen, dass diese Lebenswirklichkeiten durchaus als ‚überraschend‘ oder exzeptionell aufgefasst werden – weil der angenommene ‚Entwicklungszustand der Anderen‘ dies nicht nahe legen würde. Im Gegensatz zu den tatsächlichen, ambivalenten und komplexen Lebenswirklichkeiten sind die imaginierten Umstände viel stärker von einer tiefsitzenden Perspektive der Defizite, Prekarität und sogar Ausweglosigkeit bestimmt (Ferguson 2006). Diese Annahmen wurden zum einen in kritischen Analysen postkolonialer Theoretiker*innen genealogisch auf den Kolonialismus zurückgeführt (Quijano 2007; Mignolo und Walsh 2018). Zum anderen seien, trotz der politischen Entkolonialisierung ehemaliger Kolonialgebiete, sowohl Vorannahmen und Konzepte als auch epistemische Praktiken größtenteils noch nicht dekolonialisiert (Mbembe 2016).

Wenn wir also anhand unseres eigenen Projekts fragen, wie dekolonial Kooperation sein kann, möchten wir damit Konzepte, Praktiken und Erwartungen in der Entwicklungszusammenarbeit im Globalen Süden auf den Prüfstand stellen. Ansprüche über Projektverlauf, Technik-Appropriation oder interne Kommunikation können nicht als gesetzte Fixpunkte verstanden werden, sondern müssen flexibel im gegenseitigen respektvollen Umgang erarbeitet werden.

gelingen kann, wenn Projekte aus antragsformalistischen Gründen im Globalen Norden designt wurden und zu welchem Grad die kritische ‚Offenheit‘ eines gemeinsamen Projektverlaufs gegeben sein kann. Kann ein solches Projekt überhaupt scheitern oder ist es zum Erfolg ‚verdammte‘, gerade weil für die eigene Forschungsbiografie, aber auch im Rahmen der Antragstellung als Rechtfertigung und Verwendungsnachweis der Fördergelder immer entlang des Erfolgs argumentiert werden muss (Li 2007; Rottenburg 2009)? Damit sind es womöglich auch diese Messgrößen und der Bewertungsdruck solcher Projekte, die ein Stück weit die systemischen Bedingungen erzeugen, durch die die Verwendung von simplifizierenden oder gar (neo-)kolonialen Konzepten und Begrifflichkeiten begünstigt werden.

Eine gewisse Machtasymmetrie ist automatisch dadurch gegeben, dass ein solches Projekt stattfindet (Ferguson 1994; Escobar 1995). Schließlich sind es die Vertreter*innen aus dem Globalen Norden, die als Geldgeber fungieren, die Medientechnologie stellen und die aufgrund ihres Wissens und Expertise eine zentrale Rolle einnehmen. Gleichzeitig haben die Kooperation und das Projekt positive Konsequenzen – nicht nur nach den Bewertungsmaßstäben der Projektevaluation, sondern insbesondere nach jenen der Menschen vor Ort. So kann die lokale NGO ihre Position als wichtige zivilgesellschaftliche Akteurin stärken und Verbesserungen (ihren eigenen Wertevorstellungen entsprechend) herbeiführen, indem sie auf zuvor nicht verfügbare Ressourcen zurückgreifen kann. Zusätzlich ist es über den gemeinsam geschlossenen Kooperations-Vertrag auch mit rechtlichem Rückhalt möglich, Ansprüche geltend zu machen.

Bei IKT-Interventionen zu kooperieren, heißt sicher auch immer bereit zu sein, eigene Vorstellungen und Erwartungen über die gemeinsame Kommunikation und den Projektverlauf neu auszuhandeln. Sowohl fachinterne Methoden- und Theoriediskussionen der Ethnologie als auch der Sozio-Informatik haben

Impulse zum Umgang mit eben jenen Fragen geliefert. Mit der Betonung der Koproduktion von wissenschaftlichen Erkenntnissen und deren unausweichlich politischen Komponenten haben in den letzten Jahren die Bestrebungen zugenommen, die eigenen Methoden (Smith 1999) bzw. die diesen zu Grunde liegenden epistemischen Praktiken (Verran 2001) zu dekolonisieren (Mbembe 2017; Savransky 2017). Zudem scheint auch der praxistheoretische *turn* in den Sozialwissenschaften (Schäfer 2016) vielversprechende Hinweise darauf zu bieten, welche alternativen Möglichkeiten bestehen, um sich in Kooperationszusammenhängen zu begegnen (Lassiter 2005; Hilton 2018).

Wenn die Praktiken und Konzepte ‚der Anderen‘ der eigenen Theoriebildung vorgeordnet werden, heißt das, auch die mit hineingetragenen Zuschreibungen und Vorannahmen zu reduzieren. So kann ein Möglichkeitsraum dafür entstehen, den gemeinsamen Projektverlauf als von Beginn an offen und prozesshaft anzusehen und als solchen auszuhandeln und zu gestalten. Hier setzt von anderer Seite der sozio-informatische Ansatz des Participatory Design an. Dieser räumt jenem gemeinsamen Aushandlungsprozess mit den lokalen Akteur*innen zu jedem Zeitpunkt der Intervention eine zentrale Stelle ein, indem die gestalterischen Ansprüche und Mittel zur Umsetzung auf die empirischen Begebenheiten *vor Ort* grundgelegt werden.

Fazit

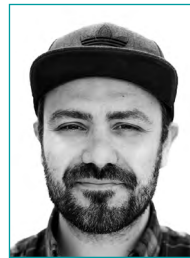
Informiert durch kritische Einwände der post- und dekolonialen Theorie haben wir in diesem Beitrag die Kooperationsbedingungen und Partizipationsmöglichkeiten von IKT-Interventionen im Globalen Süden entlang eigener Projekterfahrungen hinterfragt. Projektlogiken und Argumentationsstrukturen, die solchen Interventionen zu Grunde liegen, können oft implizit eurozentrische und reduktionistische Konnotationen mit sich führen. Wir argumentieren dafür, das eigene Projekt stets kritisch zu reflektieren und Raum zu schaffen, unterschiedliche Erwartungshaltungen zu identifizieren, eine transparente und vertrauensvolle Kommunikationsebene zu etablieren und den Verlauf wechselseitig auszuhandeln. Im Projektantrag selbst sollte der angestrebten Offenheit des Forschungsverlaufs und der Notwendigkeit eines kollaborativen und partizipativen Projekt-Designprozesses Rechnung getragen werden. Hierzu sollten verstärkt interdisziplinäre Perspektiven und Konzepte, etwa aus kultur- und sozialanthropologischer, philosophischer oder sozialwissenschaftlicher Forschung, nutzbar gemacht und für angewandte Projektarbeit berücksichtigt werden.

Unserer Auffassung nach gelingen wichtige erste Schritte auf dem Weg zu einer Dekolonialisierung von Kooperation im Rahmen von IKT-Interventionen im Globalen Süden dadurch, Widersprüchlichkeiten nebeneinander zuzulassen: durch die Vielfalt methodischer Zugänge, durch ein transparentes und respektvolles Vorgehen und durch den wertschätzenden Umgang mit und die Betonung von historisch-spezifischem, lokalem und situiertem Wissen.

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Empowering women through digital skills in Argentina

A tale of two stories

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“Promoting gender equality is smart development policy,” says the World Bank. In line with this narrative, many companies have promoted gender equality in terms of bridging the gender digital divide. In Argentina, a growing number of grassroots initiatives sponsored by corporations have emerged and provide training in digital and soft skills as well as entrepreneurship and leadership opportunities. Without denying the efforts, importance, and value of the work of these groups, this paper studies some of the contradictions inherent to the increasing power that corporations have in the discourse and practice of reducing the gender digital gap. My argument is that these projects contribute to reinforcing current economic, social, and geographical divides, to discriminating against gender non-conforming people, and to further limiting government intervention in this area.

Stärkung von Frauen durch digitale Kompetenzen in Argentinien

Eine Erzählung aus zwei Perspektiven

„Die Gleichstellung der Geschlechter zu fördern, ist kluge Entwicklungspolitik“, sagt die Weltbank. Im Einklang damit fördern viele Unternehmen die Geschlechtergleichstellung im Sinne der Überwindung der digitalen Kluft zwischen den Geschlechtern. So werden in Argentinien verschiedene Graswurzelinitiativen von Unternehmen gesponsert, die Schulungen in den Bereichen soziale und digitale Kompetenzen sowie Unternehmertum und Führung anbieten. Ohne die Bemühungen, die Bedeutung und den Wert der Arbeit dieser Gruppen aberkennen zu wollen, untersucht dieser Artikel einige der Widersprüche, die sich daraus ergeben, dass Unternehmen einen zunehmenden Einfluss auf Diskurs und Praxis der Bemühungen um eine Verringerung der geschlechtsspezifischen digitalen Spaltung haben. Meine These ist, dass diese Projekte dazu beitragen, die aktuell bestehenden wirtschaftlichen, sozialen und geografischen Spaltungen zu verstärken, nicht mit klassischen Geschlechterbildern übereinstimmende Menschen zu diskriminieren und die staatlichen Maßnahmen in diesem Bereich weiter einzuschränken.

Keywords: smart economics, women empowerment, gender equality, gender digital divide, Argentina

Introduction

The gender digital divide denotes economic, social and cultural obstacles that prevent or limit women’s access to, use of, and benefit from information and communications technology (ICT). Since the beginning of the 21st century, bridging this gap has been considered an integral element of the women’s empowerment and gender equality discourses in the international development industry.¹ It played a central role in the United Nations Information Communication Technologies Task Force in 2001, or during two phases of the World Summit on the Information Society (Geneva, 2003 and Tunis, 2005). These institutions had been continuing narratives that emerged during the United Nations (UN) Decade for Women (1975–1985) and were further pushed forward by the UN Fourth World Conference on Women in Beijing in 1995. Since then, gender equality and women’s empowerment were adopted by many multilateral and development institutions and donors, e. g. International Monetary Fund (IMF), Organization for Economic Cooperation and Development (OECD), UN, World Bank Group, or United States Agency for International Development. They have even been integrated in the UN Millennium Development Goals (No. 3) and the Sustainable Development Goals (No. 5 and 10).

