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Anyone Anywhere: Narrating African Innovation In A Global Community Of Practice

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Abstract

The last eight years have seen rapid growth in the number of technology startups emerging in urban centers around Africa, from Lagos to Nairobi to Bamako. The growth of annual investments in African startups – rising from $12 million to $560 million between 2013 and 2017 (Kazeem, 2018) – is an indication that many, including investors abroad, believe the trend in African involvement in international technology innovation practices is just beginning. Yet while these changes are promising, this dissertation encourages critical reflection on them and asks: To what extent are Africans really able to fully participate in the production of the new technologies shaping their experiences of the modern information economy? To attempt to answer this, from 2013 to 2016 I conducted an ethnography of one of the centers of innovation in Africa that has received the most media attention, a "technology hub" based in Nairobi, Kenya called the iHub. I spent a year as a participant observer on the iHub's communications team, conducted numerous focus groups, site visits to other tech hubs, participated in dozens of events and interviewed over 80 members of Nairobi's tech community. With this data, I built an analytical lens that brings a critical communications perspective to communities of practice theory. By integrating narrative theory, this lens draws attention to the potential for conflict and hierarchies of legitimacy in transnational communities built around shared practices. In the pages that follow, I argue that the actors around the iHub are engaged in a Global Community of Technology Innovators in which their participation, and the community's larger narratives are mutually constructed. One such narrative about how "Anyone Anywhere" in the world can become a successful technology entrepreneur helped attract Kenyan entrepreneurs, while others restricted their ability to be taken serious, often leading to their being pigeonholed as "social entrepreneurship". By the end of 2016, the discrepancy between narratives and lived experiences led many to reject certain global practices – like the pressure on startups to scale globally – and focus instead on building a Kenyan community in which they had greater legitimacy and power to construct narratives and shape future practices.

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Eleanor R Marchant

DEDICATION

To my father

For always being there…even when you're not

ACKNOWLEDGMENT

I most needed them. Thank you for giving me a beautiful place to write, for getting me outside, for challenging me, and always keeping me tethered to the "real world".

ABSTRACT

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Eleanor R Marchant

John L. Jackson Jr.

The last eight years have seen rapid growth in the number of technology startups emerging in urban centers around Africa, from Lagos to Nairobi to Bamako. The growth of annual investments in African startups – rising from $12 million to $560 million between 2013 and 2017 (Kazeem, 2018) – is an indication that many, including investors abroad, believe the trend in African involvement in international technology innovation practices is just beginning. Yet while these changes are promising, this dissertation encourages critical reflection on them and asks: To what extent are Africans really able to fully participate in the production of the new technologies shaping their experiences of the modern information economy? To attempt to answer this, from 2013 to 2016 I conducted an ethnography of one of the centers of innovation in Africa that has received the most media attention, a "technology hub" based in Nairobi, Kenya called the iHub. I spent a year as a participant observer on the iHub's communications team, conducted numerous focus groups, site visits to other tech hubs, participated in dozens of events and interviewed over 80 members of Nairobi's tech community. With this data, I built an analytical lens that brings a critical communications perspective to communities of practice theory. By integrating narrative theory, this lens draws attention to the potential for conflict and hierarchies of legitimacy in transnational communities built around shared practices. In the pages that follow, I argue that the actors around the iHub are engaged in a Global Community of Technology Innovators in which their participation, and the community's larger narratives are mutually constructed. One such narrative about how "Anyone Anywhere" in the world can become a successful technology entrepreneur helped attract Kenyan entrepreneurs, while others restricted their ability to be taken serious, often leading to their being pigeonholed as "social entrepreneurship". By the end of 2016, the discrepancy between narratives and lived experiences led many to reject certain global practices – like the pressure on startups to scale globally – and focus instead on building a

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shape future practices.

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INTRODUCTION

It's September 1st, 2016, and I am in a small Kenyan café in Nairobi called Artcaffe, situated in an upscale shopping mall interviewing Gathii,[1] a Kenyan entrepreneur. Near the end of our chat, I notice I have a WhatsApp message from Njeri, a friend, and one of the employees of a technology hub and coworking space called the iHub, which sits at the top of a caramel colored stucco and green glass office building called the Bishop Magua Centre down the road. "I heard Mark Zuckerberg will be at Gearbox today," she writes. "Let's see how that pans out". Gearbox grew out of the iHub and is also a coworking space in the Bishop Magua Centre, but unlike the iHub, it is geared towards hardware engineers and equipped with 3D printers, jigsaws, and circuit board printers. "I would rather come for you than Mark, if you're saying that just to get me to come in 😊," I write back. Earlier that morning I'd read that Zuckerberg was in Lagos, Nigeria, meeting with entrepreneurs there and checking out Andela, a training center for African developers and the first major recipient of an investment from the Chan Zuckerberg Initiative. Just two months prior they'd led a Series B round of funding in Andela on the order of $24 million. Returning to my interview, I ask Gathii what he thinks of Zuckerberg visiting Africa.

"My frustration is this," he says, "Zuckerberg will invest in Stanford and public institutions in the US to strengthen them. But when he comes here he says, 'forget institutions, I'll fund Andela instead.'"

After we wrap up, I make my way over to the iHub. To get there, I hop into a crowded matatu (one of Nairobi's smaller and somewhat more chaotic buses), pay 30Ksh (the equivalent of 30 US cents) and we make our way through Ngong Road's ample traffic heading towards Nairobi's city center. Before it gets there, I hop out at another shopping mall, this one called Prestige, though it is slightly older and somewhat less prestigious than the one I have come from. I continue walking along the road past outdoor market vendors selling old suitcases and shoes or tomatoes and red onions. There's no stop light so when I see a rare lull in the traffic I dart across the road. Continuing along, I pass more vendors selling hand painted flower pots and past a bright Hulk-green billboard advertising the telecommunications giant Safaricom's latest feature. In about five minutes, I arrive at the Bishop Magua Centre. It's a caramel-colored walls are surrounded by a few pale blue painted balconies, and small signs advertising the companies inside. The signs for the iHub and GSMA, the international telecommunications association, are the most noticeable. At the entrance, a friendly female security guard smiles and leisurely looks through my purse. A laptop, a mobile, a wallet, nothing she hasn't seen before. She waves me in and I walk up the terracotta tile ramp turning past Akirachix, a small startup that trains women and girls in how to code, on my left, and the frosted glass office of MFarm, a similarly small startup that developed a program to get market price information to farmers, on my right. I can smell the coffee brewing from Pete's down the hall, but I make my way up two flights of stairs instead. The stairs are narrow, surrounded by white walls and sporting a recently repainted pale blue railing matching the outdoor balconies. At the top of the second flight, I make my way past a small emergency exit sign that reads "*iHub_ IN CASE OF FIRE: Please leave the building before posting to social media" and into a bright room labeled 'iHub Research". It is in fact, the office of most of the iHub's staff, not just the research division, but the sign has not been updated. Inside the room, shiny sand colored square tiles cover half the floor, while a carpet covers the other; white walls and a full wall of windows trimmed in green frame the space. I see Njeri sitting in a bright blue dress on a black mesh office chair in front of her laptop at her usual table closest to one of the windows. I walk past the white boards covered in code to sit next to her as I often

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[1] This name and others are pseudonyms to protect the anonymity of those in this study.

do. Her colleague Franklin is sitting next to her, and we start chatting about a recent project Franklin has just wrapped up teaching data science skills to entrepreneurs and university students. Suddenly, Lilly, one of the iHub team leads walks into the room and quite loudly – more loudly than I had become accustomed to hearing her speak in fact – asks everyone to refrain from leaving the building for lunch.

"There will be an opportunity for a photo with Mark in Gearbox shortly," she adds without further explanation, leaving the room quickly.

Franklin turns to us and asks, "Mark who?" There are, in fact, at least three Marks that I know who work in Bishop Magua at any one time.

"Zuckerberg," Njeri and I say in unison, smiling.

"Unless he's giving us money, this is a waste of time," Franklin retorts.

Coming back into the room just as hurriedly as she left it, Lilly adds, "and please don't Tweet about this. Otherwise there will be too many people and the picture won't happen."

Almost every day I spend in the iHub I see one tour or another making its way through the building. Representatives from the World Bank or from the Swedish government, or from Google, or TED, or UNESCO, and now, it seems, the founder of Facebook. There are so many tours that Njeri once complained to me that it felt like they worked in a "zoo". The three of us continue our work in the office for a while. So much time passes in fact that Franklin speculates the visit has all been a hoax designed so Lilly could have the popular lunch café around the corner all to herself. A few minutes later Lilly comes back and waves us through the door into a narrow hallway.

Njeri sighs and doesn't move from her chair. "I have too much to do. Tell me if he's really as short as he looks."

Franklin and I decide to follow. "I hope this is worth leaving my chicken for," he says.

For about 15 minutes, we wait in a small hallway while the crowd grows in size. Eventually we're waved into the Gearbox office. The room fills with people that I think work at Gearbox; we're ushered in to join them. But there's no Zuckerberg. And again, more waiting. Quite a bit more, in fact. I start to take pictures with my iPhone of the people waiting. Some look excited, some bored. Over time the crowd swells. 10 minutes. 20 minutes. 30 minutes. 20 people. 40 people. 70 people. All just standing around, missing work, missing lunch, for a photograph with the billionaire who built Facebook. By this time, another iHub employee that I work with, Jimiyu, comes to join us. Like Lilly, he is a team lead.

"This is real power," he observes, "Making so many people wait around like this!"

Suddenly, a woman with an American accent walks in. "Thank you for waiting. We'd like you to squeeze in more so we can get you all in the photograph. ...and can some of you kneel down here in front?" She disappears back through the door.

Franklin leans over and whispered, "I would never kneel! He's not Jesus! It feels too much like we're supposed to worship him." Instead we decide to keep to the back of the crowd. We stand precariously on swivel chairs so we can still see what's going on.

"You know how you know who has the real power at the iHub?" Jimiyu asks. "It's not me! And it's not anyone waiting in this room, I can tell you that!"

10 more minutes. 15.

"You know, I would leave if it didn't feel like there was so much social pressure to stay," Franklin moans. "I thought this was going to be more than just standing around."

The woman with the American accent returns. "I know it's hard," she says. "But you have to keep your cell phones down when he comes in."

And then he appears. A smattering of cell phones come out to take pictures despite the instructions. He looks almost exactly like I expect. His hair has the same blond curls you see in pictures, his face the same half smile turned up occasionally in a sort of excitable grin, and yes, he is as short as he seems in photos. He's wearing a grey short sleeve t-shirt and jeans, and behind him come at least 20 people, some unfamiliar faces I assume are his Facebook team, some

familiar faces, members of the iHub and Gearbox management teams and at least six photographers. While all the seemingly important people who had followed him in stand on the sidelines near the door, he comes over to the crowded semi-circle of everyone else waiting to meet him, smiles, shakes a few hands, turns around to pose for a few photographs, and then, just as quickly, he's gone and we shuffle out of the Gearbox office with the rest of the crowd.
    "Definitely not worth missing my chicken for," Franklin whispers.
                                              ~

The Story of a Visit

Barely five minutes after Franklin and I left the Gearbox office, Mark Zuckerberg (or more likely someone from his team) posted the following message about his visit to the Bishop Magua Centre to his more than 100 million Facebook followers.

> Just landed in Nairobi! I'm here to meet with entrepreneurs and developers, and to learn about mobile money – where Kenya is the world leader.
>
> I'm starting at a place called iHub, where entrepreneurs can build and prototype their ideas… [like] Two of the engineers I met – Peter and Harrison…It's inspiring to see how engineers here are using mobile money to build businesses and help their community.

Along with this text, he included a picture of himself surrounded by some of the people who worked in the building – one of them was Harrison, an entrepreneurs working on pay-as-you-go energy project – all standing in front of a table with two mac laptops and some hardware. All told, Zuckerberg spent less than 24 hours in Kenya during his surprise visit. Along with Bishop Magua, he visited Mama Oliech, a restaurant known for its Luo style fried fish, and Lake Naivasha, a preserve in the Rift Valley known for its wildlife, before heading back to Nigeria.
    The story Mark Zuckerberg told his global audience in his Facebook post about this particular visit was certainly *based* in reality. He did indeed visit the iHub and did indeed meet some of the entrepreneurs working there who had built new technologies around Kenya's infamous mobile money platform and Safaricom cash-cow, M-Pesa. And Kenya had indeed become a "world leader" in mobile money. Safaricom launched M-Pesa back in 2007, two years before the American startup Venmo launched its own peer-to-peer mobile payment platform and a full seven years before Apple launched ApplePay. Domestically, M-Pesa had become an enormous success. By 2011, 72 percent of Kenyans living outside of Nairobi and below the poverty line reportedly used M-Pesa (McKay & Mazer, 2014), and by 2013, close to 50 percent of the country's GDP reportedly "flowed through" the platform (Runde, 2015). It was celebrated by international and domestic media alike as a "success story of digital financial inclusion" (Ndung'u, 2017) that had "fundamentally altered the landscape of financial services in Kenya" (McKay & Mazer, 2014) and that was transforming Kenya into an "innovation and technology hub" (Runde, 2015). And indeed, since about 2010, Kenyans had begun building startups that made use of the M-Pesa platform allowing them to use their mobiles to access loans and to pay a variety of different vendors, from grocery stores to solar power providers to the pay-as-you-go cooking gas entrepreneurs that Zuckerberg met. Over the following seven years, Africa's startup scene would grow, attracting an increasing number of international investors. While the total amount invested in startups across Africa was just $12 million in 2013 (Jackson, 2014), that number had expanded to $560 million invested in 124 companies by 2017 (Kazeem, 2018), a sizeable increase though still just 0.007% of the $84 billion invested in American startups in 2017 (Richter, 2018). It is not entirely surprising that Zuckerberg would choose to stop in Kenya (and Nigeria the day before) for his first ever visit to Africa. Of the $560 million invested in 2017,

over three quarters of that reportedly went to startups in just South Africa, Kenya, and Nigeria. In the rise of what began to be described as a "Africa's tech movement" (Bright & Hruby, 2015), Kenya frequently came at or near the top of the list of countries to watch. Since 2010, Kenya has appeared on numerous lists of new "startup hubs" to watch (Pullen, 2013; Shadbolt, 2014), and in 2012, *The Guardian* declared that "if there is such a thing as an African version of California's Silicon Valley, the country that is arguably leading the race to the future is Kenya" (D. Smith, 2012).

Nor is it entirely surprising that in visiting Kenya, Zuckerberg chose to stop at the iHub. A self-described "open space for technologists, investors, tech companies and hackers in Nairobi," (iHub, 2011) the iHub has been many things since it first opened in 2010 – a community center for Kenyan techies, a coworking space for entrepreneurs, and a gateway for foreigners interested in learning more about the growth of technology startups in Kenya. It has been variously described as "Kenya's unofficial tech headquarters" (Munford, 2013a), the "epicenter of Kenya's burgeoning tech scene" (Court, 2015), and the "most successful tech hub in Africa" (Shapshak, Toby, 2016). It has been credited with no less than giving rise to "Africa's innovation center movement, inspiring the upsurge in tech hubs across the continent" (Campbell, 2015). It was indeed among the first such physical spaces for African techies and innovators to meet that was built in Africa. Six years later, when Zuckerberg visited, the number of African tech hubs had exploded, with a total of 314 across the continent (Du Boucher, 2016). In the years after the iHub opened, the building that housed it, the Bishop Magua Centre, began to embody its newfound identity as a physical tech hub attracting technology companies that opened their own offices within its walls – like Akirachix, MFarm, and GSMA, mentioned in the story above – some companies that got their start at the iHub, others that wanted to be close to the circulation of people, ideas, and money that it attracted, and others still that wanted to compete with it, building rival coworking spaces. In visiting the Bishop Magua Centre and highlighting the iHub in the story he told about the visit, Zuckerberg was following in a long line of other foreigners – investors, entrepreneurs, journalists, and techies, myself included – who all made the iHub their first port of call when coming to check out Nairobi's tech scene.

Missing from the Story

But as with many stories intended for the public eye, the one Zuckerberg (or his team) chose (or was able) to tell about that day in September was not the *whole* story. While he did visit the iHub, *Gearbox* is where hardware entrepreneurs like the ones he was photographed with "can build and prototype their ideas"; the iHub is more focused on supporting software entrepreneurs and has no physical prototyping facilities for hardware itself. And while he did meet with entrepreneurs who were using M-Pesa, their encounters were as brief and fleeting as one might expect from a day that also included a visit to a game park in another part of the country. In a conversation I had later with Harrison, the entrepreneur photographed with Zuckerberg, and his colleague, Peter, they described how manufactured and superficial the meeting had felt.

> Harrison: The interaction itself? Very short. 3 minutes. 'He's gonna come round. Position your stuff here. Face this way. Shake hands this way. Explain it this way'.
>
> Peter: He had a whole communications team.
>
> Harrison: 'We want some kind of smiling picture. Try to make him laugh. We'll get a picture'. …It's tough because everyone was showing him 6 different things at the same time and I think he was kind of jetlagged too.

Harrison and Peter also lamented Zuckerberg's mischaracterization of their business model and their level of success, a not unsurprising byproduct of the brevity of their interaction. "The reality is," Harrison explained, "we have very few customers. We had *one* at the time of his visit!" More worryingly in their eyes was the post's characterization of them as somehow representative of Kenya's startup scene. While they were entrepreneurs working in Nairobi, they were, in fact, *not Kenyan*. Neither one is ethnically Caucasian, but Peter is American and Harrison is British.

> Part of it is, we're happy to take a back seat because we're not Kenyans.
> …We said [to the Gearbox people who coordinated the meeting] 'don't you want to showcase a Kenyan team?' But they thought because we're the only really active hardware company out of Gearbox, that we were the best option.

It clearly worried them that they'd been put in the center of a spotlight intended to highlight *African* innovators. "Innovation in Kenya," Peter added, "should be about the Kenyan innovators in the space not about us."

The Techno Evangelist

Telling a *story* can often go hand in hand with twisting or stretching the truth. The contemporary information-flooded "attention economy" (Davenport & Beck, 2001) – aggravated by social media companies like the one that Zuckerberg represents – creates pressures to tell stories that will shock and awe with "clickbaity" attention-grabbing titles, that retain tenuous relationships with the truth. At the same time, the ability to disseminate stories online has made audiences simultaneously broader and more global, *and* more siloed (Barberá, Jost, Nagler, Tucker, & Bonneau, 2015; Jamieson & Cappella, 2008), while also making the attention they acquire more fleeting and precarious (J. Anderson & Rainie, 2012; Batchelor, 2012; Goodwin, Griffin, Lyons, McCreanor, & Moewaka Barnes, 2016). In such an environment, the pressures on our modern storytelling can be enormous. These can be compounded further for those working to build new technologies, a sector notorious for its (ironically) long-term obsession with the "new new" thing (Lewis, 1999) and its worryingly short attention span. 3D printing, facial recognition, algorithmic customization, automation, virtual reality, and on and on. New companies and new products emerge just as quickly as the merely new-ish seem to disappear. While it may briefly surprise us when technologies and their startups in Silicon Valley, like Vine, Jawbone, and Theranos, suddenly collapsed as quickly as they had risen, by the next day investors are already looking elsewhere. Even with an effective novel product and a sustainable business model it can be difficult to get both attention and investment if an entrepreneur wakes up to find their product is suddenly off-trend.

Audiences that pay attention to tech news have expanded across the globe. Entrepreneurs and developers in Hong Kong, Berlin, and Nairobi all read American outlets like *Tech Crunch* and *Wired* online. Programmers in London and Bangalore alike know about the latest developments with Oculus Rift (Deahl, 2018) or the latest barrier to Uber's global expansion; female entrepreneurs in Nairobi and elsewhere are well aware of Ellen Pao and Silicon Valley's gender discrimination problem (Bennett, 2017); and even those who only pay attention to the tech world in passing are likely to have heard about the explosion of Facebook's new satellite along with the SpaceX rocket that was meant to carry it beyond our atmosphere in the *New York Times* or other generalist news outlets.

But in this information environment, not all storytellers are created equal. While most Kenyan techies I know read *Tech Crunch*, few Americans I know read the popular Kenyan tech blogs, Kachwanya or TechWeez, unless they already have a particular interest in Kenyan technology news. Similarly, before Zuckerberg's visit, Peter and Harrison had been working hard

to fundraise getting their story out, but had struggled to get the attention of the limited number of investors already paying attention to Kenya. After his visit, they were overrun. "All of a sudden," Peter explained, "we were under attack! I got like 60 questions on how our system works coming into the website immediately." Just by mentioning them briefly in his Facebook post, omitting even the company's name, Harrison and Peter were immediately put into the global public eye, reaching an audience that they never could have reached on their own. In our conversations, Peter sometimes characterized Zuckerberg cynically as a "tech rock star". "I found it really bizarre," he explained. "I know he's a tech rock star. But it's a weird thing, why does that mean so much?" In many ways, a "rock star" is a fitting analogic description for a man who attracts groupies and 'fan-geeks' wherever he goes. But an even more accurate description of Zuckerberg and the handful of those like him at the very peak of the global culture around tech may be that of techno or innovation evangelists (Irani, 2015), or a techno-visionary storyteller. Like a rock star, Zuckerberg may have gained prominences for his particular talent at his given practice, but he has subsequently used it to sell a very specific message and a vision of the future of the world, an ideological objective that rockstar musicians are less inclined to have. In Facebook's case, that vision is of a "global community" built on the back of Facebook's social media platform. "Our greatest opportunities," he wrote in Facebook's new manifesto published on February 16, 2017, "are now global. …Progress now requires humanity coming together not just as cities or nations, but as a global community" (Zuckerberg, 2017). He goes on to lay out the ways in which Facebook can enable greater interconnectedness while wondering in bewilderment at the "movements" around the world pushing for "withdrawing from global connection." Like their counterparts in religious communities, evangelists and techno-visionary storytellers in technology communities seek to inspire, persuade, and ultimately convert their audiences into customers for their products, into new innovators and engineers, and fundamentally into believers of the techno-utopian vision they are selling. In many ways, the belief in the ability of new technologies to bring about positive change in the world is as ingrained in this culture as the belief in God is in the culture of Christianity. No wonder that it took Facebook so long to accept and respond to reports that its platform was being used for ill, to disseminate hate speech, violent content, and fake news, encouraging crime and division rather than just "peace and understanding". In order to do anything about such failures, it first had to admit that its technology could be used to bring about more than just "positive change".

