

## Boom *and* Bust? Two Western Tales of Technology in Africa

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### Abstract

Current Western models of technological development in Africa exist at two extremes. On one end, Africa is perceived as a tech-barren land that relies heavily on Western imports for technological access. On the other end, recent narratives depict Africa as a continent of unprecedented and largely self-initiated technological growth. This paper analyzes the problems that arise when looking at Africa's access to technology through one of these two extremes. My findings demonstrate that these two contradicting models of technology in Africa are 1) concurrently prevalent across Western media and academia and 2) sharply inadequate in their generalization of technology and the African continent. These insights call for a more complex, multidimensional model of African technological development. To work towards such a layered model of Africa, I propose a strategy to export learning models *from* Africa *to* the West. By reversing the traditional flow of knowledge, from the West to Africa, well-rounded insights can be drawn from and about both regions. In this paper, I detail an example of this strategy's implementation and analyze its potential strengths in moving towards a more accurate narrative of Africa.

## Introduction

“It looked just like Lion King.”

When I was thirteen, my brother went to Kenya on a mission trip. Two weeks later, he came home with vibrant stories of giraffes, long dirt roads, and stacks of scanty, thin-walled shacks in the slums. These recounts were of the most memorable highlights of his travels, and they entranced me. But a large part of Kenya was missing from his stories. Modern buildings, highways, the more urban areas of the country—these were boring things we saw every day in our hometown of Los Angeles. Thus, the only stories I heard of his time in Kenya were those of the exotic and the poor.

This kind of selective, sensational storytelling is common across the Western world—particularly when it comes to the African continent. Notably in the 1990s, Western news outlets published scores of articles on extreme poverty, disease, and political corruption in Africa. This highly negative depiction of Africa became so prevalent across Western media that it was given its own name: *Afro-pessimism*, defined as the “negative evaluation of events, issues, and policy in Africa” (Bunce, Franks, and Paterson 2016). Then, in the early 2000s, a growing number of Western news outlets popularized a new narrative of Africa ascending from its dark past through astounding economic growth. An infamous example of this duality in narrative appeared in London-based newspaper *The Economist*, which named Africa a “hopeless continent” in 2000 and then published an article titled “The hopeful continent: Africa Rising” eleven years later. From hopeless to hopeful, the Western world has framed the entire continent of Africa in terms of extreme optimism or extreme pessimism for over twenty years.

These two opposing narratives are comprised of many different components, such as Africa’s economic development, average standard of living, and political stability. My research hones in on the technological development component of these narratives. As part of the hopeful and hopeless depictions of Africa as a whole, Western models of technology in Africa also exist at two extremes. On one end, Africa is perceived as a tech-barren land that relies heavily on Western imports for technological access. On the other end, Africa is depicted as a continent booming with unprecedented technological growth. My research focuses on the problems that arise when looking at Africa’s access to technology through either of these two extremes. First, I detail the prevalence of both depictions by analyzing Western news articles and academic publications that use these models as rhetorical tools. Then, I argue that both models sharply overgeneralize both technology and the African continent. Finally, I call for a more complex, multidimensional model of African technological development and propose a strategy to work towards such a model.

### I. Two Western Models of Technology in Africa

The first model of technology in Africa depicts a continent heavily reliant on Western export and aid for exposure to technology, with the average

resident having little to no technological access. I refer to this depiction as the bust model of African technological development. In the fields of economics and network society theory, many experts support this model by emphasizing the technological divide between Africa and the rest of the world. For instance, to demonstrate the prominence of this divide, Finnish economist Matti Pohjola states that “there are as many Internet users in Finland, with a population of 5 million, as there are in Sub-Saharan Africa, with a population of 643 million” (2002). A similar comparison is made by leading network society theorist Manuel Castells, a Spanish scholar, who made the now-outdated statement that there are “more telephone lines in Manhattan than in all of Africa” (Castells 1998). Such evocative comparisons imply a lack of technological development in Africa by highlighting the global divide between Africa and the West. In particular, they exhibit the prevalence of the bust model in Western scholarly dialogue about African technological access.

Many proponents of the bust model draw upon statistics such as the International Telecommunications Union’s (ITU) annual report on information and communications technology (ICT) usage across the world. Many of these statistics seem to point towards the accuracy of the bust model. For instance, the 2015 ITU *Facts and Figures* report ranks Africa as being sharply behind all other regions in almost every figure, stating that “Africa is the only region where mobile broadband penetration remains below 20%” (International Telecommunication Union 2015). This seems to provide evidence in support of the bust model. Altogether, the bust model is both widely used in Western scholarly rhetoric and evidently supported by international metrics.