Nevertheless, these multilateral institutions and donors adopted narratives that mainly stressed aspects of ‘economic well-being’ of gender equality and women’s empowerment. Moreover, the smart economics approach adopted by the World Bank reduced these goals to instrumentalist terms (see next section). In turn, this approach was mirrored in programmes and

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1 According to Gosine (2018, p.206), “[t]he ‘development industry’ is an unstable amalgam of many different actors often working in support of, sometimes against, each other’s interests: governments, international agencies like the World Bank and International Monetary Fund, non-governmental organizations of feminists [...]”.

actions adopted at the international level to foster development opportunities. Due to the association of economic development with bridging the gender digital divide, the smart economics approach has also been connected to closing this gap. For example, the OECD (2018, p. 14) states:

“The Internet, digital platforms, mobile phones, and digital financial services, offer ‘leapfrog’ opportunities for all and can help bridge the divide by giving women the possibility to earn (additional) income, increase employment opportunities, and access knowledge and general information.”

eration theology, popular education, black power, feminist and other movements engaged in struggles for more equitable, participatory, and democratic forms of social change and development”. As such, she argues (pp. 557–8) that the term came to be associated with women through the work of early feminists that articulated a vision of women’s empowerment as a transformative approach concerned with unequal power relations, women’s rights, social, economic, and political conditions and justice. O’Neil et al. (2014, p. 1) define women’s empowerment as “a process of personal and social change through which they gain power, meaningful choices and control over their lives”.

Developmental feminism emphasised inequalities in post-colonial countries due to the control of economic resources, kinship rules and women’s rights vis-à-vis tradition.

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In such a context where the economic point of view of gender equality and women’s empowerment was the focus of the international development industry, private corporations could easily join the efforts. Furthermore, at the national level, many countries adopted this framework for development. In Argentina’s case, due to the absence of policies to close the gender digital gap, grassroots organisations sponsored by big international and national corporations have been providing training in programming and soft skills, as well as mentorship, leadership, and entrepreneurship opportunities. However, due to the applied smart economics approach and the increasing power that corporations have in the discourse and practice of reducing the gender digital divide, contradictions between closing the gap and women’s empowerment and gender equality narratives have emerged.

This article analyses these tensions and the effects that the smart economics approach has produced in terms of responsibility, accountability, equality and justice. To this end, the article is divided into three sections. The following section introduces a concise recount of the history of women’s empowerment, gender equality, and smart economics. The third section focuses on Argentina and current initiatives to bridge the gender digital divide as well as the risks and problems that the smart economic approach produces. Finally, the paper closes with some considerations on the value of government intervention, integrative approaches, and systemic perspectives.

Gender equality, women’s empowerment and smart economics

Empowerment is a concept that has been advanced in the international development field since the 1970s. According to Batliawala (2007, p. 558), empowerment “was adopted by the lib-

During the 1980s and 1990s, proponents of this idea pictured women as actors in a constant process of questioning the ‘normal’ state of things by reflecting and acting to change situations identified as unjust, by altering power relations and by achieving collective self-confidence as well as a sense of capacity to act (Cornwall and Rivas 2015, p. 405). However, by the end of the 1990s, many development agencies had policies in place to foster women’s empowerment with a reductionist understanding. The emphasis moved from contesting political inequalities and social injustices to promoting economic growth and poverty reduction.

Gender equality has also found its way into the field of international development in the 1970s via the work of feminist scholars. Social scientists working in international development adopted the distinction sex-gender to differentiate between the biological aspect of a person’s identity, ‘sex’, and the malleable side of it, ‘gender’. This distinction provided second wave feminists with the tools to critically assess and press for changing power relations that had previously presented themselves as natural (Cornwall and Rivas 2015, p. 401). Patriarchy, male supremacy and sexism were denounced based on the negative consequences and harm done to women due to discrimination and injustices of a constructed inequality. Developmental feminism, one of the strands of second wave feminism, emphasised the inequalities existent in post-colonial countries due to the control of economic resources, kinship rules and women’s rights vis-à-vis tradition (Lorber 1997, pp. 12–14). However, the opposition to colonialism generated a tension between supporting human rights as Western ideas and condemning oppressive cultural traditions such as female genital mutilation that is difficult to resolve (Lorber 1997, pp. 14–15). Under such conflictive circumstances, the binary sex-gender was rapidly adopted by many international donors within a rhetoric that presented women in a categorical opposition to men and framed their relationship as

a battle for power. Deeper inquiries into the ways that patriarchy affects and oppresses both women and men alike were therefore excluded.

As this narrow heteronormative type of narrative was adopted in the development industry for gender equality and women's empowerment, contingent and embodied configurations of gender as well as gender fluidity were precluded from entering the development arena. Hierarchical and opposing relationships between men and women, between powerful and powerless, concealed other forms of discrimination and injustice. The focus was set on the material conditions, the formal economic, social and political aspects that could be modified without affecting the status quo. As Drucker (2018, p. 22) illustrates, international development agencies and donors were receptive of liberal feminism's demand for equality in the job market, because neoliberal economists pay attention to the public sphere of life and the economy, disregarding the private aspects. Due to their understanding of economic growth based on individual participation in the market economy, women's integration into the market was viewed positively. As Drucker (ibid.) holds, to foster women's integration in the job market, as well as making them more equal to men inside the family, it was assumed that a heterosexual family was the correct private arrangement. Although development practitioners have identified and been working with other family structures as well as lesbian, gay, bi and trans communities, informal participation in the labour economy and different sexualities and gender identities have not yet been sufficiently covered by the development industry.

The connection between women's empowerment, gender equality and the smart economics approach has its roots in the 1980s, when the Structural Adjustment Policies (SAPs) of the World Bank and the IMF inaugurated a period of austerity measures and market reforms (Roberts and Soederberg 2012; Chant and Sweetman 2012). In the 1990s, the evidence gathered to evaluate the impact of the SAPs, the proposals of the Consensus of Washington and the Fourth World Conference on Women in Beijing shed light on women's ability to withstand economic instability and carry on (ibid., p. 519). In this context, the World Bank introduced its report Enhancing Women's Participation in Economic Development (World Bank 1995), which formulated the smart economics approach - women as entrepreneurs. In this document, the World Bank claimed that investing in women is the right thing to do to reduce poverty and foster economic development, including enhancing productivity and efficiency (ibid., p. 22).

Currently, gender equality as part of smart economics is integral to the World Bank's strategy for ending extreme poverty and for sustainable development. As the World Bank Group states in its Gender Strategy (World Bank 2015, p. 7), "promoting gender equality is smart development policy". Although valuable critique abounds regarding the implicit understanding that gender inequalities are outside of markets and therefore, of their scope (Harcourt 2012; Roberts and Soederberg 2012), this perspective has been also increasingly adopted by other international

institutions in connection with the gender digital gap. In addition, private sector interventions in development have also been part of this framing. From public-private partnerships to corporate social responsibility, businesses have seen women's empowerment as a field to be involved in at least since the 1990s. In terms of the gender digital divide, corporations like Microsoft² or Google³ have promoted or sponsored different programmes to improve female participation in the technology labour force.

Working for women's empowerment in ICT in Argentina

In the early 2000s, the specific interest in the gender digital gap emerged. The UN Division for the Advancement of Women (DAW) presented it as follows:

If, however, the gender dimensions of ICT – in terms of access and use, capacity-building opportunities, employment and potential for empowerment – are explicitly identified and addressed, ICT can be a powerful catalyst for political and social empowerment of women, and the promotion of gender equality. (UN DAW 2005, p. 3)

Among the gender dimensions of ICT to be addressed, DAW identified gender differences, inequalities and power relations inscribed in ICT that reinforce stereotypes, such as the prejudice that 'technologies are for boys and not for girls'. At the same time, the fact that the industry is mainly male-dominated amplifies inequality between women and men (Pavez 2015). Furthermore, issues such as geographic location, socioeconomic status, occupation, age and the level of education have also been acknowledged as affecting access and use of ICT by women (Hilbert 2011; Bercovich and Scuro 2014).

Latin American governments and civil society organisations have also been part of the debate encompassing gender, ICT and development. One of the 'sites' for producing relevant declarations on gender and development is the periodic Regional Conference on Women in Latin America and the Caribbean. The conference's regional agreements have supported the production and implementation of public policies for ICT development with a gender perspective since the Consensus of Mexico in 2004 and, in particular, with the Consensus of Santo Domingo in 2013 (Pavez 2015, p. 25). Nevertheless, Latin American governments have done little in terms of specific agendas and pol-

2 In 2013, Microsoft awarded a software grant to Pro Mujer to provide access to this company's software to more than 328,000 women in Latin America (Microsoft 2013). In 2018, Microsoft Philanthropies partnered with YouthSpark, Girls Who Code and UN Development Program, among others, to provide training in digital skills (UN w/o y).

3 Google has its own programme, "Women Techmakers", providing digital and soft skills to women since 2012. They organise different types of events (training, leadership, mentorship, and entrepreneurship opportunities), award scholarships, and partner with local organisations to have a global reach (Google w/o y).

icies. In Argentina, in the absence of explicit public policies to bridge the gender divide, a growing number of grassroots initiatives emerged. Non-governmental organisations, women's associations and other types of civil society groups are taking the responsibility to provide training in digital and soft skills, as well as entrepreneurship and leadership opportunities. Some also engage in advocacy. Many of these groups are sponsored by companies such as IBM, Accenture and JP Morgan, or local corporations such as Mercado Libre and Globant.

Even though more than thirteen Argentine initiatives were identified for analysis, the focus of this article is on two cases, Ada IT and Chicas en Tecnología (Girls in Technology), which have been selected because they offer training in programming skills for different target groups, secondary school girls (Chicas en Tecnología) and girls over 18 years of age (Ada IT). I came to know these initiatives in 2015 and have studied them intensively. Sources analysed include these organisations' websites and blogs, Facebook pages and Twitter accounts, as well as media coverage (newspapers articles, interviews in media), promotional material and annual reports collected between the end of 2015 and mid-2018. Due to space limitations, only the main outcomes of the study are presented in the following.