In her excellent book on the culture of technology innovation in Peru, *Networked Peripheries*, Anita Say Chan writes that "even while it might now be recognized that IT engagements are no longer limited to Western IT experts and enthusiasts, it remains a relatively narrow set of voices that speak for an IT-enmeshed contemporary" (Chan 2014, p. 5). Even while innovators like Peter and Harrison and their Kenyan counterparts work on projects far removed from Silicon Valley in response to problems more common in Kenya than the Western metropoles, an elite few, like Zuckerberg or Elon Musk or Steve Jobs, have historically captured the lion's share of the world's imaginings as forecasters of "the world's common digital future" (Chan 2014, p.5). Stories about how humanity's future is on Mars or how the iPhone is going to revolutionize the way we communicate, or about a global village that only needs more engagement from everyone, purport to see the future at a global scale, but still convey a particularly Amero-centric view of the world. And while there may be more platforms for more voices from more places today than there were four years ago when Say Chan published her book, the loudest, most attention-grabbing voices still belong to this set of "highly visible digital enthusiasts" (Chan, 2014, p.5), the techno-visionary storytellers.

In many ways, and as I will make the case in this dissertation, the art of storytelling is at the center of how technology innovation is currently being practiced in the modern information economy. The venture capital dominated nature of the Silicon Valley approach to building technology means that in addition to having an exceptional product and a solid business model, innovators need to get the attention of both prospective customers *and* prospective investors in

order to make it. Book after book, article after article, TED talk after TED talk have been produced to help entrepreneurs improve their storytelling along with their chances of success and of "changing the world" (e.g. De Reu, 2017; Evans & Handley, 2015; A. Smith, 2018). "Tension and struggle, heroes and villains," Carmine Gallo writes in *Forbes*, "are the stuff of great movies. As it turns out, they are also key to selling one's ideas" (Gallo, 2015). Steve Jobs, the archetypal tech evangelist praised by that same outlet as "The World's Greatest Business Storyteller", may hold some responsibility for the storied way in which Silicon Valley innovation has evolved. Legend has it, he once said to an employee that the "most powerful person in the world is the storyteller," because the storyteller sets "the vision, values and agenda of an entire generation" (Yarow, 2013), and this quote has fittingly itself attained a sort of mythological status as it spread online. Academics too have begun exploring the role that telling a good story can play in the work of entrepreneurs (Henry, Dana, & Murphy, 2018; Lurtz & Kreutzer, 2014; O'Connor, 2002), and have made similar arguments (likely to smaller audiences) about how influential stories can be in shaping communities and their core values and practices (Humphreys, 2000; Rappaport, 2000). This dissertation is, in part, an attempt to more fully theorize about the role such stories, as well as the larger community narratives that they help to construct, in the changing practices of technology innovation in a global setting.

The dexterity with which Jobs and others craft compelling stories around their products, combined with the positions they hold in the popular imagination of our tech-centric modernity, can blind audiences to the "myth of techno-inevitability" (Srinivasan, 2017). The future of humanity as Jobs and Zuckerberg and Musk tell it is a happy one *if and only if* humanity is willing to embrace the revolutionizing power of constant technological advancement. In the case of the story of Zuckerberg's visit to the iHub, we indeed see depicted a tech-enabled future, but one that innovators in Kenya, and not just in Silicon Valley, are helping to build. In his post, Zuckerberg paints himself as a visitor come only to learn. Like any true tech rock star, the enthusiasm for him and his visit were palpable throughout the media coverage that inevitably followed him and in the comments section of his Facebook post. Many praised the lack of pomp and circumstance with which he traveled and his interest in entrepreneurs rather than in poverty. "Mark Zuckerberg," one commenter wrote on his Facebook page, "one of the world's most influential people arrives in Kenya without fanfare and sirens while some politicians who have no influence in their villages cannot let Kenyans drive in peace." In *Wired's* coverage of the visit, Steven Levy wrote that "Other billionaires come to Africa to be photographed with emaciated babies in rural villages. Zuckerberg has come to a throbbing, chaotic megacity to check out the programming styles of children" (2016). Some saw his visit as validation of the work that Kenyans were doing around technology, while others speculated at what it, and his visit to Nigeria the day before, would mean for the future of technology innovation on the continent. In his Facebook comments, one follower wrote enthusiastically, "You just proved to the world that indeed Kenya is the Silicon Savannah. Never a prouder moment like this to be a Kenyan;" while in a blog post on Medium, a Nigerian entrepreneur wrote that, "It really put Nigeria in the spotlight and I can't quantify how much progress that single visit will bring to the Nigerian tech community" (2016).

Situated Storytelling

No story, let alone a story told by such a "highly visible digital enthusiast" (Chan, 2014, p.5), stands alone in a vacuum, independent of the world in which it exists. Stories are informed by the world the storyteller experiences or by the world as he or she wants to see it, and they can in turn *act upon* that world (Bruner, 1991; Herman, 2011; Polletta, 2009). Enough stories told enough times by enough people can build up dominant cultural narratives that shape our view of the world (Herman, 2011; McAdams, Josselson, & Lieblich, 2006; Stephens & McCallum, 2013),

our understandings of what's normal, and beliefs about what's likely to happen in the future. Narratives about how new technologies can save the world, or how blockchain is the future of finance, or even about how Africa is the next best frontier for innovation all can become embedded as cultural norms shaping our assumptions, expectations, and dreams.

The interrelationship between our lived experiences and the stories we hear and tell and the narratives they build is worth paying attention to in any context, but becomes urgent when looking at its impact in the process of *producing* new technologies. Not only, as Srinivasan has pointed out, can techno-visionary stories "naturalize a belief that technologies should dictate our material and sentient experiences," (Srinivasan, 2017, loc 208) but they can shape the assumptions and expectations of those designing, building, and funding new technologies. Academics writing about the social construction of technology have, since Bijker and his coauthors in the 1980s (Bijker, Hughes, & Pinch, 1987), followed by Bruno Latour (1990) and Andrew Feenberg (1991) in the early 1990s, drawn our attention to how influential the social context of innovation can be in shaping the physical hardware and digital software that will come to shape our experience of and interactions with the world (Gieryn, 1994; Williams & Edge, 1996). Fittingly since then, there has been a wealth of scholarship examining the physical spaces of innovation for digital products (Harvey, 2000; Kitchin & Dodge, 2011; Massey, 2004), and the institutions, cultures, and networks of power around it (Kirkpatrick, 2008). There have been movements to practice innovation in more inclusive and collaborative ways (Foster & Heeks, 2013; Sanders & Westerlund, 2011), engaging with those who have not typically been engaged for this process like artists (Balsamo, 2011), and for there to be more public discussion and transparency around what assumptions and beliefs go into new technologies, like the algorithms that shape our experiences online, from Google's search algorithm to Facebook's newsfeed algorithm, to the algorithms being created by startups in Kenya to help financial institutions assess the credit potential of prospective loan recipients (Gillespie, 2014; Kitchin, 2017; Noble, 2018).

Utopian visions about a tech-enabled future can also normalize existing dominant approaches to innovating (Grunwald, 2018). For example, reflections on whether the capitalist startup-centric approach that dominates Silicon Valley's style of innovation is really the best path to building new technologies that will benefit rather than hurt are worryingly rare. Stories, amplified by tech and innovation evangelists, about the heroic self-made tech entrepreneur who becomes a billionaire can capture the imagination of aspiring tech innovators the world over and can help to accelerate the adoption of Silicon Valley's particular approach in diverse and nontraditional sites of innovation.

Interconnected Innovators

What is also apparent in the stories around Zuckerberg's visit to Kenya is how interconnected technology innovation, as it is currently practiced in Nairobi, is with its practice elsewhere around the globe. Diverging significantly from the isolated "ecosystem" that it is sometimes characterized as in the literature (Feld, 2012; Stangler & Bell-Masterson, 2015; Wong, 2006), not only are there countless foreign entrepreneurs in Kenya like Peter and Harrison, but there are also countless foreign visitors like Zuckerberg (or Vince Serf or Barack Obama), many of whom bring global attention or financial support and some of whom stay for far longer. Many Kenyan innovators also travel abroad. They attend international technology and innovations conferences like SOCAP and South by Southwest; they travel to Silicon Valley to train at the legendary startup incubator Y-Combinator, to Hong Kong to develop investor partnerships, and to London to pitch their ideas at global startup competitions like the Global Edtech Startup Awards. They consume international tech news as vociferously as any aspiring entrepreneurs in New York or Berlin, and while, like Peter and Harrison, they may struggle to attract attention, they can tell

their own "startup story" through their websites, blogs, and social media accounts, accessible to anyone who knows where to look online. The physical practice in which they're engaged also shares more in common with the practices in which other programmers and entrepreneurs in Hong Kong are engaged than the practices of the onion and tomato vendors down the road. They build things like design studios, fab labs, coworking spaces; they run hackathons and startup competitions and host fireside chats and training bootcamps – all practices that are "transnationally legible emblems of innovation" (Irani, 2015), recognizable the world over. Moreover, at least for the software developers in Nairobi, the internet has created not just a common platform of communication but also a common platform on which to practice and share their craft, like GitHub or Forrst.

But while innovators in Kenya, India, and Germany may be engaged in the same practice, their experiences around building their companies can differ greatly, shaped by their geographies, economies, national policies, and the individual stories and larger cultural and community narratives around and about them.

While Germany, for example, has benefitted from the immense investment that flowed its way in the reconstruction after World War II, researchers have found that Indians involved in transnational technological labor have experienced barriers as a result of their accents and nationalities, sometimes, as Winifred Poster argued, engaging in "national identity management" to disguise their true nationality (W. R. Poster, 2007). Of all regions of the world, Africa has perhaps been the most economically disadvantaged by the weight of its colonial history, as many important postcolonial theorists and Africanist scholars like James Ferguson, Ngugi Wa Thiong'o, and Franz Fanon have written (Fanon, 1965; Ferguson, 2006; Wa Thiong'o, 1994). Even long after the formal "colonial pathways" (Irani, Vertesi, Dourish, Philip, & Grinter, 2010) have been dismantled, many have argued that these hierarchies of power remain in the form of neoliberal structures in which money and influence often flow to the continent in the form of government or NGO aid and assistance (Comaroff & Comaroff, 2001; Ferguson, 2006; Harrison, 2013) and rarely from it. As Lilly Irani and her coauthors have argued in their excellent piece seeking to shape the approaches to technology production in developing countries the field of human computer interaction, "colonial relationships may have dissolved, and yet the history of global dynamics of power, wealth, economic strength, and political influence shape contemporary cultural encounters" (Irani et al., 2010).

To this list I would add stories and narratives. For example, pervasive narratives about the "Failed Continent" can also serve to restrict international perceptions of Africans to the primitive, poor, and war-hungry (Carruthers, 2004; Zeleza, 1997). While there has been some change in the international media representation of Africa in recent years, most notably conveying a new narrative of a "Rising Africa", scholars have shown how many of the negative characterizations of Africans persist (Mel Bunce, 2015). On a continent more commonly seen by outsiders as under-developed or developing rather than innovative or innovating, the weight of such narratives can be particularly heavy, limiting the kinds of technologies investors look for from African entrepreneurs and the success the expect from them. In this dissertation, by bringing a communications perspective to communities of practice theory and combining it with narrative theories, I hope to build a theoretical framework that will provide a useful way of analyzing the role that narratives play in shaping the experiences of African involved in transnational labor. In particular, as I will make the case in this dissertation that pervasive cultural narratives like the Failed Continent Narrative have served to pigeonhole many Kenyan entrepreneurs as foreign investors coming to Kenya look only for startups that will have a "social impact". As Yuri Takhteyev has written in his excellent book on software development in Rio Di Janiero, "the practice of software development thus appears to be simultaneously remarkably placeless and starkly placed" (Takhteyev 2012, p. 4). While the practices may be virtual, the geographic environments in which individual entrepreneurs are embedded can have often unseen influences over their ability to build technology and businesses around them.

In this environment, a visit from one of the biggest tech icons there is can enhance the sense of belonging to a community that is global and not merely national in scope. Seeing this icon tell the story about engineers and entrepreneurs in Nairobi can also legitimize the work being done in this corner of the global community in both the eyes of Kenyan entrepreneurs and those outside looking for new investments, helping to counteract some of the more insidious narratives about the failure of Africa and Africans. His story, repeated and reiterated by media and audiences alike, may also have strengthened existing narratives about Africa Rising and the growth of technology innovation in Africa, conveying the message that if Zuckerberg were interested then it might be worth paying attention to after all.

The Gap Between Stories and Reality

However, the impact of Zuckerberg's story does not stop at the beneficial. The inevitable *inaccuracies* in a story written from so short a visit also acted upon the lived experiences of those in and around the Bishop Magua Centre. Take Harrison and Peter for example. Zuckerberg's story (likely inadvertently) characterized their company as structured differently from how it was in reality and presented it as further along, rather than a company in a beta testing phase with only one customer. While an endorsement from a tech icon may appear to be a necessarily positive thing under the old adage that "there's no such thing as bad publicity,"[2] overselling and overpromising can be as problematic for a technology startup trying to get off the ground as underselling (Cremades, 2016). In our conversation, Peter talked about the problems that Zuckerberg's story about them had caused. After having to scramble to answer the flood of questions with which they were bombarded over just the next day, Peter found himself still having to dispel misconceptions about their work and their interaction with Zuckerberg even weeks later.

> I went to SOCAP [The Social Capital Markets annual conference] afterwards, and every single person there asked me about how Mark Zuckerberg thought we were so cool, and how I was like chatting with him, and hanging out, but it was just three minutes of me watching Harrison get to talk to him for a second. So it was pretty much just letting people down for the next month about what really happened.

Not only did Zuckerberg's story significantly increase interest in their company, but through its misrepresentation of what they did, it also increased the spread of misinformation about their company, creating pressures on them to correct and clarify what they did, pressures that would not have existed otherwise. Later in our conversation, Peter told me about how this had led them to include a Frequently Asked Questions section on their new website to head off the barrage of ill-informed questions that had been distracting them from completing their beta testing phase. Furthermore, by highlighting Harrison and Peter as the "engineers" who were "building companies to help *their* community" [emphasis added], Zuckerberg unintentionally turned two foreigners into the representatives of Kenya's community of technology innovators. Through this interplay between the reality as experienced by people who work in the Bishop Magua Centre and the story that Zuckerberg told describing it, it becomes apparent that *the practice of innovating new technologies in Nairobi*, like what Peter and Harrison and their Kenyan counterparts are doing, *and the stories about that practice are mutually constituted, constantly shaping and shaped by one another*. It also draws attention to the delicate balancing act in the relationship between perceived truth and storytelling. The integration of Peter and

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[2] Often attributed to P.T. Barnum, the 19th century circus owner and founder of Barnum and Baileys.

Harrison for example into Zuckerberg's story shows that care must be taken when attributing authenticity to spokespeople and when interpreting stories that claim to represent whole communities.

Furthermore, the lived experiences I observed of people around the Bishop Magua Centre during Zuckerberg's visit also draw into question the accuracy of the broader media narratives that emerged celebrating Zuckerberg and his visit. I did find people who were thrilled about his visit, like the iHub team lead, Lily, or like Adam, a designer I knew who worked with a hardware startup that featured prominently in the day's media coverage. Adam was effusive when I saw him after the visit. He told me that Zuckerberg had spent the morning in his company's office, "where the real work happened." "What impresses me," he explained, "is the money he could easily drop here that could really help our company go where we want to go." One of the board members of the iHub also spoke favorably and publicly about the billionaire and about Facebook's new mission to help extend internet access to Africa, through programs like free basics. "He's interested in cool tech that solves real problems, and I think to his credit – which is not him believing his own PR – he really does care about getting the internet to emerging markets and out to the edge of the world" (Shapshak, 2016).

By contrast, many of the people I knew best were more incredulous. Njeri, for example, saw the visit as a distraction from her work, Franklin, as a distraction from his lunch, and Jimiyu, as a symbol of power. Gathii, the entrepreneur I'd interviewed that morning pointed to what he felt was the hypocrisy in Zuckerberg's approach, funding startups in Africa but "institutions" in America. Similarly, Grace, another iHub employee with whom I worked, and who had been in a partnership meeting off-site during Zuckerberg's visit, echoed Gathii's skepticism. She rolled her eyes when I saw her the next day. "Facebook thinks it's going to save Africa." Together the experiences and impressions of people at the Bishop Magua Centre were varied, and the situation far more complex than the one presented in Zuckerberg's story or the media coverage of it.

The responses of Grace and Franklin and the others also underscores the fragile nature of authenticity in storytelling. Franklin, for example, bristled at the idea of "kneeling" for the photo in front of Zuckerberg, clearly skeptical of any real human-sized person behind the super human-sized stories that followed him. Grace saw a similar gap between the rhetoric she heard from Facebook and its 'real' practices in Africa. She was also clearly exhausted by the recirculation of the old outdated story about a Westerner coming to save Africa, be those Westerners colonizers, NGOs or multinational technology company. If the gaps between the world *as it is portrayed* in stories and larger narratives, and the world *as it is experienced* grow too wide, then the reputation of the stories, their storytellers, and even the practice of storytelling itself can suffer. For example, the story of the white savior of Africa has become so discredited in many parts of Africa, that those who still tell such stories are ridiculed; movements have emerged challenging the role of international NGOs and ex-pat NGO workers in domestic African development projects and the discrepancies between the pay they and their local counterparts receive (O'Neal, 2016; Peters & Wendland, 2016; Secret aid worker, 2016). Tech icons like Mark Zuckerberg present themselves as fortune tellers of our globally realized technological future. Their stories are meant to inspire, to keep our own visions of the future firmly fixed on the technological. But in a practice like technology innovation so embedded in the contemporary attention economy, with its pressures to tell headline-grabbing stories about the latest product in health or entertainment or education, the stories they tell can be especially prone to exaggeration and hype, leaving audiences open to disappointment, frustration, or even anger.

New Stories

In the last five to ten years, there has been an undeniable upswing in the success of startups and technology entrepreneurs from outside of the United States. There are now reportedly 106 non-

American companies that have joined the unicorn club and been valued at, and acquired for, over $1 billion, 55 of which are in China alone (CB Insights, 2017). With the success of, and publicity around, startups from much smaller or unexpected countries – like Waze from Israel, purchased by Google for $1.3 billion in 2013, or Spotify from Sweden, valued at $8.3 billion (CB Insights, 2018), or Careem, the rideshare rival to Uber from the United Arab Emirates valued at $1.7 billion (Lunden, 2017) – it is clear that Silicon Valley companies no longer have a monopoly on innovation. As Elizabeth Scharpf, an American entrepreneur, wrote in an opinion piece for *Wired* in 2016, "true innovation now comes from places and people that are typically overlooked by Silicon Valley" (Scharpt, 2016). And as one well-known Nigerian tech blogger wrote in 2016, "I think people are (slowly, but surely) beginning to realise that over-reliance on a small demographic for (I don't know) ALL THE SOLUTIONS IN THE WORLD is a bad idea" (Osamuyi, 2016). Along with this trend in practice, there has been a gradual but important increase in academic work foregrounding technology innovators outside of The Valley. Takhteyev's study of software programmers in Rio Di Janiero (2012) Anita Say Chan's study of the culture of innovation in Peru (2014), and Aneesh Aneesh's study of Indian software programmers (2006), and Richard Pfeilstetter work on the promotion of startup culture in Manchester, England (2017) are all examples that come to mind of other ethnographers who have done this important work.

But the iHub is not just outside of Silicon Valley, it is in Africa, and of the 106 unicorns that have emerged outside of the United States, only 3 are based in Africa: Africa Internet Group in Nigeria, and Promasidor Holdings, and Cell C in South Africa, and even their relationships with Africa are complicated. Africa Internet Group, for example, the company responsible for the well-known internet retailer Jumia, was indeed started in Lagos Nigeria, but has European founders. While new entrepreneurs everywhere struggle to gain attention amidst the hype and the noise of the industry in which they work, over the course of my fieldwork it became apparent that those in Africa face unique challenges. Starting in about 2013 Africa suddenly became "sexy" (as one iHub staffer described it to me) to the global tech community, following an earlier media trend that began to include narratives about Africa as *Rising* rather than *Failed* (Melanie Bunce, Franks, & Paterson, 2016; Nothias, 2014). Just as innovation from Silicon Valley seemed to be becoming increasingly frivolous – "a service that packs your suitcase virtually" and "a 'smart' button and zipper that alerts you if your fly is down" are just two examples listed by one *New York Times* columnist (Arieff, 2016) – American entrepreneurs and investors began to look elsewhere for meaning and to fulfill technology's mission to "do good things" rather than just trivial ones. From this perspective, Africa gradually became a setting where the Facebooks and Googles of the world could prove that their products really were changing the world for the better, and Harvard Business graduates could test out their own world changing ideas. They could bring the internet to those in the dark! Bank the unbanked! Disrupt poverty! But for those Kenyan entrepreneurs and techies I came to know, while the growth of the Africa Rising Narrative as well as others optimistic techno-visionary stories helped to inspire many Kenyans to become startup entrepreneurs, many faced very real limitations in doing so. As a result, Nairobi as a "tech hub" of Africa, became a site of contestation over how technology innovation in Africa should be practiced and what its values and priorities should be, often boiled down to a debate about whether international legitimacy or local relevance mattered the most.