In sharp contrast to the bust model, the second existing model of African technological access depicts the continent’s unprecedented technological growth and innovation. I refer to this representation as the boom model. Since 2010, prominent Western newspapers such as *The Economist*, the *BBC*, and *The Atlantic* have published articles touting incredible technological growth in Africa, with some media outlets naming recent years as Africa’s “fourth industrial revolution” (Lambert 2017; Wall 2014; Olopade 2014; *The Economist* 2015). Similar narratives have been echoed at many academic conferences. For instance, at TEDxLugano, Google brand strategist Julian Pistone and senior partner manager David Steinacker proclaimed that Africa was now the “cradle for creative innovation,” bursting with technological initiatives catalyzed by the advent of the mobile phone (2015). With prominent Western experts and news outlets proclaiming the technological prowess of Africa in this way, the boom model of Africa seems to have a strong foothold in Western society. After all, as noted by New York Times journalist Michela Wrong, “it is fashionable, these days, to be upbeat about Africa” (2015).

Like advocates of the bust model, advocates of the boom model also establish their arguments on credible metrics of technology usage. In particular, experts who use the boom model often refer to Africa’s

remarkable growth in mobile phone usage in recent years. In 2006, the International Telecommunications Union's stated that Africa was the world's fastest growing mobile market, with a remarkable annual growth rate of 65% in cell-phone usage, compared to 33% for the rest of the world (Gray 2006). This explosion in mobile phone access often serves as the groundwork for experts' use of the boom model. Thus, this optimistic rhetoric of African technological development is both popular and statistically supported in Western literature.

In summary, Western societies tend to frame African technological progress through two polarized models of technological development. These models have opposing narratives, but both are supported by statistics published by acclaimed scholars and institutions. In the next section, I detail the flaws within the bust and boom models that allow them to coexist despite their contradicting narratives.

## II. Problems with Both Models

The bust and boom models tell a single story of Africa's access to technology—Africa is either tech-deprived or tech-savvy. These descriptions are precarious not because of their factual inaccuracy, but because of their tendency to treat a small part of Africa's narrative as the continent's entire story. I argue that the sectors of technology, region, and social class are overgeneralized in the boom and bust models. Each of these sectors have multiple layers that are ignored or oversimplified by the bust and boom models.

### *Generalization in the Technology Sector*

Beginning with the technology sector, the bust and boom models rely on the trends of select technologies as evidence for the entire technological state of Africa. As discussed in Section I, ITU statistics show that mobile devices are flourishing in Africa while other forms of technology, such as the internet, are at a stagnant low. Taken as a whole, this data depicts a continent that has different layers of access for different types of technology. In contrast, the bust and boom models each tell a single, all-encompassing narrative of technology—categorizing *all* of technology as rising or falling.

For instance, proponents of the African technological boom model rely almost exclusively on mobile phone growth. One case of this is a 2014 article published by BBC News, titled *Africa's Mobile Boom Powers Innovation Economy*. This article adopts rhetoric strongly in support of the boom model and emphasizes the critical role of mobile technology in the incredible burst of African innovation in recent years. It states, "You cannot talk about Africa without talking about mobile. Most innovation involves mobile devices and wireless technology in some way or another" (Wall 2014). These statements not only assert that innovation is thriving in Africa, but that this innovation is fueled by *mobile* technology. In contrast, many advocates of the bust model

refer to non-mobile forms of technology in their rhetoric. One instance of this can be seen in the previously mentioned statement by Finnish scholar Matti Pohjola that “there are as many Internet users in Finland, with a population of 5 million, as there are in Sub-Saharan Africa, with a population of 643 million” (2002). In his publication, Pohjola branches off this statement to argue that most developing countries lack large-scale access to ICTs (2002). Here, the bust model pivots around *internet* usage in sub-Saharan Africa. Between these two publications, one side points to mobile phone growth to proclaim that Africa is booming with tech, while the other side points towards low internet usage to state that the continent is technologically underdeveloped. Thus, a problem arises not from the inaccuracy of the evidence provided by each side, but in the rhetorical exclusion of other valid forms of technology. Granted, with technology being such a broad term in itself, it’s easy to see why this trend of generalization exists. After all, enforcing a model that accounts for every form of technology would be highly impractical. Nevertheless, without a concrete definition for what forms of technology constitute a region’s technological development, experts on each side have no shared foundation upon which to debate Africa’s technological state. Such a definitional disagreement allows for sharply opposing models to erroneously coexist, since their platforms can be built upon different sets of facts. This disconnected dialogue amongst experts is a fundamental flaw in the boom and bust models, and can also be seen in the generalization of African regions.