These initiative's objective is to increase the number of girls and women in the IT labour force, bridge the gender digital divide, empower women and achieve gender equality in economic terms by providing tailored training camps to a limited number of participants. For example, Chicas en Tecnología quotes the Digital Agenda for Europe to explain one of the reasons for providing training in digital skills: "[I]n 2020 there will be 1.6 M job vacancies related to technology but only 25% of them will

programmes are considered viable options to acquire programming skills and entrepreneurship opportunities. The risk here is to further exacerbate the gap between those women that have access to their programmes and those who are left out. In Ada IT's case, there is a competitive process to obtain one of the few places offered in their courses. Chicas en Tecnología, for its part, expects that either teenage girls from the city of Buenos Aires or principals from secondary schools across the country apply to its programmes. While provincial and local governments have signed agreements with Chicas en Tecnología to adopt their programmes in a limited number of schools, responsibility for the development of these courses continues to lie in the group's hand.

While local or federal governments are accountable to their constituencies, dependency on corporations generates organisations that are accountable to their sponsors and not to the larger community they target. Bridging the gender digital gap is presented according to the interest of their sponsors - national and global corporations - looking at increasing their productivity, efficiency, and profits, while reducing their expenses due to the lower salaries paid in developing countries. In order to preserve their resources, both Chicas en Tecnología and Ada IT have to tailor their training programmes, events and mentoring and leadership opportunities to the interest of their supporters. Then again, better labour conditions for female employees and an increasingly diverse labour force are not actually producing any significant change in the status quo. To be accountable to their sponsors precludes any discussion about unequal power relations, heteronormativity, or patriarchy, thus favouring a narrow focus on entrepreneurial women and economic growth.

*Once the focus of development policy is solely
on the economic perspective, this erases any connection
to governments' responsibilities.*

be filled" (Chicas en Tecnología 2018, author's translation). Ada IT stresses that women's participation in the IT labour force is a strong element to foster economic growth: "Betting on women's economic empowerment is an efficient and safe way to ensure sustainable growth rates in developing countries" (Ada IT 2017, author's translation). In both initiatives' programmes the focus is on economic empowerment of women, although they also foster a sense of belonging and group identity among the female IT community.

Once the focus is solely on the economic perspective, however, the instrumental use of the concepts erases any connection to government's responsibility. As such, it is assumed that bridging the gender digital gap can be exclusively resolved by the market and a few civil society organisations. Because government policies are not specifically targeting women, these initiatives'

Not only economic, but also social, and geographical barriers combine in adversity against these initiatives' good intentions. Absence of specific policies for closing the gender digital divide also entails an unequal treatment and potential discrimination of those not reached by these initiatives' activities. With their scarce resources and focus on girls and young women both initiatives have limited social and geographic impact. They operate mainly in Buenos Aires, where they are located, thus discriminating unintentionally against girls and women elsewhere in the country. Moreover, in both cases, although they have presence in the main national media, knowledge about and admission to their training and mentoring opportunities requires access to a computer, Internet, and social media. In addition, the unserved population includes men and gender non-conforming people. As previously explained, the development industry's narrative

adopted a heteronormative perspective that leaves out non-binary people. For example Chicas en Tecnología's programme for a better world (Programando un Mundo Mejor) states that participation is restricted to "being a female secondary school student and applying together with a team made up of 3 girls from the same school" (Chicas en Tecnología 2018, author's translation). Ada IT explains that attendance to classes at its Coding Bootcamp of Frontend Web Development "is in a safe and reliable environment, only for women" (Ada IT 2018, author's translation). By means of constant references to women, Chicas en Tecnología's and Ada IT's rhetoric reinforces the understanding that there are only two genders, and the target of their actions is exclusively women.

pressive, and discriminatory practices is dismissed. Women's empowerment has been reduced to participation in the formal economy and to growing purchasing power, while gender equality has been adapted to a binary in which women - and only women - should achieve equal economic status to men.

Absence of reference to systemic inequalities or social, political, and economic unjust conditions in the international development discourse has made this frame a valuable tool for corporations to push forward their interests and agendas. It is in this context that big corporations' interventions in development and specifically in bridging the gender digital divide can be understood. Moreover, chronic economic instability in developing countries has meant that they have had to adopt these narratives

Civil society initiatives for promoting women's IT competences have to tailor their training programmes to the interest of their financial supporters.

Likewise, due to the focalisation of their efforts, these initiatives generate unjust outcomes. For example, a tension between sisterhood and individuality exists in these initiatives' discourses. The smart economics approach with its emphasis on women as individual entrepreneurs promotes the individualistic principle of 'every woman for herself', thus opposing the sense of community that these initiatives also seek to promote. As Ada IT's founder stated in an interview, "[a]ll [applicants] go through a selection process that includes a sequential logical skills test and an interview. In the last edition we had 400 applicants and 50 were selected" (La Nación 2018, author's translation). Although the objective of both organisations is to promote the sense of belonging to the women's IT community, such a competitive process only widens the division between successful and unfortunate applicants. Furthermore, girls and women with neither economic means, nor technological skills or educational level have fewer opportunities to access their programmes and integrate the IT labour force. This, in turn, contributes to broadening the gender digital divide and reinforces current unjust structures.

Conclusion

The smart economics approach has negatively affected the development industry's understanding of development, and more importantly, of women's empowerment and gender equality. The emphasis on productivity, efficiency, and expansion of the labour force has narrowed the meaning and value of these concepts. The strategic seizing of these ideas has produced a scenario in which the importance of critically assessing current conditions in order to identify all kinds of violent, abusive, op-

to obtain loans from international financial institutions and attract private investments. At the same time, this discourse has produced an understanding of the gender digital divide as being only about participation in the technology labour force and better salaries.

In Argentina, the lack of policies to bridge the gender digital gap has paved the way for grassroots initiatives with big corporations' support offering training in digital and soft skills, mentorship, leadership and entrepreneurship opportunities. Nevertheless, in order to be sponsored, many of these initiatives have had to accept a compromise: efforts to bridge the gender digital divide must be linked to the smart economics concept's narrow understanding of women's empowerment and gender equality.

Women's empowerment through IT competences has been reduced to participation in the formal economy.

Thus, I have argued in this article that the instrumentalist use of women's empowerment and gender equality has generated a series of contradictions inherent to corporations' increasing power in the discourse and practice of reducing the gender digital gap. The emphasis has been on four aspects: responsibility, accountability, equality, and justice. Without denying the efforts, importance, and value of initiatives like Chicas en Tecnología and Ada IT, only a shift in the framing towards a more inclusive and systemic understanding of women's empowerment and gender equality can lead to an actual reduction of the gen-

der digital gap. The government should take action, accept its responsibility, and implement policies specifically designed to tackle the divide. In addition, stakeholders must contribute to the design and implementation in order to integrate all their perspectives and values. Understanding that development, empowerment, and equality are processes, and as such never complete, is fundamental to succeeding in bridging the gender digital divide.

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Power as an ethical concern in the Global South's digital transformation

Power or empowerment?

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The digitalization of the Global South, particularly with respect to African countries, is moving at a fast pace. This can be seen in the use of information and communications technology (ICT) in different domains such as healthcare, education, industry, entertainment, as well as in the provision of e-government services, to name just a few. Such digital progress is seen as positive and often presented as such in international development discussions, for example at the World Summit on the Information Society Forum 2019 on ICTs for achieving the United Nations' Sustainable Development Goals. Despite the positives, there are also negative aspects of digitalization, which have to be addressed in the form of ethical concerns. This paper discusses these concerns by specifically exploring the aspect of power in light of the digital transformation of the Global South. The discussion advanced in this paper is informed by a review of literature.

Der ethische Aspekt der Macht in der digitalen Transformation des Globalen Südens
Macht oder Ermächtigung?

Die Digitalisierung des Globalen Südens, insbesondere in afrikanischen Ländern, schreitet zügig voran. Dies zeigt sich am Einsatz von Informations- und Kommunikationstechnik (IKT) in verschiedenen Bereichen wie im Gesundheitswesen, in der Bildung, Industrie, Unterhaltung sowie bei der Bereitstellung von E-Government-Diensten. Dieser digitale Fortschritt wird positiv gesehen und oft als solcher in internationalen Entwicklungsgesprächen präsentiert, z. B. beim WSIS-Forum 2019 über IKT zur Erreichung der Ziele für nachhaltige Entwicklung der Vereinten Nationen. Neben dem Positiven gibt es aber auch negative Aspekte der Digitalisierung, die unter ethischen Gesichtspunkten betrachtet werden müssen. Auf Basis einer Literaturanalyse werden in diesem dem Artikel solche Erwägungen am Beispiel von Macht(verhältnissen) im Zuge der digitalen Transformation des globalen Südens diskutiert.

Keywords: digitalization, power, Global South, ethical concerns, digital transformation

Introduction

The focus of this paper is on Africa's digital transformation where power as an ethical concern is discussed due to its concentration in a few actors' hands, such as US-based digital platform providers, Chinese technology investors, and national governments. Ethics is about morality and justice and this paper considers ethics from the point of view of Kant's deontology ethics (Darwell 2008) and virtue ethics (Hursthouse and Pettigrove 2018). Deontology ethics is rule or duty ethics; the expectation is that everyone conforms to the same rules and principles, therefore preventing harm, having respect for equality, rights, and justice. For instance, if it is agreed that infringement of privacy is morally wrong, it then becomes imperative for all stakeholders to respect privacy, either by putting in place policies that will ensure non-infringement of users' data or by being transparent about how data is used and managed for the benefit of all. Benefit for all ties into virtue ethics, which emphasizes virtues and moral character for the good of humanity. Therefore, applying the idea of virtue ethics means that whatever technological investments are done should not unduly lead to indebtedness or stifling of innovation for those in receipt of the investment, but rather help in propelling the recipients towards an equal footing.

Not applying these principles means that there are great risks and issues such as privacy and surveillance with *power over* Africa and its peoples being executed by the few mentioned actors. However, these actors are offering *power to* undertake positive expression and development through the use of digital platforms. To set the scene, the paper begins with an overview of the digital transformation of the Global South; this is followed by an

exploration of power. The focus on power and what it means is discussed in the section on “conceptualizing power,” after which the paper concludes.