A New Lens

This dissertation takes head on the multifaceted, and often fraught, relationship between stories and narratives on the one hand and the lived experiences in our contemporary interconnected information economy on the other, and draws attention to the unique impact they have on the lives of techies and entrepreneurs in one seemingly "unlikely place" (Takhteyev 2012, p.1) for

innovation, Nairobi, Kenya. Over the course of two two-month visits in 2013 and 2014 and one year-long stay from January to December 2016, I conducted an in-depth ethnography of the Kenyan "technology hub" known as the iHub, collecting firsthand the stories (like Zuckerberg's or Harrison and Peter's above) and observing the experiences (like Franklin's, Njeri's, or Grace's above) of some of the entrepreneurs, programmers, researchers, managers, and investors in and around the Bishop Magua Centre. In the pages that follow, I seek to draw attention to these experiences and examine how they have shaped and been shaped by the stories told around them. To do so, I have built a theoretical framework without which I believe making sense of the unique challenges faced by Kenyan innovators as well as the iHub itself would extremely difficult. Throughout this dissertation, I hope to make a persuasive case that stories and narratives, though themselves intangible, influence the extent and quality of Kenyan engagement in the globally interconnected work of technology production, and operate to create pressures that are notably different from those experienced by other aspiring entrepreneurs outside of Africa. They inspire, motivate, and legitimize, as well as mislead, constrain, and de-legitimize. They are used to perpetuate hegemonic approaches to innovation and ideologies as well as to resist and reframe them and they create hierarchies of legitimacy that can be particularly challenging for African innovators to climb.

In the first chapter, I begin by using the ways in which technology innovation has been practiced in Silicon Valley to build a new theoretical framework that makes sense of the expansion of those practices to other parts of the globe and the implications of that expansion for techies in a historically disadvantaged region of the world. The framework begins from Lave and Wenger's communities of practice theory, which seeks to explain how people learn, become members of, and gain legitimacy within communities built around practice rather than identity (Lave & Wenger, 1991). I strengthen the theory by bringing a more critical eye and focusing on certain aspects of it that had been frequently overlooked, namely the power imbalances, the potential for conflict inherent in heterogeneous communities formed around practice rather than identity or geography, and most importantly, the role that stories and narratives play in these communities and the construction of the legitimacy of new members. While linguists have frequently taken up communities of practice theory to look at micro-level communications patterns like accents and jargon, I believe the roles played by stories, like Zuckerberg's techno-visionary stories, and larger cultural narratives, like the Africa Rising Narrative, have been notably under-theorized. By incorporating narrative theory, I am able to build a new lens that helps to understand how communities of practice are formed and change and how members' sense of meaning and legitimacy are constructed.

In the first chapter, I also introduce the concept of a Community of Technology Innovators (CTI), a community of practice formed around the practice of designing new technologies for commercial purposes and building fast growing startups around them. In the case of technology innovation practices in Silicon Valley, I show how its own CTI is characterized by its rapid pace of innovation, its capitalist ideology, its venture capital funding structure creating pressures to expand quickly and globally, its material culture like its open-plan coworking spaces, its storytelling practices like the techno-visionary storytelling, and its community narratives, like the Technology is Good Narrative, that transmit and reinforce common values and create a model of the practices of a successful member of Silicon Valley's CTI. By the end of the chapter, I make the case that the interconnected way in which technology innovation is currently practiced can be most usefully conceptualized as a set of *overlapping* Communities of Technology Innovators. Some of these communities are geographically situated, like the Silicon Valley or the Kenyan CTI, but there is also a larger over-arching community that I call the Global Community of Technology Innovators (GCTI) in which innovators in very different geographic environments are simultaneously engaged.

In Chapter 2, I use the theoretical lens I built in Chapter 1 to analyze the ways in which storytelling and narrative construction help to expand and reinforce the GCTI, its practices, and

its norms. By focusing on the development and evolution of one particular new narrative about how "anyone anywhere" in the world can design and build new transformative technologies, what I refer to as the Anyone Anywhere Narrative, I demonstrate how narratives enhance the sense of transnational belonging in the GCTI and how they inspire outsiders to want to join and to believe that they too can be successful technology innovators. This was particularly the case I found as a result of the integration of new settings, heroes, and storytellers into the stories being told about "anyone anywhere" that transformed it into a new more locally-relevant narrative, the Kenyans Can! Narrative. Beginning to draw down to the particular way in which narratives operated in the context of Kenya, I show how the Anyone Anywhere Narrative was able to resonate especially well with hyper-connected young middle-class Kenyan audiences because it echoed beliefs embedded in existing narratives about Kenyan identity and aspirations.

By Chapter 3, I turn the narrative/communities of practice lens on the experiences of four Kenyan entrepreneurs and their technology startups as they work to gain legitimacy and to be taken seriously at home and abroad. In it, I show how the Anyone Anywhere Narrative may have helped to inspire them to try their hand at entrepreneurship, but other reductive narratives, like the Failed Continent Narrative, also influence expectations about entrepreneurial identity and about Africa and Africans that in turn served to restrict the ability of three of these entrepreneurs to participate fully in the GCTI. In particular, many felt pigeonholed, seen by international investors as "social entrepreneurs" rather than being judged by the same criteria as their international counterparts. With the story of the fourth entrepreneur, I show how through embracing the GCTI practice of storytelling and embodying the techno-visionary storyteller she was able to gain attention in the saturated information environment of the GCTI and to construct a narrative for herself as a successful technology entrepreneur from Kenya.

If Chapter 3 draws attention to the gap between the stories about technology innovation and the experiences of Kenyan innovators, then Chapter 4 answers the question: What happens when these gaps become exposed? In it, I demonstrate how in some cases this has led to a decline in both the desirability of membership in the GCTI and in the reputation of storytellers and the practice of storytelling. I show how particular GCTI practices like potentially discriminatory investment practices, an infatuation with the newest technologies beholden to hype cycles, and an obsession with open-plan coworking spaces have all been offered up for rejection. I follow some of Kenya's disgruntled innovators as they not only reject the GCTI and many of its practices, but also – through the use of more subversive storytelling techniques, like rumor, humor, and Twitter – built new counter-narratives about how they want technology innovation in Kenya to be practiced going forward. I argue that the development of such counter-narratives represents a movement to disentangle Kenya's own Community of Technology Innovators from the Global community, and to force a national-level dialogue about how to practice technology innovation in Kenya in a way that is reflective of Kenyan needs and values and not just subject to the pressure to conform to existing GCTI practice.

In the fifth and final chapter, I focus on the single case study of the iHub and use the analytical lens I have built and refined over the proceeding chapters to make sense of its fate and understand its role among Kenyan techies. In its first few years of existence, the founders of the iHub used their own experience with storytelling as bloggers to shape key narratives about how Kenya was the "technology hub of Africa" and the iHub was at the center of it, attracting foreign GCTI interest to Kenya and to the Bishop Magua Centre in particular. By doing so the iHub constructed a narrative for itself as a legitimate member of the GCTI and as a gateway to Kenya's own CTI. However, by the time I was conducting my principal fieldwork in 2016, the fame that the iHub had received as a result of these narratives ended up creating new barriers for it. By being in the spotlight as a "center of innovation" and a "gateway" to Kenya's technology sector, new counter-narratives eventually emerged about the iHub being "all hype" and more focused on international visitors and funding than on the local community that helped to create it. For many in Kenya's CTI, I found that the iHub had come to be seen as too closely associated with the

GCIT, representing for many the injustices they felt they had experienced in their interactions with foreign members of the GCTI, particularly investors. Through this process, the iHub was transformed on a narrative level from the storyteller of a movement around African-led innovation and a symbol of its success, into (at least for a Kenyan audience) a symbol of the deception of Kenyan innovators, a symbol against which a new movement to make Kenyan innovation more authentically Kenyan could rally.

Methodology

Finally, before proceeding to the meat of this dissertation, I would like to talk a bit about the methodological approach chosen for this study in order to give the reader a more complete picture of the perspective from which I write and the depth of the data from which I draw.

Setting: The iHub

The primary site of my fieldwork is of course the iHub. The iHub sits on the 4th and top floor of an older office building called the Bishop Magua Centre, situated just off one of Nairobi's main transportation arteries, the often jammed Ngong Rd, a road sometimes referred to by members of the Kenyan CTI as "Silicon Alley" for the large number of technology related companies that opened offices on and around it. The Bishop Magua building, as we saw in Zuckerberg's visit, boasts a particularly large number of technology companies. But it is the iHub itself and its offshoots that take up the majority of Bishop Magua's office space. In addition to the main community space on the 4th floor, the iHub also maintains a staff office on the 2nd floor (where Franklin, Grace, Njeri, Lilly and others are based), a Google-sponsored user experience lab on the 1st floor, and a World Bank assisted incubator called m:lab on the 3rd floor. A number of the other offices in the building are also closely connected to the iHub: the hardware company, BRCK, founded by two of the iHub founders, the hardware coworking space, Gearbox (where the group picture with Zuckerberg was taken) and the startups like MFarm that got their start at the iHub, are all often referred to as "friends of the iHub" by iHub staff members. The iHub has become so interconnected with Bishop Magua that people often refer to the building itself as the iHub.

The work that the iHub actually does is somewhat difficult to describe and undeniably broad. Since its founding in 2010, it has been many things: A community center for techies, a coworking space for entrepreneurs, an incubator for technology startups, a pre-incubator for ideas that did and did not lead to startups, a trainer in programming languages and data science skills, an organizer of a regional startup competition, a research and software programming consultant, a host for networking events, for hackathons, for other startup competitions, and for prominent international techie visitors like Marissa Mayer and Mark Zuckerberg, a matchmaker for entrepreneurs and investors, a model for other technology communities across the continent, and a representative for and leader of a movement to build technology by, for, and in Africa. In the eyes of much of the international press that pays attention to Kenya, the iHub has often been both the storyteller for, and the gateway to, Nairobi's technology sector.

Gaining access to the iHub

I first visited the iHub in June 2013. After exploring potential avenues of research during my first year of the PhD, I sent an email to the Research Lead at iHub Research, the organization's research arm that studied technology and its uses in East Africa. She suggested that when I came to Kenya that summer, they could host me as a Visiting Research Fellow, as they had done for other technology researchers, foreign and Kenyan alike. I had little prior experience as either a programmer or an entrepreneur and so initially expected gaining access to a *technology* community to be somewhat difficult. Instead, the fact that the iHub had its own dedicated

research division meant that I found a team of like-minded people who understood and appreciated the role of research and looked at me, from the beginning, as more peer than complete outsider. Furthermore, the iHub's mission of being an open community space, and its role as a gateway, meant that it was particularly easy to gain initial access as a visitor, even without an affiliation with the research team. And because of this openness, I experienced the iHub's role as a gateway connecting Kenyans techies to the rest of the world and vice versa. Like many foreigners interested in Kenya's technology sector, the iHub was my first port of call for this study, though unlike many others, I had previously lived and worked in Kenya, working at a Kenyan media freedom NGO.

Gaining access to the rest of the staff, the designers and programmers and managers outside of the research division proved more difficult than accessing the space or the research division. As I would later learn, to some on the rest of the staff, the Research team often seemed quite distant, removed from the rest of the organization. And while the iHub was accustomed to receiving visiting researchers as fellows, hosting them while they studied some aspect of technology in Kenya, they were much less accustomed to having a researcher study the iHub team itself. After some time, through my relationship with the Research team, I eventually built a rapport with the iHub leadership. After sending them a written proposal of what I intended to do and holding a number of in-person and email conversations, they agreed to my study in January 2016, after which I sent around an email to the rest of the iHub team with a description of it. Even so, it took over a month before I gained access to some of the normal channels of internal communication within the iHub (namely the mobile application for small businesses, Slack), and longer still before any particular role beyond Visiting Research Fellow was established for me. By March 2016, however, I was attending and permitted to record regular staff meetings and had been assigned to work as part of the organization's small communications team, consisting at the time of two communications officers (one responsible for the iHub proper, the other for the m:lab incubator), a designer, and a photographer and videographer.

Complicating my access to particular parts of the organization were a few somewhat unusual issues around the organization's leadership. While the CEO ran the day to day operations of the organization and had approved of my study, the board members often spoke publicly for the organization and published blog posts about changes at the iHub, and I found them to be more difficult, though not impossible, to reach. Furthermore, in April 2016 the iHub acquired new investors and began evolving into more of a for-profit business; four months later, they had a new CEO. Each of these changes complicated the question of authority and made it necessary for me to frequently check in with the new leadership and regularly reassess and at times reaffirm my own role within the organization. Luckily, in the new CEO I had the good fortune of finding someone with a research background, who, while he at times took quite a strict approach to running the organization, seemed thankfully open to a researcher studying the changes that the iHub was undergoing. In the end, he gave me access to more senior level management meetings than I had previously had access to.

Characters

The participants

In January 2016, when I began my principal fieldwork, the staff of the iHub consisted of approximately 33 individuals, (not including the board) comprised of managers, programmers, designers, researchers, and communication specialists. Of these staff members, all but one were Kenyan citizens, racially black, and ethnically coming typically from Kenya's more populous tribes, the Kikuyus and Luos. The remaining non-Kenyan on staff was a white female American designer experienced in user-centered research. Though only a few of the staff had a master's degree, most had a bachelor's degree, typically from a Kenyan university. Those that did have a

master's degree had often studied abroad, usually in Europe to obtain it. In terms of gender, women made up over a quarter of all staff members, with most working at iHub Research or m:lab. Of those, three were in prominent leadership roles, heading the m:lab, iHub Research, the Design Lab, and serving as the COO. The iHub's four original founders were also all Kenyan citizens, while there were black, one was a white Kenyan who had grown up in East Africa to American missionary parents. As I've been going to the iHub since June 2013, I have also seen a lot of changes in staff. Between 2013 and 2016, for example, the iHub Research Team shrank from about twelve people to five, and in mid-2016 the iHub brought in a new CEO who was ethnically Indian but had been raised and had previously worked in Germany.

From 2010 to the end of 2016, the organization operated as a non-profit but had partnered with foreign and Kenyan donors and corporations to help fund its work, like intel, Google, Zuku, Safaricom, Hivos Foundation, and Omidyar Network. Beyond the iHub's own staff, there were many, frequently changing faces that came through the iHub, particularly the 4th floor community space. Counting only those that I saw myself, these included: entrepreneurs trying to get an idea off the ground, programmers working with entrepreneurs or on consulting projects, students working on homework for their software accelerator classes, TED fellows, baristas, bloggers, designers, journalists working on stories about Kenyan startups, artists who'd come for a talk about the intersection between technology and art, managers of global startup competitions like the 1776 Challenge Cup, managers and employees of NGOs working on mobile applications or looking to fund them, foreign venture capitalists looking for a new project to invest in, representatives of other African coworking spaces looking for advice, and visiting foreign and Kenyan researchers like me. Aside from those who wanted a committed desk space or to host a sponsored event, access to the iHub was always provided free of charge. Of those that used the space, I also saw the demographic breakdown change over time. When I first visited in 2013, at perhaps the height of the international media attention it was receiving, the space was often about one quarter filled with foreigners from across Africa as well as Europe and the United States. By 2016, the number of white foreigners in particular regularly using the space seemed to have dropped to only a handful. Among both the staff and members who used the iHub's space the vast majority of people were young, in their 20s or 30s.

The researcher

My ability to access different parts of the iHub and understand the lived experiences of people in and around it was shaped further by my identity, and the experiences that people in my fieldsite had previously had with white foreign female researchers. Throughout my fieldwork I endeavored to enact the reflexive turn in anthropology (Coffey, 1999; C. A. Davies, 2008; Foley, 2002) and paid particular attention to the ways in which my own identity influenced not only the kind of access I was able to get and how I was seen, but also my own interpretation of what I observed. As John L. Jackson Jr. has written, "it is about recognizing that the anthropologist is always a political actor in the everydayness of her practice (in a way that demands unpacking and explicit articulation)" (Jackson Jr, 2010, p. 284).

Firstly, being a foreign researcher looking to study some aspect of life around the iHub, was not unique, as the existence of a Visiting Research Fellows program might indicate. In particular, many of the entrepreneurs around the iHub were all too familiar with people – researchers and journalists alike – looking to interviews them. In my first two visits to the fieldsite in 2013 and 2014, I found this experience quite frustrating as many of the entrepreneurs I spoke with seemed both pressed for time and tired of fielding interviews often giving boiler plat answers to questions that felt far from the 'lived experience' I was hoping to see. By contrast, I found the staff at the iHub, aside from the communication officers who regularly fielded interviews, to be far less accustomed to being interviewed, and far more accustomed to operating behind the scenes. And while some initially seemed uncomfortable being in the proverbial

spotlight when being interviewed, they also were more likely to give thoughtful, less rehearsed answer to my questions. In this context, I found it particularly useful to use a mixture of interviews, informal discussions, and participant observations, allowing me to see how people chose to answer questions in the more structured format of even an unstructured interview, to hear what they were willing to discuss during after-work drinks with colleagues, and to observe how they practiced their profession and interacted with one another on a daily basis. Furthermore, because some of the iHub's staff had their own experience conducting research, it is likely that they were often looking at me with the same inquisitive eye of a researcher with which I was observing them. Rather than ignoring this, I chose to take advantage of our shared interest. Over the course of my time there, I talked frequently with members of the iHub staff about my research methods, the process of writing fieldnotes, my interpretations of my observations, and challenges I was facing accessing particular individuals or interpreting a particular event. In exchange, they often did the same with me with various projects they were working on. On reflection, this mutual dialogic exchange, while a process that emerged organically from my relationship with my colleagues at the iHub, is, in fact, fitting for the inherently collaborative quality of ethnographic research (Lassiter, 2005). And while this finished dissertation is not fully collaborative in the more contemporary sense (Lassiter, 2005) in that I am its sole author, I take inspiration from Mitchell Duneier's approach (Duneier & Carter, 1999) and have already made plans to return to Nairobi later this year to present my findings to those I worked with and plan to integrate some of their feedback, particularly in the form of an epilogue, as I move forward with the publication of this manuscript. Furthermore, the relationships I've built with these colleagues in the field have also led to a few collaborations to produce co-authored publications that are currently underway. In the end, over the course of the year I often felt like I was "studying sideway" (Plesner, 2011), studying and working with colleagues as opposed to research participants. Those I worked with not only had access to most of the same information I did, read the same news, followed the politics of my home countries (they were particularly interested, for example, in Brexit and the election of Donald Trump), and had university degrees, but some of them shared a love of research with me.

Secondly, being a foreign white woman around the iHub was also not an uncommon sight. There were frequently people who shared these identity traits coming through the iHub on brief visits, including women who ran NGO-sponsored events, like with the World Bank, or worked with visiting startup competitions, or who were writing journalistic pieces. There were even others who were there for long periods of time, a few months for the other foreign researchers I met, or indefinitely for some of the women looking to start companies, working for startups, or even, in the case of two individuals at various times, working as part of the iHub's staff. Being a common sight meant that I didn't stick out in the way that someone with my identity might have done in Bomet, a small village in Western Kenya for example. But at the same time, it also meant that there were often pre-established expectations that people in and around the iHub had when they saw me. Often these included expectations that I was wealthier than those around me and might be looking for things in which to invest. At other times, these included more cautious expectations from those wary of exploitation, not just as a result of Kenya's colonial history, but also as a result of the many foreigners who had come through the iHub and used it for its connections and its 'local' knowledge, but who had not given much in return. Some of this was even informed by some of iHub Research's own staff concerns about how the Visiting Research Fellow program had, on a few occasions, been used to facilitate research that had ended up being more extractive than beneficial to the iHub or its community. This was further complicated by the recent trends in broader Kenyan public discourse towards a more critical stance on the pervasive role of foreigners and foreign-run NGOs in Nairobi (Kuo, 2016) that I alluded to earlier.

A bit to my surprise, I found that my identity as a woman did not seem to greatly inhibit my research experience. This was likely in part because I found a significant number of women

playing prominent roles in the iHub, in many of the organizations around the building, and as entrepreneurs themselves. While I did, on rare occasions, find myself having to stave off a few unwanted male advances, such incidents were no more frequent than in any other professional contexts in which I have worked previously. Additionally, I found that traditional views about appropriate gender roles meant that, at times, I had difficulty successfully paying for lunches or coffees with male informants if I wanted to do so as a thank you. If anything, I found that being a woman with a somewhat laid-back demeanor seemed to put people at ease making them potentially more willing to open up than they might have been with a more intimidating male researcher. Furthermore, being a woman seemed to, unsurprisingly, open conversations more naturally with other women in the sector. Kenyan woman, for example, are keenly aware of the ongoing debates around gender discrimination in Silicon Valley and a comradery sometimes developed around the challenges women face in advancing professionally as technology innovators.

As a result of all of these complex dimensions around my identity as a researcher, ex-pat, and a white woman, it felt particularly important that my study be an in-depth ethnography and that I establish an extended period of engagement and commitment to the Kenyans I worked with. And given the resources my university provided to me I was privileged enough to be able to spend the time to do so. By repeatedly visiting the iHub over a four-year period, and working with the iHub staff (rather than just as a member in the 4th floor space) continuously over the course of an entire year, I was able to gain access to the experiences that were rarely revealed to those who were just passing though, including to skepticism and critique (like those expressed by Njeri and Franklin during Mark Zuckerberg's visit) whispered only to people of trust. Additionally, in an environment like the iHub that had attracted so much international attention for leading a movement around designing and building African technology in Africa, it is easy to get swept away by excitement at the prospect of a 'rising' Africa. Even on my own first visit in June 2013, I recall feeling this way, sharing Mark Zuckerberg's excitement at seeing a place where it seemed like ex-pats like me were not dictating how technology was being used or created and instead it seemed like Kenyans were building their own technology for their own communities. For those who come through the iHub for only a brief period of time, this is likely one of the primary feelings they are left with. However, with more time at the iHub, that potential for blindly celebratory thinking dissipates. At times, even boredom sets in. Just like when you accept an exciting new job, the enthusiasm about what you thought the job would be eventually gives way to the day to day realities of actually doing the job. In environments like the iHub that have received extensive media attention and acclaim, and that is constantly engaged with the rapidly changing global information environment, I believe that a slower more protracted research methods like ethnography, combined with a critical eye, was indispensable in helping me to get beyond the hype and the chatter and to see some of the challenges that many of iHub's members often faced.