#### *Generalization in the Regional Sector*

The second sector of generalization occurs in the lack of regional consideration in Western analyses of Africa. Urban areas have much more access to technology than rural ones, and more developed African countries often have more access than less developed countries. For instance, three African countries (Reunion 25.3%, Saint Helena 20.4%, Seychelles 23.8%) have a remarkable internet access rate that is higher than the *worldwide* access rate of 15.7%, and six other countries have similarly high access rates at or above 10%. However, twenty countries, such as Burundi and Niger, have an internet access rate of less than 1% (Fuchs & Horak 2008). Regardless, in support of the bust model, the scholars who published these statistics skip over the countries with high access rates and dive into studying the countries with low access rates. They then arrive at a general conclusion that “most African countries are excluded from the information society,” and go on to discuss solutions to mitigate the global divide between the entire African continent and the rest of the world (Fuchs & Horak 2008). As demonstrated by this case, it is often the case that a select subset of African countries are used to represent all of Africa as being digitally isolated from—or digitally flourishing with—the rest of the

world. As indicated by the numbers published by Fuchs and Horak, a sharp difference exists in technological access between different African countries. With this regional discrepancy, then, it becomes all the more inaccurate and inadequate to bucket all African countries into a single state of technological boom or bust.

#### *Generalization in the Socioeconomic Sector*

The final sector of generalization exists amongst different socioeconomic classes of Africa. On a global scale, a large technological divide exists between the rich and the poor, even in highly industrialized countries (Zickuhr & Smith 2012). According to Nigerian-born scholar Gado Alzouma, this socio-economic divide is particularly wide in Africa (2005). He stresses the importance of considering the divide between the rich and the poor in the midst of the global enthusiasm for expanding ICTs in Africa. Alzouma states:

Technological opportunities are unevenly distributed, particularly in African nations, where a small elite holds power, economic resources, and knowledge. Members of this elite are in a position to consolidate its resources and its power in a society where technical skills and access to technology are important facilitators of success...Thus, instead of being a tool for liberation, the internet can become an intimidating technology which can contribute to widening the gap between those who possess everything and those who do not.

Here, Alzouma argues that upper-class members of Africa have much greater access to technology and that technology can serve to amplify existing social class differences. With this technological divide at a local level *within* African countries, it becomes even more inadequate to group all African residents within the bust or boom model.

Altogether, the boom and bust models' generalizations of technology, region, and class expose definitional problems regarding what forms of technology constitute technological growth and whose experiences are used to measure this progress. Without a shared pivot around which to debate, proponents of each model can pick certain countries, socio-economic classes, and types of technology to support one model and denounce the other without being factually incorrect. This then allows for the coexistence of these two contradicting models, since the evidence used in support of both models have no overlap and cannot clash. Therefore, these generalizations emphasize the shortcomings of the bust and boom models in capturing the complexity and multi-dimensionality of Africa.

### III. Working Towards a Layered Narrative

In light of these problematic generalizations of technology, region, and social class, I call for a model of Africa's technological development that more adequately encapsulates the complexity and multi-dimensionality of Africa. As noted by the executive chair of AllAfrica

Global Media, “we’ve got to start from the premise that Africa is complex....There are some challenges that the continent faces. But at the same time, there are a lot of opportunities. There is a difference between the reality and the perception.” (Ba in Walstrom 2014). Western society must consider Africa as a whole, acknowledging the differences in technological access between regions and social classes in Africa.

Indeed, scholars across many disciplines have argued for such a layered model of non-Western or marginalized societies for years (Pollock 1992; Madamombe 2005; Grimshaw & Gudza 2010; Paton & Fairbairn 2010). Yet despite this widespread support, this problem of overgeneralization continues to exist to this day— as demonstrated by my findings. In fact, many Westerners are aware of this flaw of generalization in their own arguments. For instance, the *New York Times* article “‘Africa Rising’? ‘Africa Reeling’ May Be More Fitting Now”, takes a moment to state that “it is difficult to apply a sweeping narrative to all 54 countries in Africa,” but goes on to sweep Africa into a state of economic and political turmoil anyway (2016). This suggests that generalization and categorization are notoriously difficult to remediate, particularly in capturing a situation as multifaceted as the technological development of a massive continent.

This information suggests that a layered and multidimensional model for an outside, foreign civilization is difficult to achieve and even more difficult to popularize across the Western community. Thus, rather than echoing my peers in only stressing the significance of having such a model, I also propose a strategy to work towards developing a more complex perception of Africa in the long term. This strategy calls for scholars to import models from Africa into the Western world—to look at Africa as a *source* of lessons rather than a *recipient* of lessons from the West. By accruing stories of insight rather than stories of sensationalism, Western scholars can begin to consider Africa as a region just as complex and layered as Western society. To prove that such integral lessons *can* be gained from looking at Africa this way, I take my own findings about Africa and turn its applications towards the Western world. In the following section, I use my observations of the Western perceptions of technology in Africa to gain new insights about Western perceptions of technology in the United States.