Digital Transformation

Much has been said (ITU 2018; Wu et al. 2018; Gigler 2015) about the important role that information and communications technology (ICTs) play in development for the Global South. In this paper, the term ‘Global South’ is mainly alluding to countries in Africa. The importance of ICTs has led to a general consensus of their importance at the global level, re-

nologies such as Twitter to enable their political participation. Social media outlets also allow users to use these platforms for entertainment, communication as well as exchange and share information on a number of issues ranging from the personal to the political.

Access to and use of digital technologies is often achieved through digital platforms, mostly originating in and owned by technology corporations from the Global North, namely the United States of America (U.S.). The digital transformation in the Global South has also been enabled by technology investments from countries with better economic standing such as China, which is investing substantially in many African countries. The fact that access and use are enabled by giant technol-

Do the monopolies of (western) technology giants enable digital colonialism?

sulting in support for their use and implementation in the Global South by international agencies such as the World Bank (2018) and the International Telecommunication Union (ITU) (2018; 2010). To further reinforce the importance of ICTs in the Global South, ICT strategies and policies have been developed in several countries of the Global South, including countries like Egypt, Rwanda, Kenya, and Zambia. The use of digital technologies can be seen in many areas, including health where e-health plays an increasingly important role. For example, in South Africa, ATM-like machines have been introduced to dispense medicines for people with chronic ailments such as HIV/AIDS. The e-pharmacy ATMs are a collaboration between Right to Care’s subsidiary Right e-Pharmacy and Mach4, a German company supported by German and American development agencies GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit) and USAID (United States Agency for International Development) (Moyo 2017). Such digital technologies are believed to cut down on long waiting times, often experienced in more traditional healthcare settings. In many parts of Africa, digital education has been introduced as a way of expanding education prospects for many. Initiatives like these are spearheaded by international groups such as the Digital Opportunity Trust (DOT) working with youths, governments, and organizations, where they encourage the development of digital skills for young innovators. In addition, through initiatives such as #EdTech, DOT along with educational institutions foster the digital literacy of teachers and use local content to support digital knowledge of students (Heaphy 2017). This is also seen as a way of introducing school-attending populations to technologies at an early age. Further, digital technologies such as Twitter have enabled the public to express public opinion, pass commentary and generally endeavor to hold politicians to account. Nyabola (2018) captures this phenomenon in her observation of how the people of Kenya have been able to use digital tech-

ogy entities and foreign investors, that have their own values and terms and conditions, raises ethical concerns around the aspect of power and what this might mean for the digital transformation of the Global South. Power becomes concentrated in a few hands, as is the case in relation to the ownership of digital platforms as well as China’s substantial investment. Hence, there is a danger that a culture of dependency on the benefactors and investors of these digital technologies will arise and increase rather than decrease inequalities. Certainly, there is already a dependency on tech giants, as their products are being used on a daily basis, which intensifies the companies’ power over their users (Moore 2016). Similar to the tech giants’ power to control access, national governments can obscure access by cutting off internet services in a country, thereby exerting control over the users. The governments of Sudan, the Democratic Republic of Congo, Gabon and Zimbabwe (Fleischmann and Stefanello 2019) have done so in the past.

Assessing the concerns

The role of technology service providers and countries investing in technological developments in the Global South cannot be overemphasized. Koskinen et al. (2018) state that digital services are enabled by digital platforms mainly from the Global North, which provide opportunities in areas of employment, social networking, and innovation activities. In particular, they point to three types of digital platforms: transaction, innovation, and integration platforms. Some widely used platforms include social media from corporations such as Facebook, e-commerce from Mercado Libre, the ‘gig’ economy from Upwork including Airbnb (Koskinen et al. 2018, p. 4). Amazon, eBay, Twitter, LinkedIn and WeChat (Turner 2019), among others, are included on the list of digital platforms.

Michaels (2018) writes about the extent of the influence of proprietors of digital platforms, which can include “depriving users of due process, equal protection, privacy, and various expressive liberties (while at the same time exposing those users to various harms perpetrated by other citizen-consumers)” (p. 2). Moore (2016) argues that because of their near monopoly and global positions in the digital economy, technology giants have significant power, which extends to how civic power might be exercised. According to Moore, this is evident in the provision of communication platforms which enable citizens to communicate, inform, and exercise collective action (2016, p. 22). In essence, this is what Nyabola (2018) alludes to when she discusses how social media such as Twitter has been used by Kenyans to organize, express, and voice their political opinions. Kwet (2019) sees the influence and monopolistic position of technology giants, particularly those originating from the US, as enabling digital colonialism.

He argues that the monopolistic power of technology giants can be seen at the architecture level of the digital ecosystem through their provision of software, hardware, and network connectivity. Due to this, Kwet takes the position that because technology giants have the power to mediate the control of users’ digital experiences, that control allows technology giants to have economic domination, imperial control, and propagate global surveillance capitalism (2016, p. 2). Similarly, Thatcher et al. (2015) opine that data colonialism is becoming a reality as digital service providers promise a utopian view of a digital society. Thatcher et al. argue that there exist an asymmetrical power relation between the individuals whose actions generate individual data and those who come to own and profit from big data (2015, p. 3). Zuboff (2019) explains that data generated from human experience as free raw material is used to predict behavioral patterns and subsequently predict products useful for the present and the future, which make surveillance capitalists wealthy. This has implications for the power relations between those able to benefit from this phenomenon through provision

Although Anastácio is right to a degree in terms of how digital inclusion in ‘underdeveloped’ countries is propagated, it is important to note that it is not only diffused by Western initiatives or technology giants from the Global North, but by countries such as China, Africa’s seemingly largest investor (Busse et al. 2016). Haroz (2011) reveals that China has been a key actor in providing new technology and professional training for most of Africa. This has been in the form of machinery, electronic equipment, and high-tech products. Zoo (2018) states that between 2003 and 2013, China has invested around 7% of the \$ 100 billion dollars in the communications area in Africa.

Hence, technology giants from the U.S. and from China are in some competition and race to invest in the Global South, particularly in Africa. Where the U.S. giants such as Amazon use the same expansion strategy in Africa as in the U.S. and in Europe, Hruby (2018) states that Chinese companies such as Alibaba enter into partnerships with existing technology companies to advance their hold on such services like cloud computing, clean energy, and new digital technologies. Suffice it to say, the competition is still between technology giants who are hedging their investments for more influence and power in digital technologies in the Global South. This concentrates power in the hands of a few who come with their own terms and conditions, and their own interests and agendas.

Power as an ethical concern

In critically looking at the aspects presented above, it becomes evident that power is an aspect that needs to be explored further. First, technology giants and investors in the digital realm can have significant influence in the countries they invest in. In addition, such power is extended to national governments who in some cases have been responsible for Internet shutdowns in Africa. Thus, although the technology giants can still provide services, citizens can be deprived of these services by national gov-

Digital technologies developed by technology giants are value-laden, reflecting the values of the developers.

and investment in digital technologies on the one hand, and the users who provide the data on the other hand.

In adding to the debate around the aspect of inclusion of the poor to the digital society, Anastácio (2016) aptly captures the concerns around this by arguing that “digital inclusion in ‘underdeveloped’ countries have much to do with who controls the Internet and how the Internet is propagated by Western initiatives” (p. 7).

ernments when national governments feel the need to control their citizens’ use of social media, for example for political purposes. Digital technologies developed by technology giants are value-laden, reflecting the values of the developers.

These values can be seen in how digital technologies are designed to keep users ‘hooked’ to the digital platforms they use. For example, this is done through persuasive and motivational techniques, which ensure that users keep going back to a digital platform to network, play games or shop online (Ali et al. 2018). This, as Ali et al. (2018) illustrate, can be about ‘scarcity’; ‘temporary availability and ‘social proof’ all designed to have us-

1 Anastácio uses the term ‘underdeveloped’ to denote developing countries, which this paper covers as the Global South, particularly Africa.

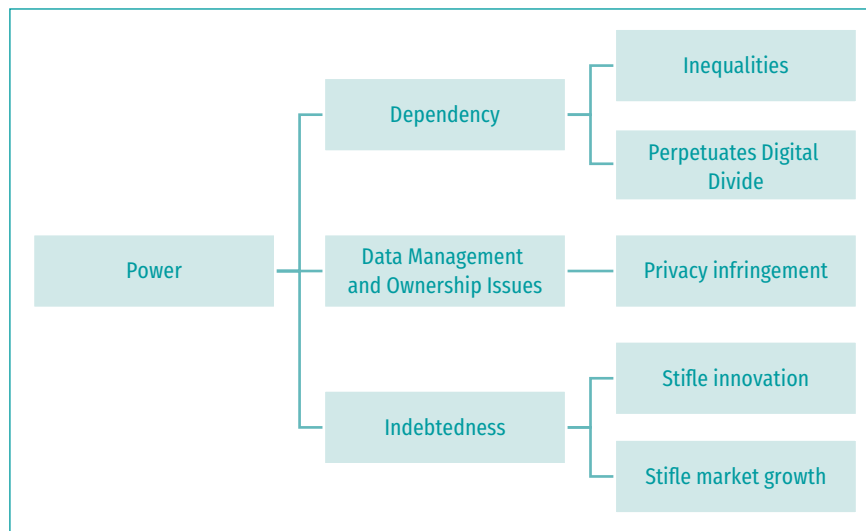


Fig. 1: Illustration of power as a main concern affecting other concerns. Source: author's own compilation

ers wanting more and therefore being drawn back to a digital space. The persuasive tactics are a form of power that digital platform proprietors hold over their users. Such power is influential in enabling dependency on the proprietors. This has implications for data control and ownership of said data because data is generally owned by the digital proprietors. The question of who owns data has implications for how that data is protected against possible privacy invasions or how it is used or misused. Consequently, this leads to inequalities and continued digital divides because, if one has no control over their data, one cannot claim to be equal to one who owns the data. As a result, power is at the helm of ethical concerns in the digital transformation of the Global South. Fundamentally, power is an overriding ethical concern with a causal effect on subsequent other ethical concerns (see figure 1).