The technology

In sometimes subtle and surprising ways, technology itself, became a character in this study. I am hardly the first to use ethnography as a method for understanding labor that revolves around virtual practices (G. Coleman, 2014; Hughes, 2014; W. R. Poster, 2007; W. R. Poster & Prasad, 2005). Aneesh Aneesh (2006), Yuir Takhteyev (2012), Anita Say Chan (2014) and Jenna Burrell (2012) have all demonstrated before me how ethnography, traditionally seen as an inherently physical method, can be adapted to enrich our understand of digital labor and the production of digital material. I also take particular inspiration from Miller and Slater's (2000) assertion that ethnography, including in the off-line world, can be a rich way of understanding the complexity of human interactions with the digital internet.

Technology therefore played a primary role in this study. It was an object around which the digital labor I observed revolved, it was a platform on which work was conducted, it became a research tool for me, at times enriching the data I was able to gather, at others, creating digital barriers to some sources of data. It meant being introduced to new informants over WhatsApp, and following group discussions on Slack, WhatsApp, Periscope, and Twitter. It meant using Evernote to capture company websites at particular moments and to catalogue new articles as well as using the Wayback Machine to return to unique moments in time on relevant websites like the iHub's homepage that had since disappeared from the present internet. It also meant needing, and sometimes failing, to overcome certain barriers to access for each new platform. For Twitter, for example, it took a long process of exploring the site and consulting with others around the iHub to find who to follow and how to interpret discussions around different trending hashtags. For Slack, it took getting an iHub manager to grant me access to the platform, but it also meant that when Slack eventually grew out of fashion with the iHub staff I had to reassess and follow the new, changing lines of communication that had migrated to email and WhatsApp. For WhatsApp, it meant needing to identify particular discussion groups and approaching each group's managers in order to gain access. Sometimes this proved particularly difficult as in the case of one WhastApp group for Kenyan entrepreneurs. While I was repeatedly told that it was a rich site of debate around the future of the practice of technology innovation in Kenya, I found that the group retained an elite quality, making it impossible to access as a non-entrepreneur despite personally knowing two of the group's managers.

Fittingly, for working in a technology community, I also found myself integrating various applications into my own research method in a way that deviates from some earlier, more analogue approaches to ethnography. For example, I very rarely took jottings by hand, preferring instead notetaking either on my computer or on my mobile using the Notepad or Evernote applications. Similarly, I wrote my fieldnotes exclusively in Word or using oral transcription. I frequently used my iPhone's features to take photographs, videos, audio recordings, and "sensory postcards", finding the size of the iPhone to be far less invasive than a larger digital camera or microphone, though I had brought both with me.

Finally, as Miller and Slater (2000) and others have successfully shown, just because the core practice of a community revolves around the digital, does not mean that the ethnography itself should be approach *entirely* virtually. Participants still, of course, exist and interact with one another off-line. Tellingly, the iHub itself was created because members of a *virtual* community of techies called Skunkworks, wanted a permanent and *physical* place where they could meet and interact face-to-face. In fact, members of the iHub would frequently talk to me about how important in-person contact had been, helping them to get a new investment, or spitball a new idea. Even for this community of practice that revolves around the digital, analogue interactions were not only important but essential. Because the lives of those who practice technology innovation in Nairobi comprise both online and offline experiences, an ethnography of their work would be incomplete without taking both into account. As a result, I believe that the hybrid approach taken for this study, collecting everything from Twitterstorms to clothing choices, Slack discussions to office jokes, provides a holistic view of the lived experiences of those in Nairobi's technology sector that would not have been possible with an offline or online only approach.

Plot

Conceptual approach

In many ways, the iHub is the exact opposite of the mythological bounded fieldsite – isolated from the world and from the ethnographer's experience of it – a myth that informed many of the early approaches to anthropological research (Candea, 2007). Over the last seven years the iHub has, by design, been made available, visible, and palatable to not only Kenyans but also

foreigners, not only students but investors. It is an entity very much of the modern hyper-connected information economy. It has been a draw both for the internet savvy Kenyan who wishes to become a producer or who imagines himself a global citizen with the technological skills to match, and for the seasoned serial entrepreneur looking to branch out into a new market. With so many individuals with their organizations and ideas, their assumptions and expectations, their networks and areas of expertise, approaching the iHub as any kind of isolated single fieldsite would be missing the point of the organization. As a result, my approach to this study was informed by Arjun Appadurai's assertion that culture in the contemporary global landscape is better conceptualized as fundamentally ungrounded and unbounded (Appadurai, 1996), and inspired by the recent movement in anthropology to "delocalize" ethnography (Sorge & Roddick, 2012). While prominent advocates of the delocalizing movement, like George Marcus, advocate making the fieldworker herself more mobile traveling to multiple sites to follow things, lives, and stories (Marcus, 1986, 1995), I believe that the iHub, with its endless web of things, lives, and stories, represented an opportunity to approach fieldwork conceptually in a delocalized way while at the same time approaching it physically grounded largely in one place. For this, I took direct encouragement from the work of Jenna Burrell, who conducted her fieldwork based in a cyber café in Ghana. Burrell advocates imagining the single fieldsite itself as a heterogeneous network. "I advocated staying in place," she wrote, "to 'intercept' circulations of data, people, and goods rather than following them" (J. Burrell 2009, p. 196). As a result, I chose to spend the majority of my fieldwork as a participant observer at the iHub, joining the staff as an advisor to the communications team. Doing so allowed me to observe the flows – sometimes denser and faster, other times slower and more intermittent – of people, technologies, ideas, inspirations, hopes, frustrations, and most interestingly, stories, that came through the iHub throughout 2016. Doing so allowed me to notice the excitement of people coming in for the first time and the frustration of others when the internet went out or when their office space was taken over for another event or when they saw the iHub they knew and loved change. It allowed me to hear the stories that entrepreneurs told in their pitches at competitions and to appreciate the laborious sometimes tedious work of building what they'd described. It allowed me, as I showed above, to see and hear the way that Mark Zuckerberg and others talked about his visit to the iHub, and also to watch how in practice it brought both attention and disruption to the iHub and the entrepreneurs that featured in his story.

Methodological approach

Over the course of the 16 months in total that I spent in Nairobi for this study, I interviewed every staff member at the iHub, as well as over 80 entrepreneurs, investors, and other techies around Nairobi's tech sector. The approach that I took to each interview was tailored to the particular interviewee. I took a semi-structured or unstructured approach depending on how relaxed the individual seemed for example. Their comfort level also dictated whether I chose to take notes by hand, on the Notepad or Evernote applications on my mobile, on my laptop, or created an audio recording of the conversation. Given that most of the people I spoke with were techies of one kind or another, I found most people to be particularly comfortable when I took notes using my laptop. This is in contrast to a fellow researcher I knew who said that the local politicians he was interviewing frequently preferred to be audio recorded because it added an air of importance and authority to their interactions. As part of my participant observation, I advised the iHub's communications team on their media strategy, contributed to the blog, attended team meetings, and assisted with some of the events that were organized at the iHub. I attended as many of the events held in the iHub as possible, including entrepreneurial training sessions, startup competitions, a TED recruitment event, three iterations of an event series called iHub Speaks, and community events where the iHub team discussed changes in the organization with their members. Over the course of the year I had countless informal conversations with the iHub staff

members over lunch, in between assignments, over after-work drinks, during leaving parties for departing staff members, and during informal group outings like a hike, a visit to a nearby mall, or a wedding of one of the staff members. While the iHub was always my primary fieldsite, at times I ventured away from it to get a different perspective on the organization and on the practice of technology innovation in Nairobi beyond it. I visited six other coworking spaces in the city and spent a week traveling to one in Mombasa, Swahili Box, that had opened in 2015. I attended three major conferences for the Kenyan technology sector, Nairobi Tech Week in March, Innovation Week in July, and a 3D printing conference in June, and spoke to everyone I met there and elsewhere about their impressions of and views on Nairobi's technology sector. I attended any, and nearly all, technology or innovation related events advertised on Eventbrite. While the interviews often provided glimpses of how individual entrepreneurs thought about their own work, these conferences and other discussion-based events I attended provided rich interactional data as a result of their debate-centric formats and the proclivity of the Kenyans I met to engage in heated discussions. Such debates – about, for example, whether foreign entrepreneurs or investors should be allowed in Kenya's technology sector or about whether the iHub was worth the hype – rarely happened in the more isolated environment of an interview.

Over the course of the four years of research on this project, I also regularly collected media content pertaining to the iHub and Kenya's technology sector. This includes articles in international media outlets, like *TechCrunch* and *Forbes,* on the subject, as well as blogs written by the iHub's employees and other Kenyan techies, the content of the iHub's own corporate blog, and Twitter debates, particularly around controversial hashtags like #BlackFoundersMatter that advocated for more investment in black African entrepreneurs. It also included the PR content on the websites and marketing material of organizations operating in the sector, including international technology companies like Microsoft, Facebook, and IBM, local ones like Safaricom or Airtel, or startups like MKopa Solar, Eneza, or Sanergy. I saved all of this material in EverNote, an application as useful for web clippings as it is for note taking and which could sync across my mobile and laptop.

In an acknowledgement of the role that the debate around "writing culture" (Clifford & Marcus, 1986) and the politics of cultural representation in the 1980s and 1990s played in the history of the field of anthropology, I want to say a final few words about the choices I have made in this dissertation around the presentation of my findings and the representation of the iHub that I have chosen. As Emerson and his co-authors have explained, the process of writing an ethnography is an inherently performative act; while the author attempts to represent the fieldsite as sincerely (Jackson Jr, 2010) as she can, the choice of style, content, and overall representation are informed, in part, by her intended audience (Emerson, Fretz, & Shaw, 2011). This is no less the case here. Overall, I have largely adopted a purposeful kind of hybrid writing style that attempts to combine academic insights and theorizing with the accessibility and flow of more popular writing. I have chosen to do so with multiple academic audiences in mind, from my dissertation committee, to my peers in my home discipline of communications, as well as other disciplines like anthropology, management, science technology and studies, human computer interaction, and African studies. It is also my hope that some non-academic audiences might find it useful, most importantly, the people in and around the iHub that I worked closely with.

One of the most notable ways in which I have diverged from a more "traditional" approach to dissertation writing, is in choosing to begin many of my chapters, including this introduction, with a story. This was done as both a wave to the field of narrative ethnography (Tedlock, 1991), as well as a way of generating more immersive access into ethnographic moments for the reader. Most of these stories are adaptations of the fieldnotes I wrote while in Nairobi, and are told in the first person from my perspective, though, as in the case of this introduction, they focus on experiences I had interacting with other people around the iHub. While perhaps I could have written these vignettes positioning the techies I worked with in the first person, as the story's "hero", doing so felt disingenuous. However much I understand about

the iHub and its environs from this research, their experiences are not my own. By telling the stories from my perspective I hope to make my own positionality in these moments transparent and allow the reader to make their own assessment of my subjectivities and the insights I hope to provide. I am a "white foreigner" like many of the ones I discuss in this dissertation. My perspective, and likely my stories, may prove suspect to some readers as a result, particularly those who take the position that it is impossible to write accurately about an experience if you do not share the same identity traits or experiential background as those you are writing about. And Africans in particular have a long history of being written about by outsiders, frequently unfairly or inaccurately often shaped by the very narratives and stereotypes I discuss in this dissertation. I cannot change my identity, but I can continue to use my privilege to help African authors have more prominent platforms from which to write and to be heard, and I can endeavor to be as transparent and reflective as possible about my positionality throughout my own work. On first reading, these vignettes may perhaps appear anecdotal. Instead, they have been chosen because they are "ethnographic moments" (Dolby & Cornbleth, 2001; Nguyên, 2010), in the sense that by looking at them they reveal rich empirical data and trends that I observed in other interactions over the course of the last five years. They are not the complete picture, rather they are jumping off points, moments which offer new insight when we apply a critical analytical lens.

I am also aware of the kind of irony of using stories and narratives to ground analyses of the role of stories and narratives at the iHub. Stories as a format for conveying a point of view have been used as much by those throughout history (frequently those sharing my own racial background) who have misrepresented the continent for their own gains as by those seeking to correct such misrepresentations, though stark power imbalances have long influenced whose stories have gained the largest audience. Furthermore, even in a position that would perhaps be described as peripheral to any of the communities of practice that I am discussing, my stories may also contribute to reinforcing certain narratives, dispelling others, or building new narratives. For example, it is my hope that this dissertation may contribute to building counter-narratives calling for a more realistic perspective of the role of technology in society beyond the currently pervasive Technology is Good Narrative, without falling pretty to purely dystopic narratives. More specifically, I hope this dissertation forces a reevaluation of the dominant narratives around what a successful technology entrepreneur looks, acts, and sounds like, and helps encourage investors to be more reflective of their decision-making processes and their approach to their work in Africa.

CHAPTER 1: A GLOBAL COMMUNITY OF TECHNOLOGY INNOVATORS

It's April 2016 and I'm on my way to attend Nairobi Tech Week. I'm in an Uber with a talkative driver named Brian. We're making our way slowly through the busy city streets; we stop periodically to get through the clogged roundabouts, around a flooded street, and break quickly for matatus (Nairobi's small and chaotic buses) that cut in front of us. Last night it poured so much it felt like the city was drowning. The rainy season is here. Today, we're driving down a road called Lenana and Brian tells me that yesterday a large wall collapsed here killing two people. The remnants of the wall are still visible crumbling on the sidewalk exposing the front of an urban military base. We drive further and get on a large highway up a hill, which offers a beautiful view of downtown Nairobi, known as the Central Business District (CBD). The buildings there seem to have multiplied rapidly in only a few months since I arrived in January; construction cranes and scaffolding are visible everywhere. One particularly imposing half-finished building, glistening in the morning sunlight is the Britam Tower, owned by one of East Africa's largest investment companies. Britam's website announces proudly that when finished it will be the tallest building in Kenya and only the 3rd tallest in Africa.

Finally, we turn off the highway and onto a newly paved road leading to one of Kenya's most well-known private business schools, Strathmore University. The last time I'd been down this road it was not paved, making the ride along it dustier and bumpier than this visit. The main building for the business school is imposing, with three story glass windows, delicate stained-glass detail, and energy provided entirely from the solar panels positioned outside. The building's main hall is furious with activity. People – mostly women – in Twitter, the iHub, and other branded t-shirts run around making sure name tags are complete and speakers arrive with as little delay as possible. They stand in front of tables filled with branded swag, t-shirts, sunglasses, and a plethora of stickers. There is no printed program, I'm told it's only available online or through a new Android app; an impressive decision until the app turns out to be a bit buggy and somewhat slow to access.

I walk towards the main auditorium where the opening ceremony has just begun. To the left of the entrance, a woman wearing a grey Twitter t-shirt interviews a local hardware CEO in front of the bright lights of a video camera; an upright banner bearing the current Twitter slogan #helloworld is visible behind them. Inside the auditorium, the plush red seats and the extra black folding chairs are all filled. Entrepreneurs and programmers, students and investors, women and men, all sit or stand lining the walls watching as one of the iHub's board members speaks on stage. By chance, I've walked in just as he is formally announcing a partnership between the iHub and Twitter called the #SmartCityNairobi challenge consisting of a hackathon that will take place over the course of Tech Week, and will, he announces proudly, provide participants with access to Twitter's API in order solve the city's "transportation problems". On stage behind the speaker are more branded banners proudly displayed. Those for the iHub and Twitter are accompanied by banners for local startups – like the coding school, Moringa School, and a popular events magazine, Up *– and international technology heavyweights, like Oracle, Microsoft, Google, and Merck. Throughout the rest of the week, I will sit in on more discussions than I can remember on topics ranging from fintech, to the role of data science and government in innovation, with panels offering advice on how to pitch to investors, how to identify good programming talent, and how to cultivate a productive startup culture.*

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Together, the array of talks and interviews, pitches and hackathons, panel discussions and furious tweets, banners, branding, and swag that I observed and participated in that week in April made up Nairobi Tech Week in a city on a continent that has not historically come first in the global public imagining of the technological. Even the moniker that has come to be used by some to

describe Nairobi's technology community – 'Silicon Savannah' – more readily evokes the historically rural and people-less image of Africa – a hot grassland full of zebras, acacia trees, and lions – and seems to acknowledge the high-tech only in its mimicry of the home of the seemingly truly technological, *Silicon* Valley. But just as the city of Nairobi embodies the intersection of disrepair and technological improvisation, frustration and hope, modernity and tradition common to other modern African (or for that matter American) metropolises, so Nairobi Tech Week embodied the multiple people and moneys, frustrations and hopes, and diverse array of cultures, ideas, assumptions, stories, and narratives that intersect in Nairobi's community of technology innovators. In their introduction to a special issue of *Public Culture* focused on African cities, the legendary political theorist, Achille Mbembé and his Culture Studies coauthor Sarah Nuttall wrote:

> The obstinacy with which scholars in particular (including African scholars) continue to describe Africa as an object *apart from the world*, or as a failed and incomplete example of something else, perpetually underplays the embeddedness in multiple elsewhere of which the continent actually speaks [emphasis original] (Mbembé & Nuttall, 2004, p. 348).

To the credit of those in this field of research, since they wrote their essay almost 15 years ago, scholars like Seyram Avle (S. Avle, 2011), Jenna Burrell (2012), Jean and John Comaroff (Comaroff & Comaroff, 2002) and many others have followed their advice "to take seriously the fact that Africa like, everywhere else, has its heres, its elsewhere, and its interstices (*emplacement* and *displacement*)" (Mbembé & Nuttall, 2004). I hope to build on this important direction in research by foregrounding the global flows of people and ideas, as well as the complex international hierarchies of legitimacy embedded in the way new technologies are being designed and built in Africa and by whom. Even upon the first visit to the iHub or other material sites of Nairobi's community of technology innovators, it is readily apparent that they are spaces of "flows, of flux, of translocation, with multiple nexuses of entry and exit points" (Mbembé & Nuttall, 2004). The young educated middle class Kenyans who make up the majority of this community are fundamentally connected to multiple 'elsewheres'. Some are 'glocal' in Avle's sense of the word in that they've been educated or trained in the West but have since returned to Kenya to start their own companies (S. Avle, 2011). Others have returned to, or never left, Nairobi and work for large Western companies like Google or IBM or work with American entrepreneurs, Chinese investors, or South African engineers. Even apart from such physical engagement, they are connected to other innovators throughout Africa and around the globe through the information they consume and produce. Through a rich communicative ecology of in-person visits and shared online platforms, YouTube videos and TED talks, news articles, entrepreneur biographies, and media narratives, members of the iHub are connected to the practices, stories, and values of their counterparts abroad. Moreover, through events like Tech Week, the #SmartCityNairobi hackathon, and spaces like the iHub and other coworking spaces, Kenyan innovators participate in events and practices that would be recognizable as "transnationally legible emblems of innovation" (Irani. 2015, p. 801) to anyone building or hoping to build a startup anywhere else in the world.

In later chapters, I will draw attention to the spaces of difference and inequality, prejudice and conflict, the unique challenges that Kenyan entrepreneurs face, and the often-unbalanced negotiations they are forced to enter into as a result. But in this chapter, my goal is different. Here, I intend to build the foundation necessary for that discussion to be productive and analytically useful. To do so, I will use the case of the practice of technology innovation in Silicon Valley, to introduce and illustrate the theoretical framework through which I analyze the experiences of Kenyan innovators in the subsequent chapters. This framework combines and builds on "community of practice" (Lave & Wenger, 1991) theory and narrative theory. I will

outline the characteristics of a community of practice that formed in Silicon Valley, the Silicon Valley Community of Technology Innovators, and then make the case that the particular approach to innovation that originated there has come to be adopted in spaces far removed from California, gradually forming a Global Community of Technology Innovators.

Communities of Practice Theory

In order to foreground the empirical data I collected about the lived experiences of Kenyan innovators over theories that are often embedded in the socio-political norms and ideologies of Western countries, I chose to adopt a grounded theory approach (Charmaz & Belgrave, 2007; Strauss & Corbin, 1997). As such, the processes of data collection and data analysis were intermingled, while theory building largely came in the later stages of the fieldwork and into the writing process. And while I have tried to let my analytical framework emerge from the data, I nonetheless still bring my own subjectivities to this study informed by my own identities, experiences, and grounding in the field of communication. In the end, I found adapting and combining two existing theories – communities of practice theory and narrative theory – was the best way to makes sense of the complex array of socio-political pressures, financial incentives, inter-cultural dynamics, ideologies, and communicative practices around Kenyan technology innovators that I observed. I will begin here by outlining communities of practice theory as it is the foundation on which my analytical framework is built, but I will wait to introduce narrative theory until later in the chapter when I believe its utility will become the clearest.

Communities of practice theory was originally proposed by social anthropologist, Jean Lave, and educational theorist, Etienne Wenger, in their publication *Situated Learning: Legitimate Peripheral Participation* (1991) as an analytical tool to help education scholars foreground the social and not just the psychological in the process of how people learn. Their focus in this publication was less on the communities as a whole and more on the learners and how *professional* communities "induct and train new members, and perpetuate set routines for accomplishing specific tasks" (Meyerhoff & Strycharz, 2013, p. 528). This might include nurses learning how to draw blood, lawyers learning the procedures for addressing a judge, or…entrepreneurs learning how to pitch their ideas to an investor.