## II. Importing Africa as a Model for the United States

Previously, I explained how existing models of Africa’s technological development overgeneralized technology, region, and socio-economic class. Turning these observations inwards towards America, I analyze ways in which the West similarly overlooks complexity in America. To begin with, America’s perception of its own technological development

is extremely positive. The U.S. typically views itself as having markedly high levels of technological opportunity. Upon closer look, however, this perception of nationwide technological growth is not as applicable to the entire country as it seems. To analyze this, I align the perception of technology in America with the generalizations of region and class identified in the perception of technology in Africa.

*First, does the American perspective of its own technological opportunities overgeneralize regional differences?* Yes, this seems to be the case. A prominent technological gap exists between rural and urban regions of America. According to a U.S. News & World Report article, only 55% of rural residents have access to broadband speeds, compared to 94% of urban residents (The Conversation 2016). In addition, a study conducted by the Pew Research Center showed that rural Americans were consistently over 10% less likely to own technology such as laptops, tablets, and smartphones compared to urban Americans (Perrin 2017). Also, access to growing job opportunities in technological fields are disproportionately low for rural residents due to a noticeable lack of funding, interest in computer science, and qualified teachers (McFarland 2016). Thus, rural regions seem to be pushed to the side in the overall story of America's technological opportunities.

*Second, does the American perspective of its own technological opportunities overgeneralize social class differences?* Again, this seems to be the case. Monica Anderson, an internet, science, and technology research associate at Pew Research Center, writes that lower-income Americans are more than twice as likely as those in other income groups to be classified as digitally unprepared<sup>1</sup> (2017). Even Silicon Valley—the hub of American technological innovation—contains pockets of neighborhoods struck by poverty and a lack of technological access. One case of this is East Palo Alto (EPA), a city in Silicon Valley, where nearly a fifth of its residents live below the poverty line (Kerr 2015). In my past experiences engaging with students at StreetCode Academy, EPA's only tech-focused community center, I learned that many residents lacked access to laptops and desktop computers at home. This low technological access in low-resource neighborhoods, however, is largely ignored in the overall model of America's booming technological growth.

Many other interesting insights can be drawn from importing Africa as a model for the U.S. For instance, despite a lack of home computer access, most StreetCode students had a mobile phone—similar to Africa's own uptake of mobile phones over fixed broadband connections (International Telecommunication Union 2015). In

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<sup>1</sup> As defined by the Pew Research Center's metric of digital readiness (Horrigan 2016)

addition, Gado Alzouma's warning that technology may exacerbate the gap between the rich and the poor in Africa is also applicable to the United States. In looking for voices that spoke about this kind of negative technological impact, I came across an article by Jason Bailey, the executive director of the Kentucky Center for Economic Policy. Bailey argues that technology and mechanization are putting rural areas out of work, calling for the United States to help develop rural infrastructure to better transition displaced workers (2016). When bringing Alzouma's arguments about Africa into conversation with Bailey's arguments about America, I can observe that technology might not be a force of exportable social good into rural or low-income areas—contrary to an abundance of existing literature on technology's capacity to close the income gap (Hoekman, Maskus, and Saggi 2005).

In conclusion, by importing insights from Africa into my analyses of the U.S., I find that America also generalizes itself by region and social class. In looking for scholars who echoed Alzouma's warnings with respect to America, I also give voice to Jason Bailey's uncommon assertion about American rural residents. Thus, through this strategy of importing lessons from Africa to America, I believe Western scholars can learn valuable lessons about the West *while* lifting Africa as a valuable source of insight.

## V. Final Remarks

To increase the complexity with which the West views other regions, the Western world must approach their observations with the mindset to learn rather than to sensationalize. This step can be taken by *all* Western residents in a variety of different forms. Take, for example, the story of my brother's experience in Kenya. One week ago, I tried out this mindset shift with my brother. Driving across the I-5 away from our Los Angeles home, I asked him again about his time in Kenya seven years ago. In addition to the safari and the slums, what is Kenya actually like? What do the cities look like, compared to LA? My brother responded by describing the sharp contrast he noticed between the richer cities of Kenya and the slums—often separated by only a couple minutes' drive. He told me the story of a school in Nairobi far bigger and better resourced than some of the wealthiest private schools in LA. He also chuckled at the incredible driving skills of many Kenyan residents, with cars going “seriously fast on the highway separated by around a foot from the next car.” This conversation delved into a much deeper recollection and narration of Kenya than the safari stories I had heard seven years ago. Most importantly, this reminded me of the power of the listener in directing what stories are told by the storyteller. By seeking out African stories with the intent to learn, we can all help guide the Western narrative towards a richer, more complex tale of Africa.

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