Conceptualizing power

Technology giants and power

Borrowing from concepts of power advanced by Oxaal and Baden (1997), power can be seen in four forms; *power over*, *power to*, *power with*, and *power within*. From the context of this paper and as a result of the discussion advanced above, power as an ethical concern can be looked at from the perspective of *power over* digital users by digital platform proprietors, those who invest in digital technologies in the Global South, and national governments. The fact that digital platforms are concentrated in the hands of a few technology giants means that there is an element of *power over* those who do neither have nor own these digital platforms. Moore (2016) argues that this is especially true when the provision of digital tools is in a monopolistic or oligopolistic manner. This form of power has negative connotations due to the fact that having *power over* digital users

can be disempowering for the users themselves because of the dependency that the users develop on the digital providers. Oxaal and Baden state that this type of power is dichotomous as it involves a relationship of domination and subordination. *Power over* is also manifested when it comes to the question of who owns the data that is generated on the platforms and how this data is managed. Without adequate policies to protect users, digital proprietors will continue to have *power over* users' data.

The aspect of *power over* is not necessarily straightforward. This is because digital platforms offer services that users enjoy and benefit from. Therefore, digital providers and investors could argue that the very nature of the provision of the digital platforms and the digital invest-

ments taking place in the Global South ensure that the Global South is able to realize its digital transformation. As such, the provision of digital platforms or the investments that enable digital transformation could be argued as giving *power to*, rather than having *power over* the Global South. For instance, the provision of the digital technologies has meant that users in the Global South had *power to* communicate and to innovate. National governments had the ability to provide e-government services to their citizens. Thus, the Global South has the *power to* solve some of its problems through, for example, the ability to use mobile phones particularly in hard to reach areas or for citizens to harness the power of social media to be able to hold politicians to account.

National Governments and Power

While citizens have had the *power to* hold politicians to account as suggested in the previous section, some governments have exercised *power over* their citizens by denying them the *power to* use the offered technologies. This has been due to governments' desire to control and stifle their citizens' views, when these have been politically too critical and have used platforms like Twitter. This illustrates how national states can have *power over* their citizens and their citizens' use of digital platforms.

Given the fact that there is no Facebook or Google originating in the Global South, and given that countries from the Global South are still dependent on more 'developed' countries, the element of dependency on the benefactors perpetuates the *power over* the recipients of the digital technologies. This dependency (*power over*) drives countries like Kenya, Rwanda, and South Africa to adopt innovation strategies so that they are no longer that dependent. Kenya for instance has a 2030 vision, which has put the use of technology at the heart of its economy. Rwanda's 2020 vision has enabled a number of initiatives including a digital ambassador's program for its youth.

Although these countries are technology beacons of Africa, Swart (2011) argues that for many other countries in Africa, there is an element of “use, don’t own” due to a lack of security, poor governance, and poor internal continental relations which can stifle innovative use of technologies. A glimpse of how such stifling can manifest itself is in the introduction of tax on popular over-the-top services like voice over internet protocol (VoIP) (which includes WhatsApp, an enormously popular digital medium for many in Africa), instant messaging, and social media websites in countries like Zambia, Benin, Uganda, and Tanzania (Alliance for Affordable Internet 2018, p. 17). This has implications for users of these services who would like to use these tech-

point of view of the digital transformation of the Global South, power does not only mean domination, but that it can be shared responsibly through the promotion of *power with*, *power to* as well as *power within* digital technology users. *Power with* is about all stakeholders working towards a common purpose or a common understanding to achieve collective goals. For example, technology giants or national governments can work together with citizens towards developing robust policies around ensuring citizens privacy. That way, *power with* is exercised collectively for all and with all stakeholders.

Arguably, the discussion thus far has shown that the concept of power can be complex and contestable. On the one hand, us-

*The ability to make decisions on how users
choose to use digital technologies gives them the opportunity
to improve their lives.*

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nologies in an innovative way. The fact that they are expected to pay taxes for using these technologies may prove a prohibiting factor in as far as costs are concerned. In addition, such taxes raise questions of state surveillance, which can have personal and political implications on freedom of expression. Recently, the Zimbabwean government shut down the Internet as a measure to suppress protests over fuel hikes (BBC 2019).

Technology Investors and Power

There is a failure on the part of some countries in the Global South to foster innovation, which leaves them dependent on technology giants or investors such as China. The ‘use, don’t own’ syndrome may mean that countries will not have what is necessary to implement market policies that are favorable to foster an African Facebook, an African Google or an African Alibaba. For instance, as Chinese investment mainly takes the form of loans for infrastructure development (Davis 2018), which is then mainly done by Chinese companies, there may be little encouragement (by foreign players) for innovation at the local level. This can manifest itself in, for example, unequal power relations and a cycle of dependency on the part of the recipient of the investment. Sharkey and Okoroafo (2010) contest that Chinese investment has certain downsides such as the negative impact on local trade and commerce in addition to realizing little benefit if any for African labor. This, then, has implications for how locals are able to innovate and to what extent the technological innovation is fostered.

From the three sections covering technology giants and power; national governments and power; and technology investors and power, it can be noted that in certain instances technology giants, national governments as well as Chinese investors are in a position to exercise *power over* citizens’ ability to be able to effectively use digital technologies. However, from the

ers have the *power to* use digital technologies, but on the other hand, proprietors of digital technologies and national governments have *power over* their (users’) data, which can result in privacy violations. The aspect of having enabling *power to* means that users of digital technologies are able to use digital technologies to their advantage. For example, they are able to use VoIP digital technologies such as WhatsApp, which can bring many added advantages to their lives. The ability to make decisions on how users choose to use these digital technologies gives them the opportunity to better their lives. As such, the fact that there is an opportunity for them to decide how and whether they use the digital technologies implies that there is *power within* them. This is an important step towards achieving autonomy and empowerment. However, it is clear that much hinges on other forces for that autonomy and for that empowerment to be truly transformative.

Conclusion

This paper has explored the digital transformation of the Global South, especially with respect to African countries. Power has been seen as the dominant ethical concern with a causal effect on other concerns such as dependency, data management and ownership, privacy, digital divide, indebtedness, and innovation stifling. In view of its dominant factor, power has been conceptualized as *power over*, essentially highlighting this dominance. However, the concepts of *power with*, *power to* and *power within* illustrate that digital users do experience some level of empowerment in their use of the technologies in terms of their ability to communicate and express themselves and their views, political or otherwise. However, there is always the danger of platform owners disabling citizens’ use of the technology, or national gov-

ernments disrupting or shutting down the internet, which can deny users' access to the digital platforms. Such potentialities perpetuate *power over* digital users. As the digital transformation in the Global South gains momentum, the aspect of *power over* will therefore continue to play a role.

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Mistrust and social hierarchies as blind spots of ICT4D projects

Lessons from Togo and Rwanda

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Information and communication technologies for development (ICT4D) are seen to have great potential for boosting democratization processes all over the world by giving people access to information and thereby empowering them to demand more accountability and transparency of authorities. Based on ethnographic research in Togo and Rwanda on an SMS-based citizen monitoring and evaluation system, this article argues that focusing on access to information is too narrow a view. We show that it is crucial to take into account the respective socio-political backgrounds, such as levels of mistrust or existing social hierarchies. In this context, mobile phone usage has rather varied and ambiguous meanings here. These dynamics can pose a challenge to the successful implementation of ICT4D projects aimed at political empowerment. By addressing these often overlooked issues, we offer explanations for the gap between ICT4D assumptions and people's lifeworlds in Togo and Rwanda.

Misstrauen und soziale Hierarchien als blinde Flecken in ICT4D-Projekten

Erkenntnisse aus Togo und Ruanda

Im Bereich Informations- und Kommunikationstechnologie für Entwicklung (ICT4D) wird großes Potenzial gesehen, um weltweit Demokratisierungsprozesse voranzutreiben, indem die Menschen Zugang zu Informationen erhalten und dadurch befähigt werden, von ihren Regierungen mehr Rechenschaft und Transparenz einzufordern. Auf der Grundlage ethnographischer Untersuchungen in Togo und Ruanda zu einem SMS-basierten Bürgerbeobachtungs- und -bewertungssystem wird argumentiert, dass eine Fokussierung auf den Zugang zu Informationen zu eng ist. Wir zeigen, dass es wichtig ist, den sozio-politischen Hintergrund, wie etwa das Maß an Misstrauen und bestehende soziale Hierarchien, zu berücksichtigen. Diese Dynamiken können eine Herausforderung für die erfolgreiche Implementierung von ICT4D-Projekten mit dem Ziel der politischen Teilhabe darstellen. Die Einbeziehung

dieser oft übersehenen Aspekte ermöglicht es, die Diskrepanz zwischen den Annahmen und Zielen von ICT4D und der Lebenswelt der Menschen in Togo und Ruanda besser zu verstehen.

Keywords: *mistrust, social hierarchies, ICT4D, Togo, Rwanda*

Introduction

Soon after the introduction and spread of the mobile phone throughout the world, which was unexpectedly rapid throughout Africa (de Bruijn et al. 2009; Etzo and Collender 2010), there was much optimism about its transformative force for development of the so-called 'Global South' among entrepreneurs, development practitioners and scientists alike. Optimists hailed the potential for economic development and democratisation, a flourishing telecommunication market, increased opportunities to maintain and broaden social networks, and, very importantly, better access to information (Donner 2006; Southwood 2008). The mobile phone has proven to be a highly accessible means of communication, and is the main device for accessing the internet in Africa (Sey 2011). The field of information and communication technologies for development (ICT4D) benefits enormously from this boom and is currently intertwined in many different areas, such as e-health, e-agriculture, digital economy, as well as civic engagement and political empowerment – the area from where our own research experience arises.

One of the basic assumptions within the dominant development discourse within this latter area is that new ICT have a great potential for boosting democratisation processes all over the world, giving people access to information and thereby empowering them to demand more accountability and transparency of authorities, i. e. executive powers of the state (Bimber 2000; Bratton 2013; Hayes and Westrup 2012; Ochara and Mawela 2015). However, in light of repressive political contexts in Africa and beyond, political empowerment and democratisation

are highly problematic ideas. Moreover, mobile phone usage and perceptions appear to be rather ambiguous (de Bruijn et al. 2009; Hahn 2012; Wasserman 2011). Our own research in Togo and Rwanda revealed that, in order to get a better insight into people's possibilities to access and use information, it is crucial to take the respective socio-political background into account. Two aspects were striking and will be discussed in detail here: the reigning mistrust and the existing social hierarchies.