While they spent a great deal of time laying out how new members learned a community's practices, it was Wenger's publication seven years later, *Communities of practice: Learning, meaning, and identity* (Wenger, 1998)*,* that helped to refine the theory around communities of practice themselves. In it, he laid out in more specific detail what separates a community *of practice* from any other community or social configuration. The distinct characteristics, he argued, were threefold. Those involved in a community of practice needed to have "*mutual engagement, a joint enterprise, and a shared repertoire of ways of doing thing*s" (Wenger 1998, p. 49). In this conceptualization, members of a community of practice are not united around a particular locality or identity or even social or political interest, as members of other communities might be, but instead are mutually engaged in a *shared practice*. *Practice*, in this instance, involves doing (as in doing your homework or practicing drawing blood), but is also informed by the social context in which practice is embedded. This social context, Wenger argues, is what gives practice meaning (Wenger 1998, p. 47). Practices here include both those that are *explicit* – things like contracts and tools, specific procedures and individual roles – and those that are *unspoken* – things like subtle cues, tactic conventions, shared understandings, as well as "underlying assumptions and shared world views" (Wenger, 1998, p. 47). Members of a community of practice are in turn *mutually engaged* in this shared endeavor. Engagement, for Wenger, goes beyond being involved in a practice; it is also "being included in what matters" (Wenger, 1998, p. 74) to the community. Defining a community around those mutually engaged in a shared practice rather than around a particular shared identity, for example, also means that

the group is more likely to be a heterogeneous (Wenger, 1998, p. 75), often requiring varied individuals with varied skills and often conflicting opinions and world views to perform a given practice to its full extent. For example, editors, journalists, designers, researchers, and interns alike may all be members of a community of practice around publishing a physical or online newspaper. Together, they are mutually engaged in a *joint enterprise*, which, for Wenger, is not joint "in that everybody believes the same thing or agrees with everything," but rather is joint in that it is "commonly negotiated" (Wenger, 1998, p. 78). Members must together decide on how the practice will be carried out. Moreover, that process of negotiation is not necessarily a peaceful one, a community of practice does not imply that everyone has commonly held beliefs about how and why a practice is performed, just that they jointly negotiate how that practice is carried out. As a result, participation in a community of practice can have a positive effect creating a "sense of community" (McMillan & Chavis, 1986) and meaning, but it can *also* be detrimental, leading individuals to feel pressured to conform to a particular form of practice or to feel excluded from participating in 'what matters'. Finally, Wenger adds that a community of practice must have a *shared repertoire* made up of "routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions, or concepts that the community has produced or adopted in the course of its existence, and which have become part of its practice" (Wenger 1998, p. 82). The inclusion in this final section of "words" and "stories" has made this analytical framework an appealing one for linguists, and it is where I believe the integration of a communications perspective, and narrative theory in particular, can be the most useful.

Since their original publications in 1991 and 1998, Lave and Wenger's theory has been adopted widely in academia, particularly in the fields of management, education, and linguistics. But, aided in part by Wenger's own applied work in Paolo Alto and his 2002 publication, *Cultivating Communities of Practice: A Guide to Knowledge Management* (Wenger, McDermott, & Snyder, 2002), it has also been adopted by management practitioners as a way to enhance productivity and knowledge sharing within organizations by *purposefully* creating communities of practice. These practitioners as well as some of their academic counterparts tended to apply communities of practice theory uncritically, as a prescriptive tool rather than an analytical one. This instrumentalist approach – taking a community of practice as an *aspiration* entity to be fostered and encouraged rather than a previously existing social entity to be understood – ignored the richest, most analytically useful, parts of the original theory (Amin & Roberts, 2008; Contu & Willmott, 2003; Roberts, 2006). As a result of this misinterpretation, Amin and Roberts have argued that "the original emphasis on context, process, social interaction, material practice, ambiguity, disagreement – in short, the frequently idiosyncratic and always performative nature of learning – is being lost" (Amin & Roberts, 2008, p. 353). In a piece published in 2008, Jean Lave herself lamented this misapplication of their theory. "Projects that undertake to start a community of practice seem to rely on assumptions that making this new thing does not involve already existing social relations…the main point is that they always already exist…[participants] are already members of multiple communities of practicing, including some that may exclude each other" (Lave, 2008, 291).

As a result of this imprecise adoption of the theory, some believe that the concept of a community of practice is too broad to be useful in certain disciplines, or that it is in need of revitalization by refocusing on certain aspects of the original framework that have been overlooked (Contu & Willmott, 2003; Henderson, 2015; Roberts, 2006). In choosing to adopt the community of practice framework, I reject the instrumentalist interpretation in favor of heeding such calls and embracing the theory's original analytical purpose. As such, the communities of practice I discuss going forward are not presented as communities to be desired and sought after, rather they are often fraught with conflict. In fact, for the purposes of developing an analytical framework that could be useful for understanding the experiences of Kenyan technology entrepreneurs and designers looking to gain legitimacy for their work, the most useful, and among the most overlooked aspects of Lave and Wenger's theory, are the incorporation of conflict and

heterogeneity as well as the power relations between existing members and new members into their original framework.

In 2008, Lave wrote that she believed their theory was all too often "read as painting a view of social life as closed, harmonious, and homogeneous," (Lave, 2008, 288) and that most community of practice research had too often ignored issues of "social class or race or ethnicity" (Lave, 2008, 291). In focusing on the experiences of Kenyan innovators and the relationships with investors and partner – who often come from historically advantaged regions of the world, like Europe and the US – the role of power imbalances and social hierarchies become impossible to overlook. In this, I take inspiration from the concept of "postcolonial computing" introduced by Lilly Irani and her coauthors writing in the field of human computer interaction. For them postcolonial computing was an attempt to re-center development discourse around "questions of power, authority, legitimacy, participation, and intelligibility in the context of cultural encounters" (Irani, Vertesi, Dourish, Philip, & Grinter, 2010, 1). I believe the community of practice framework can benefit from the same re-centering. In this dissertation, I intend to dispel the assumption that communities of practice are necessarily harmonious, by drawing attention to the conflict, the hierarchies of power, and the frequent power imbalances embedded in the experiences of new technology innovators trying to gain legitimacy. While, as Roberts has argued, Lave and Wenger may have under-theorized the role of power in the experiences of new community participants (Roberts, 2006), others have subsequently demonstrated in more detail how class, gender, and ethnicity can influence access to communities of practice, "truncating possibilities" for disadvantaged individuals "while for others, privileged access to these practices is enabled" (Contu & Willmott, 2003, 283). With this more critical, postcolonial computing mindset in place, communities of practice theory becomes a useful tool with which to analyze the work being done by technology innovators in and around the iHub in Kenya and to foreground the challenges and the hierarchies of power with which they have to contend.

Other scholars similarly looking at digital labor or technology producers have chosen other conceptual frameworks like "cultures" or "ecosystems" or "communities" more broadly. Gideon Kunda, for example, conceptualized both the work inside an unnamed high-tech company and the products they produced as manifestations of "culture" (Kunda, 2009). Others have written about "hacker culture" (Palmas & Von Busch, 2006; Thomas, 2002) or "innovation culture" (Chan, 2014), or the "high-technology culture" particular to Silicon Valley (Rogers & Larsen, 1984; Sprague & Ruud, 1988; Weiss & Delbecq, 1987) or have described tech hubs like the iHub or national-level approaches to technology innovation as "ecosystems" (Feld, 2012; Stangler & Bell-Masterson, 2015; Wong, 2006) "ecologies" (Munroe & Westwind, 2009) or "habitats" (Lee, 2000). I have even done so myself in a previous publication referring to the "organizational culture" at the iHub and the "startup ecosystem" in Nairobi (Marchant, 2017). But for this dissertation and as a result of the new fieldwork I conducted, "culture" felt too broad. While for example, innovation culture certainly plays a part in the work around the iHub, I wanted to focus on the practice of innovating new technologies at startups, and not on other kinds of innovative work like those performed in Kenya's informal economy by road-side jua-kali salespeople or even those enacted at larger companies. Even "Silicon Valley culture", while a useful way in which to look at the culture around the particular Silicon Valley approach to technology innovation, and one that I draw from later on (English-Lueck, 2002; Haines, 2014), is too broad a concept with which to understand the profoundly multi-cultural experiences of Kenyan innovators.

By contrast, "ecosystem" is too narrow. The metaphor of an ecosystem connotes a finely balanced network of interconnected systems and actors. Often in biological ecosystems changing any one of the actors, or even introducing new actors can 'throw off' the ecosystem's balance. Seeing the plethora of international, regional, and Kenyan actors, ideas, organizations, and data coming through the iHub, changing all the time, it no longer felt like an accurate metaphor to think of the iHub's or even Nairobi's innovators as acting in any kind of isolated ecosystem.

"Communities" also lacks specificity for my purposes. In her encyclopedia entry on the subject, for example, Karen Tracy, outlined no less than five different forms of use for the term (Tracy, 2009), ranging from a geographically-situated community to an identity community to a political community and so on. A community is also a term that generates quite positive imaginings, feelings of belonging and kinship – a "purr word" as Underwood and Frey put it (2007), something I believe that has contributed to the misapplication of communities of practice theory. However, unlike other kinds of communities, communities of practice, as I have shown above, are inherently heterogeneous and defined by the process of jointly negotiating through such difference. As the linguist Mary Bucholtz wrote in her study of "nerd girls" in a high school, "by defining the community as a group of people oriented to the same practice, though not necessarily in the same way, the community of practice model treats difference and conflict, not uniformity and consensus, as the ordinary state of affairs" (1999, p. 210).

Additionally, within linguistics and communications, scholars often employ the narrower community frameworks of "speech" (Dorian, 1982; Gumperz, 1997) or "discourse" communities (Luck, 2003; Swales, 1987) for their ability to accentuate the role of language. But while communicative tools like storytelling and narratives will feature prominently in this study, they comprise just one component of the whole "repertoire", as Wagner calls it, that these innovators share. While I have found communicative practices to comprise an important part of that repertoire and one that has been underexplored by researchers of communities of practice, it is not the primary "joint enterprise" around which the work in this community revolves. While innovators in Nairobi frequently tell stories, they more often talk about designing technology or building startups as the main practice in which they are engaged.

In the end, I believe the communities of practice theory is the most analytically useful tool for this study for three main reasons: 1) Its obvious focus on the particular practice in which its members are mutually engaged; 2) its foregrounding of the role of language without its fetishization of it; and 3) its integration of the potentially conflictual nature of "jointly negotiating" practice and legitimacy into its framework for analysis.

By adopting this framework, I am also taking to heart Lave and Wenger's perspective that individuals are all members of multiple communities of practice simultaneously. As Wenger has explained, "At home, at work, at school, in our hobbies – we belong to several communities of practice at any given time" (Wenger 1998, p.6). Those involved in the practice of technology innovation in Nairobi are simultaneously involved in numerous communities. They may also be members of families, religious institutions, or sports teams outside of the iHub, or may engage with particular interest communities around specific programming languages or managerial skills, or belong to particular identity, political, or tribal communities. However, as Lave has pointed out, some of these communities of practice may exclude each other" (Lave, 2008, 291). Membership in multiple communities – be they communities of practice or otherwise – can create tensions, conflicting loyalties, and misunderstandings. An individual may be at the center of some communities while on the periphery of others, and membership in some may involve more upkeep and consistent involvement than in others.

In the next section, I will introduce the case of a community of practice that emerged around the practice of technology design and production in Silicon Valley for a dual purpose: 1) To flush out my theoretical framework more thoroughly, including introducing the narrative theory component; and 2) to lay out the characteristics of the community of practice that has most greatly influenced the practice of technology innovation on a global scale.

Silicon Valley's Community of Practice

As my own primary research was not conducted in California, I leave the comprehensive empirically-grounded analysis of innovation in Silicon Valley to others (English-Lueck, 2002;

Haines, 2014; Rogers & Larsen, 1984; Saxenian, 1996; Studholme, 2014). Instead, my intention here is to draw on this rich body of research as well as primary sources, including material from Silicon Valley organizations and the media outlets that cover them, to outline the characteristics of a community of practice that I believe has formed around technology innovation in Silicon and to build and illustrate my theoretical framework. To do so, I will outline the joint enterprise around which the members of Silicon Valley's Community of Technology Innovators (CTI) are engaged, and the complex repertoire of practices that bring this community's members together. While seemingly a detour from my Kenyan fieldsite, I believe it is a necessary one in order to fully grasp the complex array of meaning embedded in the practice and narratives around Kenya's own technology innovators.

In 1984, the same year as the release of Apple's iconic IIe that transformed personal computing, Everett Rogers, a communications theorist best known for his diffusion of innovation theory, and his coauthor Judith Larsen, published a book called *Silicon Valley fever: Growth of high-technology culture* in which they talk about the history of Silicon Valley and outlined what they believed characterized the work being done there in the 1980s. In it, they argue that the "high-technology industry" as they described it included the following characteristics: "1) Highly skilled employees, many of whom are scientists and engineers; 2) a fast rate of growth; 3) a high ratio of R&D expenditure to sales; and 4) a worldwide market for its products" (Rogers & Larsen 1984, p. 29). While these characteristics largely still hold, Silicon Valley has changed significantly since the 1980s. The case of Uber – the rideshare application valued at over ten billion dollars and one of the most controversial companies in contemporary Silicon Valley – may best illustrate these changes and will give context to the discussion of Silicon Valley's community of practice going forward.

As of March 2018, the origin story on Uber's website described how the company's founders, Travis Kalanick and Garrett Camp, apparently came up with the idea for Uber after having trouble hailing a cab "on a snowy Paris evening in 2008". Of course, the story as it is presented in outlets like *Business Insider*, *Vanity Fair*, and *Tech Crunch* shows a somewhat more complicated picture. In this version, Kalanick and Camp were not just disgruntled cab riders, they were serial entrepreneurs. Kalanick had dropped out of UCLA to join an internet search startup called Scour that ultimately failed in 2000; the next year he went on to found the peer-to-peer file sharing startup, RedSwoosh, which he sold in 2007 for $23 million (Hartmans & McAlone, 2016). Garrett Camp had similarly completed a profitable venture, selling the popular search startup, StumbleUpon, to eBay for $75 million in 2007 (Swisher, 2014). Both were "flush with cash" (Swisher, 2014) and looking for their next venture. By 2009, they, along with a handful of others - Oscar Salazar and Conrad Whelan among them – had founded and launched UberCab in San Francisco, renaming it Uber in 2010 after complaints from local cab companies. Uber's early iteration targeted the luxury black cab market offering rides at 1.5 times the price of other black cabs in the city (Chokkattu & Crook, 2014). Then came a rush of funding, in the form of venture capital investments, over the next few years: $1.25 million in October 2010 from friends of the Kalanick and cofounder of the famously collapsed music sharing platform, Napster, $11 million in February 2011, and $32 million by December that year with high-profile funders like Amazon's Jeff Bezos (Hartmans & McAlone, 2016). In May 2011, they began their national expansion and launched in New York, and by December of that year they'd launched in their first non-American city, Paris. By August 2013, they had launched UberX, their cheaper service competing more directly with the non-luxury cab markets, had opened in India and Africa (launching in Kenya in 2015), and had raised another round of funding, this time for $258 million from Google Ventures, and was valued at $3.76 billion. In just six years the company had attained the mythical unicorn status – when a startup is valued at over $1 billion (Hartmans & McAlone, 2016).

In the course of their rapid expansion, they frequently used the enormous financial support they had received to undercut existing taxi infrastructures, creating enemies and lawsuits

along the way, both within the US (e.g. in Austin and New York) and abroad (e.g. in the UK, the Germany, and India). By 2016, Uber's promotional strategy had changed too, moving from targeting elite customers to instead trying to show how its product was changing the world for the better. While in 2010, Kalanick was often quoted in the company's early years as saying that Uber was working to show that "everyone could ride like a millionaire" (Swisher, 2014), by 2016, Uber had adopted the quite different byline, "creating possibilities for riders, drivers, and cities".Uber's story echoes much of Rogers and Larsen's original description of Silicon Valley. Camp was a trained engineer and they employed others to improve the smartphone application around which their service revolved; they had an extremely fast rate of growth (likely much faster than Rogers and Larsen could have anticipated); their product was continuously changing; and they expanded into a global market, though often to great resistance.

But the story of Uber diverges from the companies that Rogers and Larsen were characterizing in important ways. While many of the companies being built in Silicon Valley in the 1980s operated in clearly technological industries like silicon processors and consumer computers, Uber was instead using a technology innovation to 'disrupt' the decidedly non-technological industry of taxi services. Moreover, Uber's story illustrates how many of the characteristics of 1980s Silicon Valley companies have grown more extreme in the ensuing decades. While venture capitalism – the particularly risky approach to corporate financing – has long been closely intertwined with Silicon Valley and can even be said to have been shaped by the particularly rapid growth of high technology companies there (Kenney & Florida, 2000), the scale of venture capital investment in Uber is extreme by comparison. Technology startups did not begin to attain the high valuation of a $1 billion-dollar unicorn until the end of the first decade of the 21st century, and now some, like Uber, are attaining the even more extreme valuation of $10 billion, and graduating from the status of 'unicorn' to 'decacorn'. Through the story of Uber, the join enterprise and share repertoires of practice that defines Silicon Valley's community of technology innovators come into focus.

Joint enterprise

Ultimately, the "joint enterprise" in Silicon Valley's CTI has changed very little since Rogers and Larsen were writing. They still *design new technologies and build companies around them through which they can sell the technologies they design*. But technology innovation in and of itself is hardly a practice that is unique to Silicon Valley, from fire to airplanes to bombs, people have been inventing new technologies for nearly all of human history. And while studies problematizing the nature of technology, particularly those from history of science and science and technology studies are fascinating (Goody, 1980; Richards, 2009), for the purposes of this investigation I am narrowing the scope of my working definition of technology to specifically what Rogers and Larsen referred to as "high-technology": *electronic hardware like computers and semiconductors, and the virtual software, programs and operating systems, that runs on the back of the hardware*. Even with this narrower definition, those who could be said to be "innovating" such technologies can run the gamut from kids tinkering with circuit boards for a class science project, to large scale advancement in factory machinery for clothing or airplane production. What I believe sets the particularly Silicon Valley approach to technology innovation apart from these others is twofold: 1) the pace of innovation and 2) the funding structure around it.

The pace of innovation

Returning to Rogers and Larsen's description of the "high-technology industry", one of the things that they believed distinguished this industry from others was the pace of technological advancements. "Not only is the technology very advanced [in this industry]," they wrote, "but it is also continuously changing, at a much faster rate of progress than other industries (Rogers &

Larsen 1984, p. 29). For their book, they interviewed Mark Larsen, an Intel sales manager at the time, who agreed with this assessment. "If you stop for a week in this industry, I swear you would lose your technological state of the art knowledge. There is nothing about a two-year-old product that I couldn't divulge to my competitors. A one-year-old product, you might not be able to tell everything, but a two-year-old is old" (Rogers & Larsen 50). In part, this was to do with the advancements in physics that could allow integrated circuits to get smaller and more powerful. But today, even though many of the most successful Silicon Valley startups do not themselves use silicon or build physical computer processors, the rapid pace of innovation in Silicon Valley continues seemingly unabated in large part because it no longer results only from the speed with which hardware processing power advances, but also from the speed with which investors' and consumers' attention shifts in the modern "attention economy" (Davenport & Beck, 2001). As information and communications scholars Davenport and Beck wrote in their 2001 book *The Attention Economy: Understanding the New Currency of Business:*

> In this new economy, capital, labor, information, and knowledge are all in plentiful supply. It's easy to start a business, to get access to customers and markets, to develop a strategy to put up a Web site, to design ads and commercials. What's in short supply is human attention. Telecommunications bandwidth is not a problem, but human bandwidth is (Davenport & Beck, 2001, p2).

Like Uber, many of the most recent innovations to come out of Silicon Valley have been more about bringing the utility of technological platforms to *new* industry, from taxis to vacation rentals (AribnB) to cooking (Blue Apron) and more. As Marina Gorbis, the self-described futurist wrote in a 2015 opinion piece in *The New York Times*, "technologies are emerging faster than our institutional capacity to adapt to them. In only six years of operation, Uber has upended the taxi industry in every city where it operates. Airbnb is more highly valued than the Hyatt and Wyndham combined!" (Gorbis, 2015).

The structure of funding

What likely also intensifies the pressure to innovate so quickly and to keep up-to-date with the latest Silicon Valley CTI trends is also the commercial approach and venture capital funding structure around innovation in Silicon Valley. Like "techies" the world over, those in Silicon Valley's CTI practice their trade by writing new code or building new hardware, but they do so in search of the invention of *commercial* products, "useful, profitable products" (Moore & Davis, 2004, p.13) to be specific. Innovating new technology in a commercial setting is markedly different from doing so for the love of technology or curiosity of how things work common to many techies. In 2004, Gordon Moore, the renowned engineer and co-founder of Intel, coauthored a book chapter with Kevin Davis called "Learning the Silicon Valley Way". In it, they write about how these commercial objectives differentiate Silicon Valley's practice from that of scientists.

> The path to the success for Fairchild and Intel required orienting the process of scientific discovery towards *profit-making goals* [emphasis added]. …To do science for commercial ends, scientists had to move away from the academic approach of lingering on understanding the basic and abstract features of phenomena. Making sure that something worked in practice (even though not necessarily optimally) and at proper costs was and remains more important. (Moore & Davis 2004, p. 15)

To "innovate technology" in the Silicon Valley CTI, is not just about designing and building something innovative from circuits and wires or software, it is about doing so in a decidedly *commercial* way.

What further sets Silicon Valley's approach apart from other sites of commercial innovation, is the role of venture capital investing. "Venture capital," as Rogers and Larsen argued, "goes hand-in-hand with entrepreneurship and one cannot understand a high-tech system like Silicon Valley without understanding how venture capitalists operate" (Rogers & Larsen, 1984, p. 62). In fact, urban and human development scholars, Kenney and Florida, have made the case that venture capital as it currently exists evolved through its relationship with the high-tech industries in the Bay Area.

> In contrast to other concentrations of venture capital, such as New York City and Chicago, in Silicon Valley (as in Boston) venture capital evolved in tandem with its technological and entrepreneurial base. …Venture capital is now an institutional feature of Silicon Valley and a critical node in a network of institutions that evolved to encourage new form formation" (Kenney & Florida 2000, p. 98-99).

Venture capital investing, unlike other types of investing such as small business loans from banks, brings a high-risk high-reward mentality. Investors are willing to invest in young, often very young, companies based only on the promise of an entrepreneur's idea as long as they believe the company has a high value in its potential for growth. "During the start-up phase," wrote Kenney and Florida, "the firm often has no income and is spending money to establish itself" (Kenney & Florida 2000, p. 102). As a result, an investor's assessment of the *value* of a startup goes far beyond the actual revenue that a company brings in. For example, most of the companies, including Uber, that have become unicorns were not bringing in anything near billions of dollars of revenue when they received those valuations. Venture capital investors are able to take such risks because they receive equity, or ownership, in the company in which they are investing (which often in turn leads to a seat on the board and a say in critical decisions), and because they invest in many startups at once anticipating that some will fail, betting on big successes to make up the difference. This approach is far from the practices of more traditional investors like banks that require a more tangible form of collateral than a promising "idea".

Capitalist systems in general have a clearly powerful drive to expand and to accumulate greater wealth. As the computer scientist, David Kotz has written, "capitalists seek to increase their profits by expanding the scale of operations" (Kotz, 2003). But the rate of technological advancement in Silicon Valley coupled with the venture capitalists' willingness to take risks created pressures on companies to expand rapidly, as Uber did, beyond their municipal, national, and regional borders, in their need to seek out ever larger markets. These combined pressures make sense when we return briefly to Rogers and Larsen's assessment in the 1980s of the characteristics of Silicon Valley's "high-technology industry", that included not just highly skilled scientists and engineers but also "*a worldwide market for its products* [emphasis added]" (Rogers & Larsen 1984, p. 29). As they illustrated, outside of the field of technology, there were very few areas in the 1980s where a venture capitalist would consider the rewards high enough to take the risks associated with such early stage investments. Being on the cutting edge of innovation meant that companies building them could appeal to foreign markets, even in the 1980s. But while companies growing in the 1980s, like Intel and Hewlett Packard, were expanding to Europe and Japan, the pace and breadth of expansion in the contemporary environment has accelerated. It took Uber just a year and a half from launching in San Francisco before it opened abroad, expanding globally in less than two years to even African markets, markets that were well-below the radar of Silicon Valley innovators in the 1980s.

It is no wonder, that in my attempt to characterize the practices of Silicon Valley's CTI I started with the story of a startup. Using the definition of those within the community, a startup is not just a new company, debatably in its first 5-7 years of existence, it is also working – in the words of Neil Blumenthal, the cofounder of the 'disruptive' eye glasses startup, Warby Parker – "to solve a problem where the solution is not obvious and success not guaranteed" (Robehmed, 2013). This emphasis on risk and exponential growth is what sets startups apart from other new small businesses that expect more linear growth prospects. Leaner than other more established tech companies, and able to form around a single new idea or to 'pivot' when a new idea or new piece of technology becomes more lucrative or more productive, the startup is the organizational setting in which the practice of technology innovation in Silicon Valley takes place. In retelling the story of his days at Fairchild Semiconductors, Gordon Moore talks about how the pace of new company formation developed in those early years.

> At Fairchild, we were mining an extremely rich vein of technology, but our little company was too small to handle all that we discovered. The net result was what I call the 'Silicon Valley effect': every new idea that came along created at least one new company. Literally dozens of new companies came out of the Fairchild experience in just the first decade. Some we encouraged as a means of gaining a supplier, others we suffered as future competitors and drains on our resources. (Moore & Davis, 2004, p. 19)

Since the days of Fairchild Semiconductors, Silicon Valley's high-tech industry has evolved around nurturing and supporting the growth of these fledgling companies. Building successful startups has become big business—and in many eyes, the only business for building the necessary newness into technology. Icons of Silicon Valley's contemporary community continue to celebrate the startup and its ability to adapt and evolve in a way that larger, more established, companies could not. Indeed, the revolution in personal computing came about not only from large reputable companies like IBM, but also from the upstart, Apple Computers; the burgeoning of social media, which shapes a significant portion of how people the world over experience the internet today, came not from an established company, but from one built by a college student, Mark Zuckerberg. In addition to actually "innovating technology", startups – building them, running them, investing in them, incubating and nurturing, expanding and selling them – are the *enterprises* in which members of Silicon Valley's CTI are *jointly* engaged. As a single organizational structure, the startup meets the needs of both Silicon Valley's pace of innovation and its corporate global-scale-oriented funding structure. It is the entity that binds this community through *practice* and differentiates it from other technology innovators.

Around the startups a flurry of individuals with diverse jobs and skillsets gather. Engineers and programmers tinkering with ideas in their proverbial garages or newfangled coworking spaces, create, test, and improve ideas for new companies; entrepreneurs work with mentors and advisors to build the startups around these ideas, pitching them often first to their friends and family then ultimately to venture capital investors. With early seed and eventually Series A and B funding, entrepreneurs work with their team to scale their product and turn their company toward an ever-increasing market. Their work is in turn supported by other individuals performing a range of roles from marketers to market researchers, coworking space managers to startup competition coordinators,. While customers and end-users play the important function of providing a consumer base for these new products, unless they are directly involved in the design process they are not members of this community of practice. More so than marketing specialists or even investors, the *programmer* and, perhaps even more so, the *entrepreneur*, are at the center of activity in this community.

Shared repertoire: Material culture

In Wenger's 1998 framework, in addition to centering around a joint enterprise, members of a community of practice share a common repertoire of other practices that render them recognizable as members of this community or as *not* members of *other* communities. Among this repertoire, he includes "routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions, or concepts that the community has produced or adopted in the course of its existence, and which have become part of its practice" (Wenger 1998, p. 82). For example, in the work of linguist Mary Bucholtz looking at a group of 'nerd girls' in high school, she showed how they developed a repertoire of practices in order to distinguish themselves from the community of "cool girls".

> Where cool girls aim for either cuteness or sophistication in their personal style, nerd girls aim for silliness. Cool girls play soccer or basketball; nerd girls play badminton. Cool girls read fashion magazines; nerd girls read novels. …Cool girls wear pastels or dark tones; nerd girls wear bright primary colors (Bucholtz, 1999, p.213).

Among communications scholars, some of the more tangible elements of Wenger's repertoire – from the choice of dress to the choice of space – are parts of the "material culture" of a community (Pratt, 2002). Over the years, while a decidedly larger community of practice than Bucholtz's 'nerd girls', Silicon Valley's innovators have developed their own repertoire of practices, from their choice of dress, to the design of their office spaces, the organization of community events, and the speech practices that they share. Often these choices are made to construct an environment that enables creativity and the generation of new ideas or that signifies casual competence.

In terms of dress, Silicon Valley modern-day innovators often have a very distinctive style; they are known for sporting a casual laid-back dress sense, more frequently seen wearing jeans and a t-shirt than a suit and tie. Observers of Mark Zuckerberg's visit to Africa for example, noted his choice of informal dress throughout most of his trip (except when meeting with Nigerian president Muhammadu Buhari). In part, like the Bucholtz's 'nerd girls', this choice of style seemed to be a purposeful rejection of the stodgy tired approach to business that Silicon Valley wanted to move away from. In fact, Silicon Valley is often credited with the introduction of "business casual" to the wider American workforce. Last year in *The Atlantic*, for example, Deirdre Clemente wrote that "In Silicon Valley in the mid-1980s, the people weren't interested in adhering to old norms. Businesses there put an emphasis on streamlining management decisions and shortening the lag time between planning and implementation. …Restrictive clothing worn for appearances' sake was inefficient, and Silicon Valley was all about efficiency" (Clemente, 2017). In other words, the rapid speed of innovation translated to a simple choice of clothing that could signify both a relaxed self-confidence and that you weren't "wasting precious time on something as vain as fashion" (Q. Kim, 2014).

This desire to break with the traditional mold of American business culture is similarly evident in Silicon Valley's choice of spaces of work. The material manifestation of this has been the open plan office space where startup employees are seemingly able to bump into one another, bounce around ideas, and have space to think freely. Incubators, co-working spaces, and even the individual offices of more established tech companies are similarly structured in this "open concept" manner. Such layouts continue to be used even as companies get older and leave the early stage startup phase as in the case of the new office Facebook built in 2015 (Frankel, 2015). Seemingly a new phenomenon associated with modern digital labor at tech companies, the open plan office in Silicon Valley actually dates back to the 1980s, described in Rogers and Larsen's description of the Valley as helping growing tech companies retain their "entrepreneurial spirit"

(1984). Andy Pratt, in his study of the culture around spaces for new media production, describes some of the buildings of the technology companies in California that he visited. "There was clearly attention given to the aesthetics of buildings," he wrote. "The stock aesthetic was of 'industrial chic', or 'raw space'; in other words, an un-redecorated industrial building. The common layout was an open plan office scattered with grouped open desks upon which individuals' computers were placed" (Pratt 2002, p.41).

Other ways of doing things that make up Silicon Valley's repertoire include its events, trainings, and spaces, including things like conferences and trade shows (e.g. South by Southwest, Tech Crunch Disrupt and Developer Week), incubators (Y-Combinator), accelerators (AngelPad), and coworking spaces (WeWork). Each of these are sites where Silicon Valley technology innovators can meet, network, get mentorship and training, raise funds, pitch ideas, and build their companies. Like Nairobi's Tech Week, such events have gradually become what communications scholar Lilly Irani has called "transnationally legibly emblems of innovation" (Irani. 2015, p. 801), spaces where the community's members learn and reaffirm the community's norms, values, and practices.

Shared repertoire: Communicative ecology

Of all the practices in the shared repertoire of those in Silicon Valley's community (of which there are many beyond those I've sketched out above), the ones I now want to pay particular attention to – and where I believe this research can most contribute to communities of practice theory – are the communicative. In Wenger's 1998 publication, he added depth to their earlier definition of the shared repertoire, notably adding more communicative dimensions beyond just the "words" and "stories" he had earlier included. This new extended version included: "The rapid flood of information and propagation of innovation within the community," "local lore, shared stories, inside jokes, knowing laughter," "jargon and shortcuts to communication as well as the ease of producing new ones," and "a shared discourse reflecting a certain perspective on the world" (Wenger 1998, p. 125). Linguists have understandably built on Wenger's work and studied the very detailed speech patterns – the inflections, the accents, the slang – that help to differentiate members of one group from another. Penelope Eckert, credited as one of the first to bring the community of practice framework to linguistics, for example, showed how groups of high school 'jocks' and 'burnouts' used subtle differentiations in speech patterns to signal which community they belonged to (Eckert, 1989), while Cecelia Cutler showed how a white upper middle class New York teenager adopted the speech patterns and clothes more common of black hip hop culture in the process of negotiating his identity and figuring out where he belonged in New York's diverse metropolis (C. A. Cutler, 1999).

Like these high school communities, members of Silicon Valley's CTI use language to differentiate themselves from other communities of practice. Often this takes the form of jargon. Jargon can be an especially clear determinant of who is inside and who it outside of a professional community. Someone outside of the medical profession, for example, can easily get lost in all the aspirating, coding, and irradiating, the hysterectomies, the biopsies, and the laparoscopies that take place on a daily basis. Jargon in Silicon Valley has become so ingrained, that with all the "pitching," "exiting," and "disrupting" that goes on, it can be challenging to make sense of conversations in the community without them. Even for those in overlapping fields, like management and computer science, the jargon can be impenetrable at first (Kopp & Ganz, 2016, loc 112).

Yet while such micro-communication patterns are fascinating, I echo other communications scholars in arguing that they are insufficient in order to fully understand the role communications plays in communities. Instead, the diverse array of media and mediums, speech patterns and speech styles, in-person contact, and community narratives must be incorporated in order to begin to understand how communities operate (Davison, Ou, Martinsons, Zhao, & Du,

2014; Klaebe & Foth, 2006). Media anthropologist, Jo Tacchi, and her coauthors, call this whole suit of communicative tools and methods at a community's disposal its "*communicative ecology*" (Tacchi, Slater, & Hearn 2003). They suggest looking beyond traditional media outlets and at "everything that could count as a medium of communication" (Tacchi, Slater, & Hearn 2003, p. 16).

> That is, not just press, broadcast or telecom but also roads, buses and trains, visits to neighbours, and public and private places where people meet to communicate. …to look at how people combine different media. We do not use media, including internet, in isolation, but are very skillful in using them together (Tacchi, Slater, & Hearn 2003, p. 16)

In Silicon Valley's community of practice, this communicative ecology can include emails sent to colleagues or pitch decks sent to potential investors, inspirational speeches given at TED conferences or rumors spread across open plan offices. It can include chats about code on GitHub, interviews given around a new product release to *Tech Crunch*, or memoirs offering advice for aspiring entrepreneurs. It is comprised of not just the mediums of communication, but also the audiences, forms, styles, genres, and content. In a community of practice, the community and the process of jointly negotiating the enterprise in which it is engaged can influence which medium and genres are considered acceptable forms of communication, by whom, to whom, and for what purpose.

In research around communities of practice, the integration of communications into the theoretical models have tended to be dominated by linguists and a focus on the more micro-communication tools of jargon and slag to signal community membership. In this research, I want to broaden the scope of analysis of the communicative elements that make up a community of practice to look holistically at the communicative ecology. In particular, I want to incorporate Wenger's inclusion of "stories" and "a shared discourse reflecting a certain perspective on the world" (Wenger 1998, p. 125), the latter of which has been largely overlooked by communities of practice researchers. As I hope I will make clear throughout this dissertation, I believe that the shared stories and narratives in both Silicon Valley's CTI and the more global community of technology innovators play a crucial role in shaping the practices that define that community and the legitimacy of the communities' newest members. To do so, I believe the communicative dimensions of communities of practice theory will be greatly strengthened by the integration of narrative theory. Going forward, I will introduce the concepts from narrative theory that I would like to integrate – namely stories and narratives – and illustrate the role that they play in Silicon Valley's CTI. While Wenger talked about 'discourse' rather than 'narrative', I have opted to use narrative, because I believe that narrative allows for more analytical precision. I will begin with the simpler of the two concepts: stories.

Stories

I define stories as the particular tales, true or untrue, that individuals or organizations tell about themselves or others and what they experienced. Stories usually have a beginning, middle, and end, a "story" arc, a hero, a lesson. This definition is taken in part from the work of the community narrative scholar, Julian Rappaport and his frequent coauthor Eric Mankowski. For them, stories are also individual accounts, though they focus on true stories—personal accounts people tell about "their own life experiences" (Mankowski & Rappaport, 2000, p. 482). I also take inspiration from David Herman, a prominent narrative theorist, who, unlike Mankowski and Rappaport, also looks at *untrue* stories, tall tales, fables, or fictionalized accounts of the world. While retaining the individual level definition, stories for Herman are, regardless of their truth, ways in which we come to understand the world around us. They are "basic human strategy[ies] for coming to terms with time, process, and change" (Herman, 2011, p. 1-2)

In many ways, the art of storytelling is at the center of how technology innovation is currently being practiced in Silicon Valley. The venture capital-dominated nature of its approach to innovation means that in addition to having an exceptional product and a solid business model, innovators need to get the attention of both prospective customers *and* prospective investors in order to make it. "Tension and struggle, heroes and villains," Carmine Gallo writes in *Forbes*, "are the stuff of great movies. As it turns out, they are also key to selling one's ideas" (Gallo, 2015). Scholars as well have looked at the role storytelling plays in the work of entrepreneurs. Ethnographer, Ellen O'Conner, for example, found how crucial it was to the success of startups for their founders to master the art of telling personal stories that allow them to "justify the existence of the company" and that "convince others to devote funds and other key resources to the company" (O'Connor, 2002). The personal stories, she wrote, "build credibility for both the success of the entrepreneur as an individual and for the success of his idea as a compelling market entry" (O'Connor 2002, p. 42). She found storytelling to be particularly instrumental for early stage companies that don't yet have tangible products or sales to prove their worth. In such cases, it falls to the story and the delivery of the storyteller to "convey determination" and "inspire confidence" (O'Connor 2002, p. 42). In a community where thousands of new startups seem to be born every day, mastering the art of storytelling can mean the difference between gaining legitimacy, funding and success, and being ignored, overlooked, and excluded.

Iconic Silicon Valley innovators have long been aware of the power of telling a "good story" to shape more than just investor expectations. Among them Steve Jobs is perhaps the best remembered for his beliefs about the important role of storytelling in his work. A Kenyan Indian entrepreneur I came to know during my fieldwork forwarded the following story about Jobs to me on WhatsApp in May 2016, but it was originally posted to the online discussion site, Quora, by a former employee of Jobs, Thomas Higbey, in 2013. The story goes as follows:

> Worked at NeXT the summer of 94. I was in the break room with 2 colleagues when [Steve] Jobs walked in and started making a bagel. We were sitting at a table eating ours when he out of the blue asked us 'Who is the most powerful person in the world?' I said Mandela since I had just been there as an international observer for the elections. In his confident fashion he stated 'NO!...you are all wrong...the most powerful person in the world is the story teller.' At this point I was thinking to myself 'Steve, I love you but there is a fine line between genius and loco...and I think I'm witnessing this right now'. Steve continued, 'The storyteller sets the visions, values and agenda of an entire generation that is to come and Disney has a monopoly on the storyteller business. You know what? I am tired of that bullshit, I am going to be the next storyteller' and he walked out with his bagel. (Higbey, 2013)

Even if Higbey's story does not reflect the exact way in which events really unfolded (as stories rarely do), it does draw attention to Job's awareness of the importance of storytelling, as well as his reputation as a good storyteller. Over the years, as he told stories around the product releases of the iPod and the iPhone and so one, his reputation grew. He has been described as a "master storyteller" (Winfrey, 2016) and the "world's greatest business storyteller" (Gallo, 2015), able to craft a story to motivate his employees and inspire consumers.

Storytellers – Techno-Visionaries
In addition to storyteller, Jobs seems to be most frequently described as a "visionary" (Winfrey, 2016). In fact, along with innovator, and entrepreneur, visionary seems to be one of the most common descriptors used in his obituaries in 2011. The visionary who "led a mobile computer revolution" (Giggs, 2011), the visionary who was "one of the greatest American CEOs of his generation" (Robertson, 2011), the "visionary and creative genius" that Apple lost (Siegler, 2011). This label is no accident. Jobs led a company that built products that have fundamentally

changed how many in the US and elsewhere around the world interact with their communicative ecologies in a way that few people could have predicted. But through the stories he told, Jobs seemed to be doing just that: predicting the future.

I believe that *techno-visionaries* like jobs play a particularly important storytelling function in Silicon Valley's CTI.

Beyond Jobs, many of the most iconic Silicon Valley entrepreneurs are often also characterized as visionaries – or sometimes futurists and dreamers – telling the public stories of a future only they know is possible. And many of the entrepreneurs themselves seem to believe it. Elon Musk, for example, frequently speaks about futures most people assume are impossible or at least the stuff of science fiction, made real only for generations hundreds of years in the future. Colonizing Mars, fully electric cars taking over the American automotive market, a tunnel under Los Angeles to ease traffic. Musk is frequently out in the public eye arguing that technological advancements are not only important for progress, but are necessary to save the human race; and he is not shy about seeing himself as the man with the vision. "I say something, and then it usually happens. Maybe not on schedule, but it usually happens" (L. Kim, 2016).

The stories that Silicon Valley techno-visionaries like Musk and Jobs tell are frequently about the future, a decidedly technological future at that. Self-driving cars, transporters, hover boards, 3D printers, virtual reality, artificial intelligence, space ships, rockets that can land back on earth, and internet connectivity for all, many of the technologies that feature in the stories they tell (and sometimes eventually build) are seemingly indistinguishable from those that feature in the decidedly fictitious accounts of the future from science fiction. Incidentally, much of the science fiction literature and entertainment content swings between the utopian – Metropolis, Star Trek, Childhood's End – and the dystopic – Black Mirror, Blade Runner, The Matrix – though it is more frequently the latter, perhaps because stories about heroes overcoming adversity or learning about the flawed nature of humanity tend to make more compelling plots than utopian ones. By contrast, the stories told by Silicon Valley's techno-visionaries are decidedly utopian, persistently focused on how new technologies (their products) will improve the world around us. Uber talks about how its application is "creating possibilities for riders, drivers, and cities" (Uber, 2018), while Facebook describes its platform as "giving people the power to build community and bring the world closer together" (Facebook, 2018). Even a company with a product as seemingly superficial as Snapchat describes itself as "reinventing the camera", representing "our greatest opportunity to improve the way people live and communicate" (Snap Inc., 2018).

For new entrepreneurs pitching to investors, in many ways they are expected to play the part of a techno-visionaries as well, telling tales of how the world (or even just a small market) will be changed for the better as a result of the adoption of their new technology, even if they do not yet have the market to prove it. Almost by definition these pitches also need to be techno-utopian, showing how their technology will help a suburban mom cook more efficiently or will help a poor child get electricity to finish their homework. Telling a dystopic story about how a robot becomes sentient and turns on its creator may make a compelling science fiction story, but would hardly convince investors to fund the startup that built the robot.