In both countries, the mistrust vis-à-vis local and national authorities is widespread, albeit embedded within different historical and social settings. The same can be said for social relations; it has even proven to be dangerous to trust one's own neighbour. In Rwanda, the genocide in 1994 killed over 800,000 people, which created an atmosphere of mistrust still prevalent today, as neighbours and friends were caused to kill each other. In Togo, where one family has reigned since 1967, popular discontent is 'silenced' in many ways; from intimidations and bribery to outright violence and incarceration. Our interlocutors often looked

at getting a detailed picture of people's perceptions and usage of mobile phones on the one hand, and their general relations and communication with local authorities on the other hand. We strived for a balanced representation of society, but it is important to note a slight tendency towards younger and male persons.

ICT4D and access to information

The field of ICT4D, at the intersection of practice and theory, has received much scholarly attention. Some authors embraced the boom as a major opportunity for development (Charles-Iyoha 2010; Donner 2006; Southwood 2008), whereas several others soon started to question this 'revolution' or 'leapfrogging development', taking a more critical stance (Alzouma 2005; de Bruijn et al. 2009; Etzo and Collender 2010; Hahn 2012; Mudhai et al. 2009). Expectations of the transformative potential of ICT for processes of democratisation, as well as their repercus-

Access to information alone is not decisive for people's (civic) behaviour.

over their shoulder, lowering their voices when discussing politically sensitive subjects. Concerning the second aspect of social hierarchies, our data suggests that, whereas mobile phones do offer new pathways for information exchange, this mainly happens within existing social networks. Thus, mobile phones facilitate horizontal communication, but not automatically vertical communication. Our argument in this article is that – contrary to the dominant assumption underlying many ICT4D projects – access to information alone is not decisive for people's (civic) behaviour. What is more decisive is the way in which people assess both this information and their course of action – up until now often blind spots in the design and implementation of ICT4D projects. This article is a contribution to close the gap between this ICT4D imaginary and people's lifeworlds (Jackson 2017).

The data on which this article is based was collected between 2015 and 2018 during a total of two months of ethnographic fieldwork in Rwanda in different urban and rural areas, and a total of six months in Togo in mostly urban areas. Our research took place in the framework of a development project that aimed at implementing an SMS-based citizen monitoring and evaluation system. We participated in project meetings and relied both on informal conversations while 'hanging out' and participant observations that were conducted in close contact with local research assistants. Additionally, about 110 in-depth interviews were conducted in Rwanda, and about 200 in-depth interviews, 100 mobile communication logs and 10 focus groups were conducted in Togo. Even though the empirical data from Togo is more voluminous, the comparison with Rwanda is valuable, adding depth to the discussion. The data collection aimed

at getting a detailed picture of people's perceptions and usage of mobile phones can boost citizen journalism and facilitate instant information sharing, hence boosting democratisation, but can at the same time also lead to new strategies for authoritative regimes to control information exchange (Kleine and Unwin 2009; Mutsvairo and Harris 2016).

Research projects that focus on the appropriation or 'domestication' of mobile phones show that mobile phone usage and perceptions are much more ambiguous than the positive imaginary of several large ICT4D projects (Horst and Miller 2006; Hahn and Kibora 2008). Such approaches allow for taking into account the influence of existing mistrust and social hierarchies, and the ways in which people relate to 'the political' in their everyday lives. This permits a more comprehensive image of the exchange of information in which mobile communication can be placed.

As a starting point for our argument, we want to note that even if people have access to what could be called 'public' information, they do not necessarily perceive this information as being trustworthy (Keja 2019). This stems from the complex intertwinements between social and political mistrust, both in Togo and Rwanda, which play an important role in all communication processes. Our data reveal that, in communication processes, people often try to keep their intentions to themselves and try to calculate other people's intentions, which leads to indirect and encoded ways of communication. This can be seen as part of people's strategies to cope with and make sense of their social environment. Therefore, in these areas, information itself can be characterised by its instability and unreliability. In the

discussion about access to information, the perception of information as being untrustworthy is often lacking, whereas it has a large impact on the successful implementation and durability of ICT4D projects that aim at boosting democratisation. An important element in people's evaluation of trustworthiness of information lies within the relationship between the sender and the receiver of the information.

Mobile phones and hierarchies: “We don't skip a level”

The first nuance that we want to bring to the fore in this article is an aspect which is all too often overlooked by ICT4D projects, or simply categorised as a ‘cultural issue’ to be resolved locally: the aspect of social hierarchies and power differences. This aspect, which also has some economic implications, will reveal the existence of horizontal and vertical communication that structure and determine mobile phone usage.

In the politically constrained contexts we studied, people do not believe in the anonymity of mobile communication. Especially ICT4D projects that aim for digital civic engagement should take this concern into account. As will be discussed in more detail below, in a context in which the right of expression is under pressure, these concerns are not merely theoretical. In general, people prefer face-to-face discussions about important subjects, which is not only driven by issues of anonymity, but also simply because of the high costs of telecommunication. The persons who are considered to be wealthier (superiors, chiefs, etc.), are expected to be the ones carrying most of the costs of mobile communication.

Taking an ever closer look at people's mobile communication behaviour, it becomes evident that it largely depends on their position in society and on their networks. As also noted elsewhere, the mobile phone is mostly used for “micro-coordination” (Ling

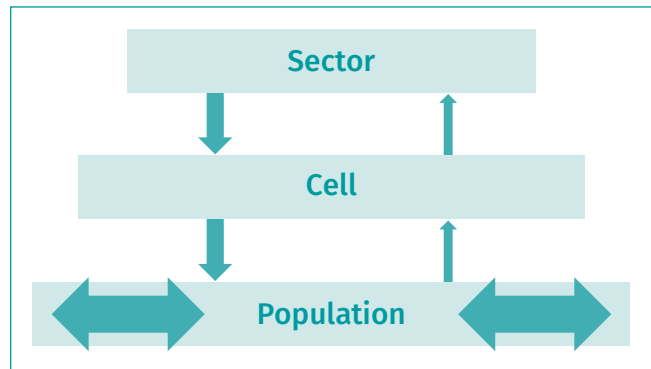


Fig. 1: Horizontal and vertical communication across hierarchies.

Source: authors' own compilation

*gudu*¹ or municipality, and it is not recommended to go directly to the next higher administrative level (i. e. the cell), let alone the sector, district or provincial level. In Togo, the image seems to be bleaker; in case they have a problem that affects the community, people may turn to the customary chief in their area, as the municipal councils suffer from a lack of legitimacy, and the prefecture is often a bridge too far for the population and has a mandate on a different level. The general image of the municipality is that “they are thieves” and hardly anything good is expected to come from those authorities.

In Rwanda, contact with a higher authority only takes place after consultation with the leader of the *umudugudu*. If the competences and responsibilities of this level are exceeded, as in some cases of inheritance, land or community-led categorisation, the local leader forwards the advice seeker to the next higher level. Even though the hierarchies discussed above are far more complex than we can spell out here, these settings can be summarised in the Rwandan expression “We don't skip a level” (Fig. 1). Skipping the lower level would be considered as indirect

Social hierarchies and power differences structure and determine mobile phone usage, leading to horizontal and vertical communication.

and Yttri 2002, p. 139), as a prelude to face-to-face encounters. People mostly communicate with their beloved ones and peers, and when it concerns professional relations, they can call their direct superiors. However, it is not common to directly call someone in a higher position. Even if someone knows the number of the chief or mayor, they would usually only reach these persons through an intermediary.

Both in Rwanda and Togo, people seem to be strongly locally oriented in their communication and problem-solving. In Rwanda, most problems are addressed at the level of the *umudu-*

criticism of that level, which is absolutely not anchored in people's habits. As a result, most people never have contact with the cell or higher levels, whose responsibilities are often unknown. Likewise, most people are not familiar with internal communication processes among the authorities. This lack of information also feeds the idea that they are not in the position to request certain information from the authorities, which is, at the same time,

¹ Meaning village, or small settlement in Kinyarwanda. It represents the smallest administrative unit.

a challenge and an opportunity for increasing their transparency and accountability.

This leads us to conclude that a differentiation has to be made between horizontal and vertical communication. People use mobile phones to communicate with their peers on the same hierarchical level in order to meet or organise something, or exchange information. Horizontal communication does not create barriers, but the situation is different for vertical communication. Top-down communication to inform citizens about meetings or activities is common, but people are not comfortable with the idea of calling ‘upwards’, which is strongly related to people’s general socio-economic and educational background, and to socio-political conditions.

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Understanding mistrust: “Everyone is lying”

Albeit in very different ways, both Togo and Rwanda have a recent past of social, political and economic instability, and everyday life has been politicised to such an extent that information exchange is often affected by concerns about direct repression or other negative consequences. Until today Togo’s population has lived under a repressive regime since 1967, in which the only power change was from father to son, whereas Rwanda has greatly suffered from a civil war that started in 1990, leading to a genocide that took place in 1994, which is still the reason for an atmosphere of mistrust throughout society. In our conversations, we noticed that people avoid discussing subjects related to politics, and, in Rwanda, this is particularly sensitive in relation to ethnicity. Under these politically constrained condi-

Rwanda has provided new possibilities for connectivity, in several domains we also notice a deepening of the already existing levels of mistrust. At first glance, our interviewees emphasised the many advantages of mobile communication: first and foremost, the new possibilities of getting informed about the well-being of one’s beloved ones, followed by the diminished need for travelling in order to transfer a message, a means to get information about a petty job or a business opportunity and a means to resolve emergencies. In certain ways, the mobile phone carries the promise of a way out of hardship (Ligtvoet 2018). Some of our interviewees emphasised only the advantages of the mobile phone. However, some interviewees stated that it also increases the social pressure of responding to certain requests. The mobile phone not only brings more freedom and new ways to escape others, but also new possibilities to control others.

Along the same line, most people point to the possibility of betraying others with the help of a mobile phone, exemplified by the exclamation “the phone has turned all of us into liars”, expressed by people from different layers of society in Togo. Especially with regard to couples, but also between parents and children, the mobile phone has an impact on the precarious balance between freedom and control. It is broadly acknowledged that the phone can lead to break-up and divorce, as not only dating has become easier for men and women, but also finding proof for extramarital relations when scrolling through the phone of one’s partner (Archambault 2009; Kenaw 2012). This indicates that the mobile phone has contributed to an increasing mistrust within intimate relationships. In addition, both in Togo and Rwanda, practically all of our interlocutors can recall a story in which they or their acquaintances were called by scammers and were betrayed.

*The mobile phone has contributed to an increasing mistrust,
as some say: “the phone has turned all of us into liars”.*

tions, people have an interest in practising self-censorship and, at times, misrepresenting information, as was evident in our interviews and observations.

In such an environment, one’s own neighbours and even one’s most intimate contacts cannot be trusted. Besides political or ethnic differences, spiritual reasons were also mentioned for keeping one’s intentions to oneself. For instance in Togo, our interlocutors take care with whom to share their travel plans, or plans for the future, as they want to avoid that someone’s jealousy may be aroused, which may then lead to encountering ‘bad luck’ on their road. These common assumptions justify referring to mistrust as an organising principle of society, which is interlinked with trust, but can be considered as being more than its mere antithesis, as expounded by Carey (2017).

Although the introduction of the mobile phone in such constrained and codified communication landscapes as in Togo and

As SIM cards are registered by name, people have concerns about matters of anonymity; not only vis-à-vis the telecommunication operators, but also the authorities. The largest operators are often equated with the government, and in both countries, people assume that their mobile communication can be easily wiretapped by state actors. In Rwanda, it has been relatively easy to retrieve the ID data on which a phone number is registered by entering a certain USSD code, which then provides information about the age, gender and district of the owner. For many reasons, people in possession of a phone do not want others to access such data. Finally, during periods of increased socio-political unrest, as has been the case in Togo in the second half of 2017, possessing a mobile phone can be outright dangerous; several people were jailed after encountering elements of the security forces which found ‘evidence’ in their phone’s photo gallery or WhatsApp images. Among others aroused by the opposition,

people massively replied to a call for a nationwide manifestation in August 2017 to demand political reforms. Soon, protesters were met with tear gas and clashes between protesters and security forces even led to several deaths between August and October 2017. Even though we are convinced that the manifestations would have never had such massive response without the mobilising force of WhatsApp, the violent reaction of the security forces has emphasised once again that revolution takes more than a mobile phone (Mutsvairo and Harris 2016).

Conclusions

From what has been presented above on people's everyday encounters and perceptions of mobile phones, it has become clear that the mobile phone can bring new forms of control and of escaping control, not only on the interpersonal level, but also on communal and municipal levels. The phone has certainly increased the intensity of information exchange, but this does not seem to contribute to more transparency. On the contrary, it seems to lead to new ways of concealing and revealing information. We argue that the mobile phone under conditions as in Rwanda and Togo instead increases mistrust within relationships, which has consequences for assessing ICT4D projects. As we have shown, the trustworthiness of information knows a high level of instability within these contexts, which seems to be based upon fragile social fabrics. From this data, it can be derived that the point of departure of ICT4D should be reconsidered, as increased access to information does not simply lead to more transparency and accountability on behalf of the authorities. From a worst case scenario perspective, if the mobile phone changes anything at all, it makes political leaders more aware of the destabilising force of new media, and instigate them to diversify their strategies of repression.

As a point of departure, we have argued for shifting the focus from technologies as such to the people who make use of these technologies. We emphasised the potential risk of what we called blind spots in the planning and implementation of ICT4D projects that might hinder or reduce their success. From our data and experience, a deeper understanding in particular of the importance of social hierarchies and mistrust for the content of information exchange is necessary for embedding any ICT4D project in a certain local context. Projects should be designed more sensitively towards power relations from the design phase onwards. We argue for a much more participatory approach in the design process of ICT4D projects so that they can be carefully constructed within the lifeworlds of the users of new technologies, as to increase the chances of durability.

These complex local constellations, in which power differences and widespread mistrust are key issues to be taken into account, demand flexibility on behalf of ICT4D practitioners and projects. Finally, as mobile communication is always embedded in local communication structures, there should be a continuous focus on creating synergies with existing channels

of communication. For ICT4D projects, which are often linked to local development, it is worth gaining better insight into such communication flows. By following the flows of connectivity between different online and offline media, such as community meetings, radio shows, Facebook pages and WhatsApp groups, ICT4D projects can centralise people who make use of these technologies. In this way, their beneficiaries can then profit more from the vast range of opportunities offered by these technologies.

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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.

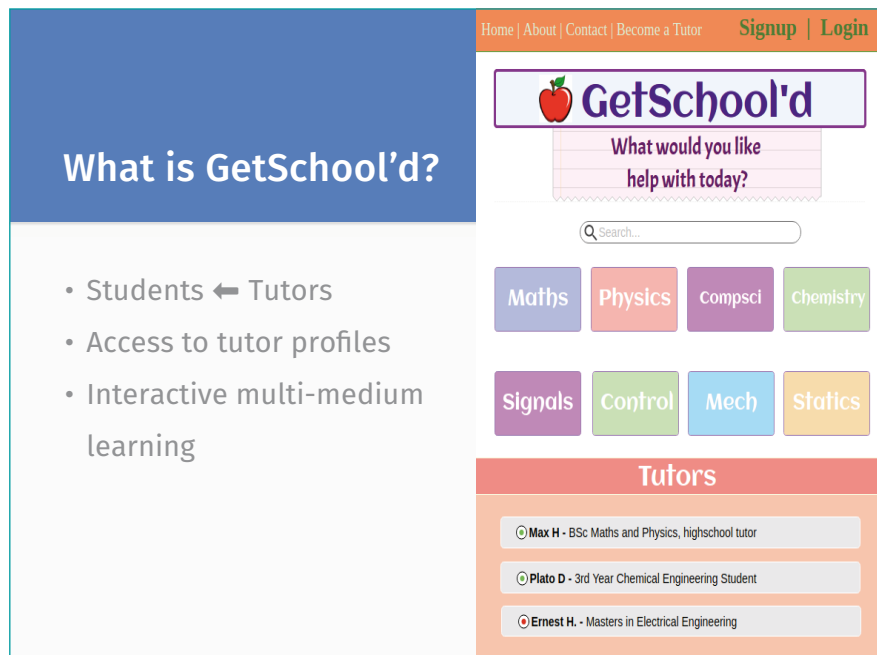


Figure 4: How the app “GetSchool’d” will work.

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-

*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.

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

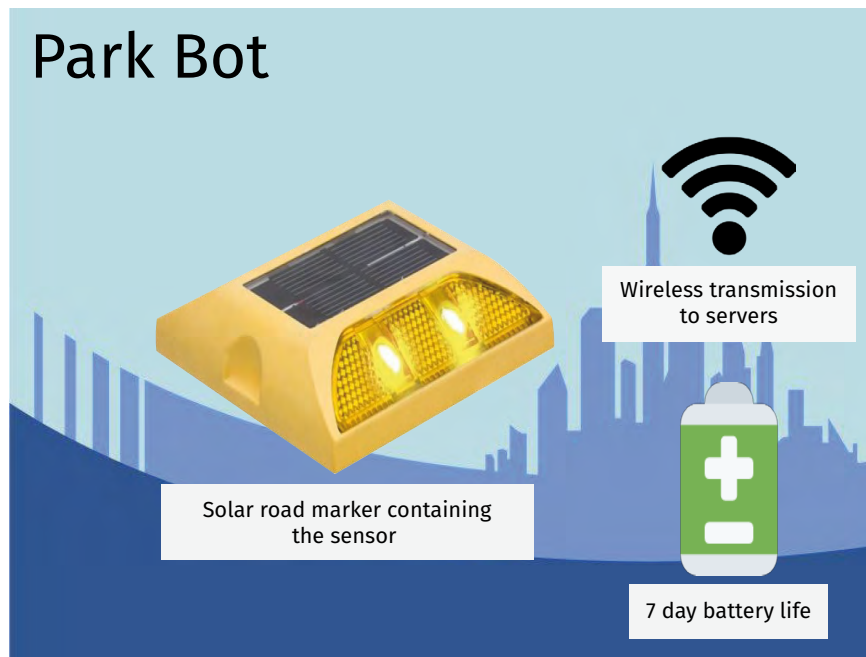


Figure 5: How the app “ParkBot” will work.

Source: Dolley et al. 2018

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-

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”.

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Images and voices from digital Africa

Part I: An interview about the film documentary “Digital Africa” with Elke Sasse



“We can help you! We can set up a traffic robot at any junction. I think that Berlin needs such a robot, too. It could regulate traffic in Berlin, the capital of new technologies.”

Therese Izay Kirongozi,
Women’s Technology, Kinshasa,
Democratic Republic of the Congo

Traffic accidents are the second most common cause of death in Africa. The imposing traffic robot that was put up at a traffic junction in Kinshasa reduced accidents by 40 %. The robot is equipped with cameras and radar systems, works with solar power and is built out of at least 50 % recycled materials.

“Social enterprises operate more long-term than NGOs. I believe the private sector can solve a lot of the problems in Africa. That’s really where my passion is.”

Henry Nyakarundi, ARED, Kigali,
Republic of Rwanda

The “mobile solar kiosk” is a solution to local power shortages and rare power access in rural areas. From a mobile charging station it expanded to a provider of free intranet, low cost WIFI and access point to public authority administration services, which are done exclusively online in Rwanda.



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<https://doi.org/10.14512/tatup.28.2.s48>

All images: © Berlin Producers Media, 2019



“DIY is the general mentality here: people don’t give up on things once they break down. 3D printing could solve local problems, by producing spare parts locally.”

Roy Ombatti, AB3D, Nairobi, Republic of Kenya

AB3D builds 3D printers out of self-printed parts and local electronic waste. Because of the usage of older western technology, spare parts are hard to get. Also, with 3D printing medical parts and tools can be obtained with reduced costs.