In Lave and Wenger's original publication on communities of practice, they presented case studies of apprentices who were learning to become fully fledged community members through participation, including participation in the community's stories (Lave & Wenger, 1991). The most illustrative example they give of this comes from the work of Carol Cain, who used ethnography to examine the practices – including the storied ones – of the alcoholics recovery community, Alcoholics Anonymous (A.A.) (Cain, 1991). At group meetings, existing members tell stories of their own history of addiction and recovery in the presence of new members. "In A.A.," she wrote, "personal stories are told for the explicit, stated purpose of providing a model of alcoholism, so that other drinkers may find so much of themselves in the lives of professed alcoholics that they cannot help but ask whether they, too, are alcoholics" (Lave & Wenger, 1991, p. 80). Furthermore, in the A.A. context, learning *how to tell* stories is also an integral part of

fully joining A.A. In order to becoming a full A.A. member, newcomers must complete that "Twelve Step process", the last step of which is telling your own personal story of alcoholism to non-members, particularly non-members you suspect of being unadmitted alcoholics. Through listening to full member stories and engaging socially inside and out of meetings with full A.A. members, new members gradually learn how to tell their own stories of addiction in the appropriate way and to interpret their lives and their personal histories through the lens of being a "non-drinking alcoholic" (Cain, 1991).

Like A.A., aspiring members of Silicon Valley's CTI wishing to play the important role of successful technology entrepreneur must embrace the practice of techno-visionary storytelling in order to do so. In A.A., newcomers listen to stories from existing members to learn what is expected of them. In Silicon Valley, the entrepreneurs read advice from authors like Vitaly Golomb (2018), but they also hear the stories told by the most successful entrepreneurs and techno-visionaries, like Jobs and Musk. Those stories how they're told, and by whom can inspire outsiders to want to join the community themselves (as I will show in Chapter 2), and can provide a model of what a successful Silicon Valley entrepreneur is expected to look, act, and sound like (which I explore more in Chapter 3). The model being presented to them is one of the *techno-visionary entrepreneur*, with Elon Musk and his particularly fanciful stories arguably being the archetype of that model. With repeated practice of telling their own techno-utopian stories over and over again in their own pitches, entrepreneurs learn to do more than raise money. They learn what successful entrepreneurs are supposed to sound like and which values they are supposed to share and to champion.

Narratives

In addition to stories, I believe that what narrative theory says about larger *narratives*, particularly community narratives, can enhance our understanding of how communities of practice are formed and change and how members' sense of meaning and legitimacy are constructed. In the case of Silicon Valley's CTI, I believe they have played a particularly important role in helping the practice formed in the Valley to gain traction elsewhere.

Narrative research has been incorporated in a diverse range of disciplines, from linguistics to psychology, and even from nursing to management. Despite the breadth of this body of research, at the core, most of it rest on the theory of social constructivism (Berger & Luckmann, 1991), on a belief that narratives make up a crucial component of who we are; that as humans we make sense of the world through the stories we tell one another and ourselves (Bruner, 1991). As psychologists Dan McAdams, Ruthellen Josselson and Amia Lieblich, who have written extensively about narrative and identity, put it, "We are all storytellers, and we are the stories we tell" (McAdams, Josselson, & Lieblich 2006, p.3).

Much of this literature treats the terms "narrative" and "story" interchangeably. The exact definitions of these terms have been greatly contested in narrative research; I do not wish to enter that debate here. I am not a linguist nor am I a literary critic and arguing for a particular understanding of narrative is not my goal. For clarity's sake, unlike many, but not all, narrative theorists, I want to treat "narrative" and "story" as *two distinct terms*. In contrast to stories as the *individual tales* people tell, I define *narratives as the larger, more general, over-arching tales that shape and are shaped by our fundamental cultural and ideological views of the world*. In this definition, narratives are a composite of the many varied individual stories a particular culture, community, or institution tells that have accrued over time (Geertz, 1973). As the psychologist Jerome Bruner wrote in his seminal piece "The narrative construction of reality," "Narratives do accrue, and, as anthropologists insist, the accruals eventually create something variously called a 'culture' or a 'history' or, more loosely, a 'tradition." (Bruner 1991, p. 18). What I call narratives here have intermittently been referred to by scholars as cultural narratives, dominant narratives, and metanarratives, though some of these conceptualizations are decidedly broader than mine.

For simplicity sake, I will continue to use the term narratives, though you will occasionally find me adding "community" or "dominant" to emphasize its importance to the community of practice. Narratives, in the definition I am using, are not expressly *told* themselves, rather they are *constructed* in the process of individual stories being told and retold. Through this process of retelling, narratives become normalized and in turn serve to legitimize an underlying ideology or a particular community identity. Canonic religious texts are the quintessential example of this. Bible tales, Roman mythology, the Hindu Vedas all represent stories told for centuries that make up particular narratives or lessons that serve to uphold, reinforce, and legitimize the morals and beliefs of that particular religious practice.

   In the context of communities of practice, just as the enterprise in which the members are engaged are jointly negotiate, so are a community's narratives. In the same piece cited above, Bruner gave a sense of how narratives might work in communal settings. "One of the principal ways in which we work 'mentally' in common, I would want to argue, is by the process of joint narrative accrual" (Bruner 1991, p. 20). Embracing this social and communal constructivist perspective, *I adopt the view that a community and its narratives are mutually constituted*. They are constructed by the community's members in a process of joint negotiation and over the course of stories being told and retold. But they in turn shape the community, influencing members' perceptions of how other members should behave and what the community's boundaries should be. As the narrative scholars Stephens & McCallum have written in their book on retelling stories, narratives can work to maintain "conformity to socially determined and approved patterns of behavior, which they do by offering positive role models, proscribing undesirable behavior, and affirming the culture's ideologies, systems, and institutions" (Stephens & McCallum, 2013, p. 1-2). To the psychologists, like Julian Rappaport, a community and its narratives are inescapably linked.

> *Shared narratives* are the surrounding substance of our social world. The psychological sense of community can be indexed by its shares stories. People who hold common stories about where they come from, who they are, and who they will, or want to be, are a community. A community cannot be a community without a shared narrative [emphasis added] (Rappaport, 2000, p. 6)

   For Rappaport and his coauthor, Mankowski, shared community narratives function regardless of the *type* of community, regardless of the location, regardless of how "tight" or "loose" the community's structure is, and regardless of whether membership in a community is considered life-long (as in the case of a family) or temporary (as in the case of players on a sports team or students in a school) (Mankowski & Rappaport, 2000, p. 487).

   Narratives are also an important way of conveying and reinforcing a community's *shared values.* In their discussion of what helps to build a community's "sense of community", psychologists McMillan and Chavis wrote about the role that "agreement with the values and beliefs of the community" can play in strengthening someone's sense of community and sense of belonging.

> When people who share values come together, they find that they have similar needs, priorities, and goals, thus fostering the belief that in joining together they might be better able to satisfy these needs and obtain the reinforcement they seek. Shared values, then, provide the integrative force for cohesive communities (McMillan & Chavis 1986, p. 13)

However, as I've shown above, one of the characteristics that sets communities of practice apart from other communities, and that makes it so useful for this study, is its heterogeneity. In 1998, Wenger argued that it was not necessary for the members of a community of practice to all share

the same beliefs and values. "Indeed," he wrote, "mismatched interpretations or misunderstandings need to be address and resolved directly only when they interfere with mutual engagement. Even then, they are not merely problems to resolve, but occasions for the production of new meaning" (Wenger, 1998).

Yet in most communities, shared values are communicated and reinforced through its shared narratives. Situated within a community's narratives, these values are transmitted to the members of a community in the form of lessons, "morals". Religious texts are a natural example of how narratives, in the form of canonic texts, teach community members what to believe. But so are children's fables, myths, and legends. Stephens and McCallum, known for their publication on the retelling of children's stories, write that "under the guise of offering children access to strange and exciting worlds removed from everyday experiences, [stories] serve to initiate children into aspects of social heritage, transmitting many of a culture's central values and assumptions and a body of share allusions and experiences" (Stephens & McCallum, 2013, p. 1). A specific example they give is the story of Robin Hood, which for the children learning this iconic story, serves to convey the importance of the core values of truth and justice regardless of what the law at the time might say.

However, while shared values may bring some members of a community closer together, in heterogeneous communities, like many communities of practice, they can become problematic. If certain more powerful individuals have more say over shaping a community's narratives, other members with less influential positions and conflicting views may feel left out. This is compounded as the narratives serve to reinforce certain world views, further ostracizing members or aspiring members of a community of practice who do not share them.

Technology is Good Narrative

If we return again to the techno-visionaries – the storytellers of Silicon Valley's technological future – we can see both how communities of practice and their narratives are mutually constituted and how these narratives convey certain underlying world views.

Let's take the archetypal example of Elon Musk. On September 29, 2017, wearing blue jeans, a white shirt and a black jacket –together giving him a sort of hybrid engineer-investor vibe – he spoke at a meeting of the International Astronautical Congress in Australia about his vision of traveling to Mars with SpaceX. While he was speaking immediately to a room of aeronautical engineers, the YouTube video has a significantly larger audience of 1.5 million viewers.[3] He began as follows:

> I'm gonna talk more about what I think it takes to become a multi-planet
> species. Just a brief refresher on why I think this is important: I think
> fundamentally the future is vastly more exciting and interesting if we're a
> spacefaring civilization and a multi-planet species than if we're not. You want
> to be inspired by things…you wake up in the morning, you think 'the future's
> gonna be great!' And that's what being a spacefaring civilization is all about.
> It's about believing in the future and thinking that the future will be better
> than the past. And I can't think of anything more exciting than going out there
> and being among the stars (SpaceX, 2017)

As he spoke, he stood on a stage in a darkened auditorium in front of a gigantic image of a rocket taking off in the middle of a desert in a cloud of smoke and fire. As he continued (it should be added, without even having to mention the name of his company and its work on

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[3] It should be noted that, while this audience is large, in the era of music videos breaking the 1 billion views barrier, it is not groundbreaking for YouTube.

rockets), he explained that the "code name" for the rocket is "BFR", an acronym, the audience rightly assumes, stands for "big fucking rocket". After the laughter dissipated, he concluded his introduction by saying explicitly what he wanted the audience to pay attention to: "Probably the most important thing that I want to convey in this presentation is that I think we have figured out a way to pay for it".

The story he told in this introduction is undeniably about a utopian future where humanity is inspired by being a "multi-planet species". The story he told over the course of the remaining 40 minutes is undeniably about how his company, SpaceX, is making technological advancements in rocket science, that are moving us towards that future. Over the course of his career, Musk has told a version of these interlocking stories over and over again: the future of humanity is brightest when we build rockets that allow us to move and to think beyond our planet's atmosphere. And he has told stories about his other projects (most notably Tesla, and most controversially his proposal to build a 3D network of tunnels under Los Angeles), which, while they are not about rockets, do retain a similar message about the necessity of technological advancements for society's progress. Over time, others in Silicon Valley have told and retold and reshaped similar stories. The same techno-utopian sentiments are embedded in Uber's and Facebook's and Snapchat's mission statements and in the pitches of countless entrepreneurs. Together, they comprise what I believe to be one of the dominant narratives of Silicon Valley's community of innovators: *through innovating new technologies, entrepreneurs and the companies they're building are fundamentally changing the world for the better.* Going forward I will refer to this simply as the Technology is Good Narrative.

It is impossible, I believe, to determine any kind of clear causal direction between this broader narrative, Musk's individual stories, the characteristics of Silicon Valley's CTI, and its shared practices and values. Musk's story may inspire and motivate other entrepreneurs to try to join Silicon Valley's CTI or may motivate existing members to become more involved in the practices. These actions in turn shape and strengthen the Technology is Good Narrative and reinforce the practices of the community. The Technology is Good Narrative may in turn *be shaped by* the community's own underlying capitalist ideology and its imperative to continually grow and expand. Moreover, Musk's performance, choice of dress, choice of backdrop, choice of venue and so on may have informed aspiring entrepreneurs watching him to emulate (or even reject) some of his choices in their own pitches later on.

The Technology is Good Narrative is far from the only narrative in Silicon Valley's innovation community. On the contrary, I believe that all communities of practice are made up of many such narratives. In the case of Silicon Valley's CTI that includes narratives about what a successful entrepreneur does, where they came from, and how they build their company, narratives about failure and redemption, about winners and losers, or just about rockets. Some – like narratives built by stories that hype up particularly 'hot' startups or areas of development, like bitcoin, or fintech – are more temporary that others. They may be dominant one moment, shaping the kinds of startups investors are looking for, and then gone the next. Others, like the Technology is Good Narrative, I believe are more fundamental. They reiterate and reinforce the community's *shared values* and ideologies, further integrating them into the daily practices of the community. In the case of the Technology is Good Narrative, these include beliefs about technology being a social good, or about newer technology necessarily being better than older technology, or the value of profit-generation and global scalability and its rooting in capitalist ideology.

However, the presence of dominant narratives, like the Technology is Good Narrative, can lead to the (often incorrect) assumption that everyone in a community does indeed share the same values. This poses a particular problem in heterogeneous communities of practice. For example, the pervasiveness of the Technology is Good Narrative in Silicon Valley has often made it particularly difficult for members of Silicon Valley's CTI to acknowledge that technology could create any social problems, or for those who saw the problems to feel empowered to speak

up. I could speculate that this may have contributed to why companies like Facebook and Uber have been so slow to acknowledge the potential damage their platforms had cause even in the face of mounting evidence.

Bringing together a theoretical framework for a globalizing community of practice

Drawing out the more critical elements of the original communities of practice theory makes it a more useful tool for foregrounding the heterogeneity and the hierarchies of legitimacy and power within changing communities of practice around technology innovation. But communities of practice theory alone says very little about the *impact* that a community's heterogeneity has on its practices or members and says almost nothing about *how* hierarchies of power are experienced or what they mean for new members seeking to gain legitimacy. I believe that more thoroughly theorizing about the role that stories and community narratives play within communities of practice helps strengthen the analytical power of communities of practice theory in this regard. Alone, communities of practice theory is an insufficient tool with which to try to make sense of the complex array of power, money, identity, culture and narratives that intersect as Silicon Valley's particular approach to technology innovation becomes popularized in vastly different cultural context around the globe. With the integration of narrative theory, however, it becomes significantly more useful.

A Globalizing Community

The Valley is now a global mindset, not a single geographic destination. While it is still hard to find an ecosystem in the world that is nearly as supportive or as dense as Silicon Valley, the gap between here and the communities elsewhere is narrowing. (K.-M. Cutler, *Tech Crunch,* 2014)

In the story about Uber that I told a version of earlier, the company's founders Travis Kalanick (American) and Garrett Camp (Canadian) were serial entrepreneurs who developed and tested their idea in Silicon Valley, invested their own money in the project, found exponentially increasing rounds of venture capital investment, expanding first nationally and then internationally, first to Paris, and eventually to Asia and Africa. But the full story is more complicated. Uber may be one of the most successful Silicon Valley startups ever. With current estimates of its valuation fluctuating between $48 billion and $72 billion depending on the most recent investment round (Schleifer, 2018), it has often topped the list of unicorns, and now 'deacorns'. But Uber is far from the only rideshare startup in the world. It isn't even the only ride share startup to be a 'decacorn'. And its fiercest rival isn't its Silicon Valley rival Lyft, it's the Chinese company, Didi Chuxing.

Did Chuxing (also known as DiDi for short) is also a 'decacon' reportedly valued at $56 billion (intermittently higher or lower than Uber's own valuations) (Shen, 2018). It was founded in June 2012 (Carsten, 2016), as Uber was beginning to expand beyond the border of the United States, by Cheng Wei, a man with a background in administration and eight years' experience at one of China's largest technology companies, Alibaba (Forbes, 2018). By November that year, DiDi had received a Series A round of investment to the total of $15 million from one of China's largest technology companies, Tencent (Carew, 2015). As it expanded across China's domestic market over the next few years, it acquired new rounds of investment, including an impressive Series D round of $4.5 billion in June 2016 with investors that included Apple and China's other technology behemoth, Alibaba (Love, 2016).

In 2013, Uber tried to enter the Chinese market (Freund, 2016), but faced significant challenges from DiDi, eventually ceding the market and selling its Chinese operations to its rival for $35 billion and a partial stake in their company (Hinchliffe, 2017). While Uber has grown

through expanding globally, DiDi has reached a similar level without yet leaving the Chinese market. Even after shutting out the competition from Uber, DiDi has made moves to expand and further challenge Uber. In 2015, for example, it invested directly in Uber's domestic rival Lyft, and in 2017 it did the same with its rival in the Middle East, Careem, both companies unicorns in their own right (Horwitz, 2017). By the end of 2017, Didi had even opened a lab in Uber's own Silicon Valley backyard reportedly to work on driverless cars and artificial intelligence (Zhong & Isaac, 2017). While Uber and DiDi are by far the largest, there are other players in the various ride share markets around the world that compete with Uber, from Careem in the Middle East to Easy Taxi and 99 in South America, to Little Cabs and Taxify in Africa. Easy Taxi, for example was founded by two Brazilians who pitched it at a startup competition in Rio de Janiero in 2011. It was officially launched in 2012 and became one of Uber's biggest rivals in South America, expanding to Mexico later that same year. And though it ultimately proved unsuccessful, unlike DiDi, EasyTaxi also put considerable effort into expanding laterally to other emerging market regions, opening in 2013 in Asian countries like Malaysia and the Philippines and African countries like Cote d'Ivoire and Nigeria. Similarly, Taxify, a relatively new player in African markets like Kampala, is originally from Estonia.

In many markets beyond China easily overlooked by most members of Silicon Valley's community, the struggle between these different operators plays out. For example, when I started my primary fieldwork in January 2016, Easy Taxi and Uber were already both in Nairobi. And while they both struggled to attract consumers away from the cab drivers many Nairobians had personal contacts with and trusted, Uber ultimately proved the more popular of the two in the price-sensitive Nairobi market with its price cutting strategy. And when Kenya's telecommunications giant Safaricom launched its own rival, Little Cabs, Uber dropped its prices further still as it had done in many other markets around the world. By the time I left at the end of 2016, Easy Taxi had been forced out of the market, Taxify was just getting its footing, and Uber was proving relatively more popular among the Kenyans techies I knew than Little Cabs for its more usable interface despite their desire to support a Kenyan company.

In most of this chapter, I have sketched out *Silicon Valley's* Community of Technology Innovators. But as this recent history of global competition in the rideshare market indicates, many innovators outside of California have adopted repertoires of practices that would be familiar to those in Silicon Valley. Brazilian entrepreneurs pitch ideas at startup competitions and get funding from venture capitalists, Chinese entrepreneurs grow their companies at exponential rates. Some of the material culture from Silicon Valley can also be seen in its counterparts abroad. Didi's headquarters in Beijing, for example, has a similarly whimsical layout to Facebook's own headquarters, with an open plan office space, enormous windows, emoji posters, beanbag chairs, and a slide (Soper, 2016; Yuan, 2017). And while Easy Taxi was ultimately forced out of Kenya's ride share market, its entrance there and in other emerging markets demonstrates how different the directionality of technology innovation and expansion is from the one we might expect looking purely from the perspective of Paolo Alto.

In urban centers all over the globe, even outside of China, many of the practices of Silicon Valley's CTI are being adopted. There are co-working spaces in London, entrepreneurs in India, and venture capital investors in Brazil. International startup pitch competitions attract entrepreneurs from Nigeria, Malaysia, and Germany. In fact, some of the most successful and well-known startups in the United States have more international backgrounds than most Americans would assume. Spotify, for example, was founded in Sweden; Waze was founded in Israel; WhatsApp, while it was founded in Silicon Valley, was started by a Ukrainian immigrant; and Elon Musk himself was born in South Africa. There are many more startups, even quite a few unicorns, that the average American would likely not have even heard of, as many startups like DiDi have become very successful without even entering the American market.

Along with this trend in practice, there has also been a gradual but important increase in academic work foregrounding technology innovators outside of The Valley. Takhteyev's study of

software programmers in Rio Di Janiero (2012), Anita Say Chan's study of the culture of innovation in Peru (2014), Aneesh Aneesh's study of India's transnational software programmers (2006), Silvia Lindtner's work on Chinese innovation communities (2013), and Richard Pfeilstetter work on the promotion of startup culture in Manchester, England (2017) are all examples that come to mind of other ethnographers who have done this important work. There has been similarly important work in African contexts from scholars in multiple disciplines including Seyram Avle's work on entrepreneurs in Ghana (S. A. Avle, 2014), Nicolas Friederici work on the role of technological connectivity and innovation hubs in Africa (Friederici, 2016; Friederici, Ojanperä, & Graham, 2017), and Hildaa Moraa's work on models of innovation around Africa (Moraa & Gathege, 2013). But the field of research around African technology innovation is still quite new and I hope that this dissertation can build on this important work that has preceded it. In the remainder of this chapter, I will use the case of Kenya and the growth of a local community around the practice of technology innovation to illustrate how Silicon Valley practices are being adopted and adapted elsewhere and make the case for the creation of a Global Community of Technology Innovators.

However, before I do I should note another important line of criticism of the communities of practice theory: That it has often been applied to communities that are too large, stretching the framework beyond its original definition. Amin and Roberts for example made this critique when they wrote:

> Our reading of much of this literature, however, shows that the use of the term [Communities of Practice] has become imprecise, having strayed far from the original definition of CoPs as relatively stable communities of face-to-face interaction between members working in close proximity to one another (Amin & Roberts, 2008, p. 355)

Wenger himself seemed unconvinced by the idea of taking this framework to practices on a very large scale, writing that "viewing a nation, a culture, a city, or a corporation as one community of practice might seem like a way to capture the processes of learning that constitute these social configurations. Yet it would miss crucial discontinuities among the various localities where relevant learning takes place" (Wenger, 1998, p.125).