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For the film documentary “Digital Africa” Elke Sasse, together with her colleague Bettina Haasen, has journeyed through Kenya, Rwanda, Congo and Ghana. Elke Sasse spoke with Mathis Walter for TATuP about African implementations and usages of information and communications technology (ICT).

TATuP: *With what goal in mind did you approach your film project?*

Elke Sasse: Our idea was to let entrepreneurs and other stakeholders of African digitalization speak for themselves. We discovered a continent with glass fibre internet access and a creative start-up scene that comes up with innovative technical ideas, that could usefully be applied across the world. We found that the specific contexts of innovation with their unique local challenges give rise to creative solutions. So, we wanted to make visible African innovation in digitalization, because this perspective is rarely represented in Western media. We wanted to challenge the common western perception of Africa.

What did you find fascinating about African digitalization?

We were intrigued by the plethora of different innovations and by the creative power and strong motivation of local innovators. Their work is very problem oriented. It is about problems, that are unknown in the U.S., or in Europe. For example, one app offers education for children. If you think that this is old hat, than please consider that few people in Africa own smartphones. So, this educative app works on a simple mobile phone. “Made in and for Africa” is the label for many innovations. It means that tablets for school classes are resistant against dust, or water and can even be charged with solar energy. Such inno-

vations out of Africa can give innovative impulses to other countries in the world.

In Europe, we also see the downsides of digitalization. Have you encountered any problems with African digitalization?

One could say that in many places the problem is not one of too much, but of too little digitalization, like the lack of digital educational materials for children. As one Kenian inventor said: “If we wait now, we will lose a whole generation.” But, of course, data security is a problem. And the politics and governance of digitalization, too. Rwanda, for example, is open to innovation, but it is listed 156 out of 180 countries in Reporters without Frontiers’ freedom of press ranking.

What about cultural stereotypes in the perceptions of African digitalization?

Our film received many comments, like “that’s a totally different image of Africa!”... Well, “images of Africa” ... that’s a complicated topic. One would not speak of an “image of Europe” without doing injustice to the continent’s diversity. Many western people carry the preconception that Africa has little to offer to the rest of the world in terms of technical innovations. The innovators we met see that very differently.

Haasen, Bettina; Sasse, Elke (2018): Digital Africa. Berlin Producers, 52 min. www.arte.tv/de/videos/077470-001-A/digital-africa-1-6, available online until 31. 07. 2019.

Images and voices from digital Africa

Part II: Mobile apps for the illiterate. Knowledge production and self-learning among the Yoruba peoples in the Republic of Benin

Aimé Dafon Sègla, Université d'Abomey-Calavi, Republic of Benin (a_s_aimé@yahoo.fr)

Mobile phones and web digital tools contribute to the personal development of the individual and his or her capacity to develop initiatives e.g. for economic growth. Yet, many people cannot benefit from new technologies as digital services in sub-Saharan Africa are mostly configured in foreign languages. Illiteracy and language barriers remain a major challenge for digitalization in Africa. However, the case of Yoruba illiterates in the central Republic of Benin shows that indigenous people are innovative and create new procedural knowledge. They have developed alternative strategies to benefit from information and communications technology (ICT). Based on approximately 50 interviews with traders, peasants, art craft (wo)men, and members of convents, my ethnographic research explores how the Yoruba people of Benin utilize mobile phones in their mother tongue.

Obstacles to using mobile phones

Mobile phones and web services in sub-Saharan Africa are primarily configured in foreign languages. In post-colonial Benin French is still the official language, even though most people can only communicate in one of the country's fourty dialects. Digital services rely mostly on written words and are not designed in local dialects. Hence, illiteracy and language barriers remain a major challenge for digitalization in Africa.

Yoruba illiterates struggle with the use of information and communications technology: they are not able to buy air-time (credit) for their phones and often do not know their own mobile phone numbers. Illiterate people are disadvantaged when it comes to using services that are provided through mobile phones since they cannot make backups of names and phone numbers of their contacts.

Exclusive communications

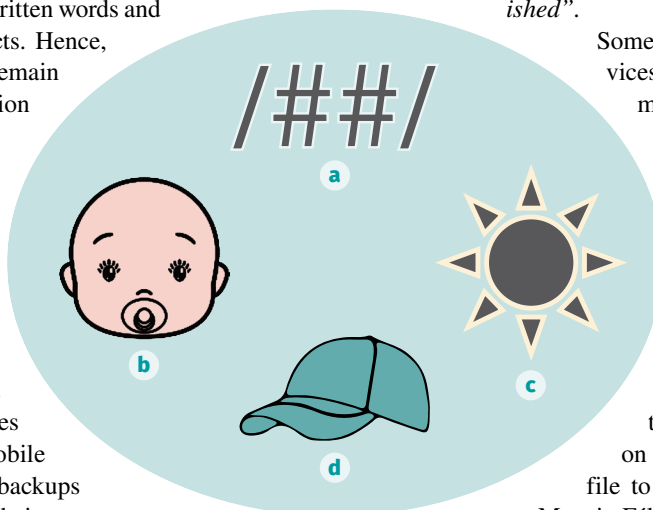
Illiterates cannot consult and read the information about their credit accounts, so they ignore their balances. They even miss important information: Since her old model Nokia that talked to her before has fallen out of use since Biaou Victorine, aged 52, an illiterate peasant living in Diho in the District of Shabè, has been unable participate in community exchanges, or receive information on governmental information campaigns. What is more, these campaigns on vital issues like reproduction, vaccination against malaria, polio or diseases like cholera are posted in French language on mobile operators' platforms.

Illiteracy and creative appropriation of mobile phones

Owolabi Josephine, a 35 years old trader from Alafia in the District of Shabè land, says: *"To know that my credits or data expired, I look if a non-turning circle appears on WhatsApp. I then know I have no more data or credits. But when it turns, it means the network is available, so my credits are not finished"*.

Some illiterate Yoruba use digital services such as WhatsApp for voice messaging, but this requires expensive data plans. Instead, many illiterate Yoruba use the alphanumeric signs and symbols available in a phone's keyboard repertoire, like @, #, ?, !, *, +, \, ^, ~ and so on. They give these signs particular meanings for their specific purposes. For example, during the backup process for data saved on the phone, they learn to name the file to be saved with a particular sign.

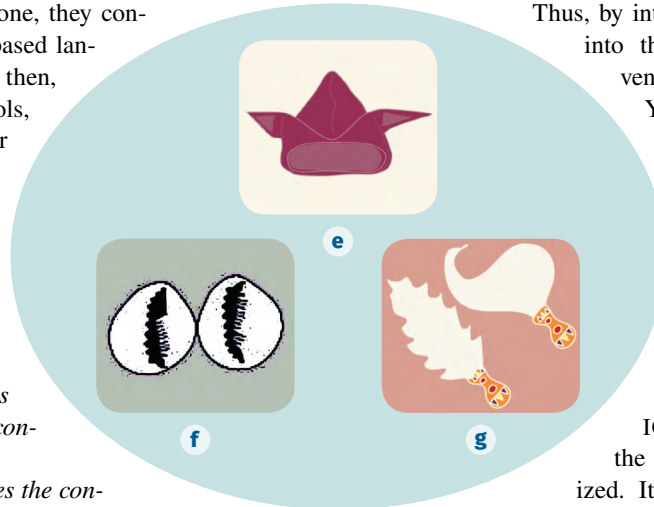
Monsia Félicienne, a 85 years old illiterate tradeswoman in Diho (Savè), states: *"Every sign [on my mobile phone's directory] carries a specific meaning and is attributed to a person. I asked to put a car to identify the phone number of my boy, because I pray he is rich one day and can buy*



a car; I have a grandson whose contact is identified by a ball, because he plays football and I wish he became like Pokou Laurent, former football star in Ivory Coast. To identify the contact of my Babalawo Priest, I put a cat's head because for me his work relates to the cat, the symbol of witchcraft ... that's how I identify my contacts”.

When illiterate Yoruba exhaust the stock of the signs on the conventional mobile phone, they continue to innovate this symbol based language by introducing numbers; then, they make use of object symbols, like flowers, plants, and other images of the fauna or of their immediate environment. The most skilled people learn to imagine and use compositions of different symbols, or of alphanumeric characters.

- a) The combination of hashtags and slashes identifies the contact of a carpenter.
- b) The image of a baby identifies the contact of a daughter in the telephone directory. It is motivated by wishing the daughter fertility.
- c) The image of the sun identifies the contact of a daughter who lives in Niamey, the capital of Niger, which is situated in a desert.
- d) The hat identifies the contact of a village chief.



mission. In traditional Yoruba culture Àrokò is used to shorten the message transfer:

- e) A chief would send his hat to fighting parties as a request for peace.
- f) Two cowrie shells facing each other indicate agreement with a course of action/decision.
- g) One king would send his flywhisk to the other in a request for solidarity and support.

Thus, by integrating Àrokò traditional codes into the further development of conventional mobile phones, illiterate Yoruba can extend their means of expression.

Localizing social media

Providing social media in sub-Saharan languages will demonstrate the fundamental role of ICT in promoting and accelerating the education of the most marginalized. It can help educate the illiterate about climate change, sustainable development, or gender equality, and provide new services and employment opportunities in the rural areas, such as online medicine, accounting and rural affairs management. Adapting ICT to local specificity is a precondition for equitable opportunities and for removing the barriers and inequalities exacerbated today by globalization.

Mobile app solutions for illiterate people

While the illiterate Yoruba of Benin cannot access any written information, they can identify symbols and record as well as listen to audio messages on their mobile phones. Ethnography clearly reveals what Africanizing ICT means. Mobile apps must operate in local languages, for example in Yoruba. The mobile app “JE M’EDUQUE”, currently under development, will provide an adaptation of the current state of technology by adding new mother tongue language support, extended use of symbols, for example from traditional cultural knowledge, translation applications, or audio signals to confirm the arrival of money transfers.

Incorporating traditional cultural knowledge into technology

When the signs, symbols, and objects on conventional phones are exhausted, those Yoruba who know about ancient rites and traditions opt for Àrokò traditional symbols for message trans-



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