However, writing today two decades after Wenger's solo publication and nearly three decades after Lave and Wenger's original *Situated Learning* (Lave & Wenger, 1991), I would argue otherwise. In fact, I would suggest that extending the community of practice framework to analyze innovation practices that have been adopted throughout the globe is instead a way of strengthening Lave and Wenger's original framework, and modernizing it, taking account of the various complex ways in which our practices and communicative ecologies are globalizing and hybridizing.

Since their original publications, the richness and diversity of the communicative ecologies of the internet-connected among us has changed substantially. The ways in which norms of practice are transmitted and enforced, and meaningful participation negotiated have evolved, while the rate at which people in vastly different locations can enter into and negotiate shared practices has accelerated. When he was writing, there was no YouTube, no Facebook and certainly no Uber, and even telephone calls internationally were often prohibitively expensive. Google, now one of the most valuable companies in the world and one with enormous control over how people around the world experience the internet, had only just been founded the same year of Wenger's writing. And perhaps more so than any other aspect of a community of practice, its stories and narratives can now travel almost instantaneously around the world on these social media platforms. As such, the integration of narrative theory helps to ensure that communities of practice theory can keep up with the rapid pace of change in global tech work.

A number of scholars, largely in the field of education, management and design, before me have shown how the community of practice framework can be extended to virtual environments (Ardichvili, Maurer, Li, Wentling, & Stuedemann, 2006; Clarke, Partridge, & Petersen, 2017; Pitta & Fowler, 2005). Al, Erdogan, Tonta, and Ucak, for example, showed how initial engagements on Twitter were essential to the formation of an online community of "techie librarians" who were all geographically dispersed (Al, Erdogan, Tonta, & Ucak, 2010). But these largely still look at communities of practice as smaller units in which members come into direct (if not physical) contact with other members. But I believe that as technology increases our interconnectedness, there is great, perhaps even urgent, need to expand our understanding of communities of practice as they exist in larger transnational settings.

To explain why, I want to return for a moment to one of the ethnographic cases on which Lave and Wenger based their original framework: Carol Cain's work on the Alcoholic Anonymous (A.A.) (Cain, 1991). A.A. is not a geographically situated community, though its members likely experience it in geographically situated ways wherever they live. Looking at a page titled "What is A.A.?" on the organization's website, the community's definition emphasizes its internationality and its diversity.

> Alcoholics Anonymous is an international fellowship of men and women who have had a drinking problem. It is nonprofessional, self-supporting, multiracial, apolitical, and available almost everywhere. There are no age or education requirements. Membership is open to anyone who wants to do something about his or her drinking problems (A.A., 2018)

A.A. has regular local meetings, regional forums, and a core text and standard format that are shared in community meetings around the world. Its website similarly provides access to "daily reflections" "PSAs" and an online bookstore. While individuals may be locally situated, they are welcome at meetings anywhere around the world. By way of an anecdote, I know one woman who participates on a regular basis in her local A.A. meeting, but when she travels, stops by the weekly meetings in vastly different locations and still finds the material and communicative environments familiar and, while there is a period of adjustment, still feels welcome.

Not all communities of practice are necessarily as welcoming as A.A.; communities around the practice of building technology startups are certainly more competitive and hierarchical. While someone from Silicon Valley traveling to another site of innovation elsewhere on the planet may recognize the practices and stories that they see or hear, they may not always feel welcome. This can be even more problematically the case when the person doing the traveling (or the speaking) is African. This potential for prejudice and power imbalances should be kept in mind while reading the rest of the pages to come, even in Chapter 2, where I take a more optimistic tone. For now, I want to conclude this chapter by returning to the case of Nairobi Tech Week and Kenya's technology innovators to illustrate how a Global Community of Technology Innovators is taking shape.

The Kenyan Community of Technology Innovators

In 2007, Safaricom launched M-Pesa, the mobile payment application that helped Kenya to make a name for itself as the "tech hub" of Africa. That same year, a group of Kenyans created Ushahidi, the crowd-mapping platform that would become popular with development and emergency response practitioners around the world, and three years later, the technology coworking space (often described as a 'hub' or 'community' in itself) called the iHub opened in the city. While there was certainly a nascent community of people involved in technology

innovation before this time, these events helped to turn the focus towards the creation of startups, and helped to build Kenya's own Community of Technology Innovators (CTI).

Even the most optimistic member of Silicon Valley's CTI would readily admit to the challenge posed by Chinese innovators to Silicon Valley's dominance, but the development of "innovation hubs" in Africa have more often been seen as novelties than any kind of threat or investment opportunity. And yet, gradually some of Silicon Valley's innovators have become interested in Africa's growing technologically connected middle-class. Technology corporations like Google and IBM not only marketed their products to this growing consumer base, but also began supporting the training of Kenyan programmers and the opening of their own research labs hiring Kenyans – often 'glocal' ones (S. Avle, 2011) – to help innovate technologies that were more responsive to "African problems" and the challenges of the African environment. Among the predominantly educated middle-class Nairobians who make up the majority of Kenya's CTI, the adoption of new technologies regardless of origin has been rapid. They use American platforms like Gmail and Slack and Whatsapp just as readily as African ones like Sendy (the Kenyan motorcycle delivery application) and Jumia (the Nigerian online shopping platform), or South American ones, like Easy Taxi or Easter European ones, like Taxify.

Moreover, everywhere you look now in Nairobi startups seem to be "the thing" for bringing about social progress, seeming eclipsing the NGO as the vehicle for sustainable development. There is a startup building a pay-as-you-use approach to cooking gas, a startup building a system to improve cash transfers between African countries, and a startup training women and girls in how to code. There are hundreds more. Startups that focus on getting market price information to farmers, on enabling the "bottom of the pyramid" to access credit, were particularly common while I was living in Nairobi in 2016. Startups in Kenya come in many sizes. Some are just two people with an idea, while the largest, M-Kopa, now has hundreds of employees and its own campus. The vast majority are "idea stage" startups—locally known as "two guys and a laptop"—while others are "early stage" with a fledgling customer base and revenue stream. Just a handful have managed to raise $3 million or more in funding, raising money from "friends, family, and fools", NGOs and donor organizations, accelerator programs, venture capitalists, and angel investors. On the whole, *I found few who seemed to question the value of the startup model for designing and building new technologies.*

Nairobi Tech Week , from the beginning of this chapter, provides a good illustration of the adoption of much of Silicon Valley's repertoire of practices around the startup. From the ubiquitous branded stickers to the excitable speaking style of many of the moderators; from the presence of venture capitalists to the panels packed with entrepreneurs and "thought leaders", Nairobi Tech Week, while ostensibly a conference designed to celebrate technology and the techies, frequently felt more like a celebration of the startup. For a session on "tech talent" in the tech sector, for example, all of the panel speakers were entrepreneurs or managers of some kind at Kenyan startups, comprised of Kenyans and foreigners, men and women. Even at a panel on data science, which could have just focused on the science and programming involved, the majority of the speakers were themselves entrepreneurs. An entire industry seems to have exploded in Nairobi since 2007 to support, fund, nurture, train, and house these startups. Over the course of 2016, I saw dozens of startup competitions and startup accelerators; I saw many of the city's most prominent universities open their own 'innovation labs' aimed at turning their students into startup founders; and I saw numerous consulting firms advertising their services to entrepreneurs or funders looking for investments. Numerous other coworking spaces also opened after the iHub

in 2010. At the time of writing there were at least 13 in all.[4] While they all have their unique character, most resemble those in Silicon Valley in their choice of open plan spaces.

Multiple overlapping communities

When members of Silicon Valley's community of technology innovators visit the iHub, like the A.A. member, they will likely find much that is familiar, from the office layout, to the focus on the startup, from the modes of supporting startups to the styles of communication and stories they tell. Indeed, in many ways, the repertoire of practices that Kenyan innovators share has more in common with the practices of other programmers and entrepreneurs in Hong Kong or Berlin than with the practices of many other Kenyans from the food vendors down the road to the bankers in the Central Business District. And Kenya's CTI itself is rife with international actors. From Google's funding for coworking spaces and design labs, to the World Bank's funding for research around programming bootcamps; from entrepreneurs coming from Harvard and Ghana to venture capitalists coming from Hong Kong and the Netherlands. Kenyan entrepreneurs themselves travel as well, attending international technology and innovations conferences like Social Capital Markets and South by Southwest; they travel to Silicon Valley to train at the legendary startup incubator Y-Combinator, to Hong Kong or Johannesburg to develop investor partnerships, and to London to pitch their ideas at global startup competitions like the Global Edtech Startup Awards.

Yet the repertoire of practices is also decidedly Kenyan. Many of the most successful startups in Nairobi would not exist without Kenya's unique mobile payment platform and their practices are influenced by the infrastructural challenges around imports and exports, by the interest or lack thereof they receive from Kenyan politicians, and by cultural norms that make Kenyan investors more cautious of the high-risk high-return model of startup investment. Many aspects of the material culture I observed, while clearly influenced by Silicon Valley also felt distinct. For example, while many of the men I knew wore jeans and branded t-shirts like their American counterparts, the women often dressed with far more color and style, sometimes incorporating Kitenge fabrics and elaborate statement necklaces to incorporate more obvious 'Africanness' into their style of dress, creating a symbolic distinction between themselves and their Western counterparts. Over my time in Nairobi, I found myself dressing up, wearing more stylish pieces than when I first arrived. Many of the spaces of innovation in Nairobi were a hybrid of African style and Silicon Valley's own industrial chic. One coworking space for example sported an 'upcycled' metal table in the shape of Africa with another was decorated in Kitenge print pillows and wooden pallets.

Kenyan innovators are therefore part of a locally situated Kenyan Community of Innovators, who often share physical practices and spaces, joint virtual collaborations, and practices that are at times unique responses to the physical environment in which they're working. But this community also shares many of its practices, and much of its material culture and communicative ecology, including its stories and narratives, with innovators around the world. Furthermore, the way in which programming new applications and funding new startups currently take place in Nairobi is far from geographically isolated. Many of the venture capitalists and other funders in Nairobi come from the United States and Europe, echoing the hierarchies of power embedded in the historical colonial pathways (Irani et al., 2010).

So, like members of A.A., while Kenyan innovators belong to a geographically situated innovation community in Nairobi, they are *also* engaged in some fashion with the *global* community, membership in which often more readily satisfies aspirational desires of global engagement and meaning.

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[4] iHub, iLab, Nailab, Nairobi Garage, The Foundry, Pawa254, GrowthHub, Almasi, Axlr8 Coworking Space, The Hive…Chandaria, Odeo, Gearbox (offering some kind of co-working space even if they don't call themselves by this label)

As I showed at the beginning of this chapter, Lave and Wenger incorporated heterogeneity and the potential for conflict in the process of "jointly negotiating" meaning into their theory of communities of practice. This is further aggravated, Wenger showed, by our inherent membership and participation in multiple communities, often simultaneously. "The nexus resulting from reconciliation work," he wrote, "is not necessarily harmonious, and the process is not done once and for all. Multimembership may involve ongoing tensions that are never resolved" (Wenger, 1998, p. 160).

Continuing to look at the practices in which Kenyan innovators are engaged as taking place in multiple overlapping communities of practice (rather than 'worlds' or 'networks'), I believe, provides a useful grounding for the discussion I hope to have in this dissertation, and I believe helps to refocus the communities of practice theory in a way that makes it more analytically useful in the modern age. In retaining the term community, I hope to foreground both the sense of meaning and belonging that a "community" (rather than a 'world' or a 'network') elicits, as well as the complex and often conflictual process of jointly negotiating practices across vastly different geo-cultural settings and across multiple overlapping communities.

Over time, individual Kenyan techies and entrepreneurs must negotiate the hierarchies of legitimacy in each of the communities of practice in which they belong. At times, they can converge: Being taken seriously as a technology entrepreneur may be similar in some regards in both a global and a Kenyan community. But they can also conflict. For example, often legitimacy in the global community comes from building a startup that can scale quickly and internationally, while belonging in the Kenyan community may require an explicit and authentic commitment to addressing the needs of the local community over the global one in the technology that is designed. Belonging (or wishing to belong) to the *global* community of technology innovators (as well as, or perhaps even instead of the Kenyan one) brings with it homogenizing pressures and expectations that often relegate Kenyans and other Africans to peripheral roles, push them out entirely (as I will show in Chapter 3), or lead Kenyan innovators to reject membership in the global community in favor of focusing on the Kenyan one (as I will show in Chapter 4). Together, a more critical application of the communities of practice theory enhanced with narrative theory allows for a foregrounding of heterogeneity, the hierarchies of legitimacy, and impact of community narratives in a community of practice, that can help to better understand the experiences of Kenyan techies.

Conclusion

In this chapter, I have used the way in which technology innovation has been practiced in Silicon Valley to build the theoretical framework necessary to make sense of the expansion of those practices to other parts of the globe and what that expansion means for techies and tech entrepreneurs in a historically disadvantaged region of the world. The framework that I have built here and that I will use going forward takes a more critical interpretation of communities of practice theory – focusing on the power imbalances and the potential for conflict inherent in heterogeneous communities formed around practice rather than identity or geography – and strengthens it by integrating narrative theory. I have made the case here that what narrative theory says about larger *narratives*, particularly community narratives, can enhance our understanding of how communities of practice are formed and change and how members' sense of meaning and legitimacy are constructed. In the case of Silicon Valley's CTI, I believe that narratives, like the Technology is Good Narrative (and, as I will show in Chapter 2, the Anyone Anywhere Narrative), have played a particularly important role in helping the practice formed in Silicon Valley gain traction elsewhere.

I have also outlined in this chapter what I believe are some of the characteristics of Silicon Valley's CTI that set it apart from other kinds of innovation or other kinds of technology production. These include: 1) the rapid pace of innovation and the belief in the intrinsic value of new technology over the old; 2) a capitalist ideology and innovations for a profit; 3) the venture capital funding structure and pressure to expand exponentially to a global market; 4) a focus on, and even a glorification of, the startups and the entrepreneurs that lead them; 5) a material culture that includes more relaxed business casual dress and open plan coworking spaces; 6) a communicative ecology that is comprised of rapid information exchanges and techno-visionary storytellers; and 7) community narratives, like the Technology is Good Narrative, that transmit and reinforce common values and create a model of the practices of a successful member of Silicon Valley's CTI.

With both the theoretical framework in mind and a clearer sense of what I mean by Silicon Valley's Community of Technology Innovators, I concluded the chapter by make the case that the practices in this Silicon Valley's CTI are increasingly becoming adopted in diverse regions around the world, leading to the creation of not just other local Communities of Technology Innovators, like the one in Kenya, but also to the gradual formation of a more interconnected Global CTI as well.

After years of conducting research in and around Kenyan techies, I believe that the way technology innovation is currently being practiced in Nairobi is part of a process of negotiating engagement and legitimacy with this *Global* CTI, rather than a process of imitation or replication of Silicon Valley on the Savannah. In this chapter, I have made the case that at this moment, roughly ten years after Nairobi's "startup ecosystem" is generally believed to have begun, what I believe is taking place is a process of negotiation—a negotiation of the terms, the extent, and the quality of inclusion in this Global Community. With memberships in multiple communities of practice that each elicit their own sense of loyalty and pressure to conform, the process can be an extremely messy one, laden with power imbalances and road blocks. As I will show in subsequent chapters, most Kenyan tech innovators are as yet neither seen as "full members" of this Global Community nor do they always desire, or perceive themselves as deserving of, full integration. And existing simultaneously with the desire to be taken seriously by foreign technology innovators is often a profound desire to retain a particular Kenyan quality of innovation in Nairobi and a commitment to the local Kenyan CTI. Particularly when looking at the very real presence and influence of white foreigners in Nairobi's tech community, there are many who see real Kenyan participation as under threat. Large-scale community events, like Nairobi Tech Week, held on a semi-regular basis, are often a way of reconfirming or renegotiating what tech in Kenya is or should be all about and how engaged it should be with the rest of the world. They are also usually sites of contestation over this vision. The complex negotiation processes will be addressed in later chapters, particularly in Chapters 4 and 5. For now, by focusing on the role of narratives in communities of practice, I want to look more at *how* Silicon Valley's approach to technology innovation spread around the world. In Chapter 2, I will build on the work in this chapter and make the case that in addition to the financial and technological incentives that others have pointed to, community narratives, particularly what I call the Anyone Anywhere Narrative, and storytelling were also instrumental in enabling the expansion and the creation of a Global Community of Technology Innovators and in helping the Community and its practices to appeal to a Kenyan audience of networked techies.

CHAPTER 2: THE ANYONE ANYWHERE NARRATIVE

In June 2016, I attended one of many events held at the iHub in Nairobi. This particular event was the second in a series called "#iHubSpeaks" that brought artists, musicians, and journalists to speak to a "techie" audience at the iHub. That night in June, a well-known Kenyan filmmaker, named Jim Chuchu was the evening's main feature. He spoke at length about a project that he was currently working on called 'A Fractured City', which he described as his attempt to "bring light to untold places in Nairobi through storytelling." In the eyes of this very charismatic filmmaker, stories were all powerful; they could build countries and start wars; they could erase pasts or enable conflicts, like in Kenya's post-election violence in 2008. And they were not solely the possession of professional storytellers like him. In his telling, everyone was a storyteller. "You might not think of yourself as a storyteller," he said, "but the shit we say to one another, those are stories."

> I feel like even the idea of countries is storytelling. I feel like the American dream is a story. Obama was a story. The idea of change. Being patriotic is a story. If you look at America, I think growing up in America must be very interesting because you grow up in a country where you're repeatedly told this is the greatest nation in the world, the greatest country on earth. There's no Kenyan child who's ever told you're growing up in the greatest country in the world. It would never happen. So, for me that's why I approach storytelling as doing something very powerful, very potent, something that even governments could invest in to change the way their citizens think about themselves and about the world.

Chuchu is far from the only one to make the case for, or to appreciate the transformative power of, a story. In many ways, his assertions echo those made by narrative theorist and members of Silicon Valley's community of innovators alike about the power of storytelling that we saw in Chapter 1. As Chuchu pointed out, the United States is particularly good at taking advantage of the power of a story – constructing historical origin narratives that glorify the founders, telling war stories that position America ever on the side of good and light, and telling future-facing stories of possibility and perseverance that make up the larger narrative about the American Dream. It is no wonder that such a country would be the birthplace of the modern practice of entrepreneurial technology innovation, a practice that has 0at its core both a belief in the ability to build a better future through technology innovation, and a belief in the ability of individual entrepreneurs to bring about big, world-altering, social change.

In Chapter 1, I argued that Silicon Valley's innovation practices have come to form the basis of a global community of innovators. But *how* it came to do so is another matter. Some aspects of the answer to that are more apparent and have been more thoroughly studied than others. For one, as I showed in Chapter 1, there has long been a close and interdependent relationship between venture capital investments and the creation and growth of technology startups. Israeli management and economics scholars, for example, have even shown that a fully-formed venture capital market was only able to emerge in Israel because if 'co-evolved' with the emergence of the country's 'high-tech' startup sector (Avnimelech & Teubal, 2006). And while venture capital firms themselves have historically focused on companies in one geographic location (Haemmig, 2003) or on networks of connected individuals to promising markets in other countries (Madhavan & Iriyama, 2009), a number of new publications from management scholars have shown that the high-risk high-return nature of the relationship between venture capital investing and advanced technology production is leading them to look for innovators in new place (Agmon & Sjögre, 2016; Kenney, 2017). The reasons behind this have been explored in far greater detail by management and economics scholars than I intend to do here. Suffice it to say,

there is now a financial incentive for investors to look beyond Silicon Valley for startups and entrepreneurs in which to invest that can generate "VC-like returns" (Kenney, 2017, p. 26).

In tandem of course is the improved access that peoples around the world have to technological products and the increasingly virtual nature of the products produced making them far more easily transported than the physical computers and silicon chips that were the mainstay of Silicon Valley in the 1980s. The virtual nature of the practice of software development in particular has made it far easier for people in vastly different parts of the globe to both learn how to code and develop their own applications without needing the vast technological resources of Silicon Valley. Even if finding and securing investment often still requires face-to-face contact, the virtual nature of the product means that innovators in Bangalore, Berlin, and Nairobi are all potentially able to sell the products they've designed directly to non-local markets.

This chapter goes beyond factors like those above that give people in places like Nairobi the *ability* and the *resources* to build their own software applications, and instead asks what makes the Silicon Valley model of technology innovation *attractive* to people in Nairobi? I propose that at least a part of the answer to that lies within communicative ecology around Silicon Valley's technology innovation practice, particularly in its stories and narratives.

For a community so aware of the importance of telling compelling, inspiring stories, as we saw in Chapter 1, it feels like an oversight to look at how Silicon Valley has managed to expand its practices to become a global community without looking at the role that stories and narratives have played in making that possible. In this chapter, I hope to "shed light", as Jim Chuchu would say, on this under-examined area. To do so, I will first build on the theoretical work I did in Chapter 1 about the role of stories and narratives in communities and will use that to look at how they operate in less geographically confined more imagined communities, like the global community of technology innovators. I will then use this framework to examine a particular set of stories—stories about how *anyone anywhere* can innovate revolutionary new technology—and the instrumental role they have played in helping the creation of a global community, including to places not traditionally associated in stories with technology innovation, like Nairobi, Kenya. Finally, focusing specifically on the Kenyan case, I will show how these stories appealed to Kenyan audiences through 1) the integration of diverse settings, heroes, and storytellers into the stories about technology innovation, 2) the interaction between these stories and real-world events, and 3) the resonance these stories have had with the pre-existing narratives and aspirations of Kenyan techies and entrepreneurs. I hope by the end of this chapter to have made a persuasive case for the important role stories and narratives played in encouraging Kenyans to adopt the practice of Silicon Valley innovators.

Narratives and Transnational Communities

If you recall, in Chapter 1 I defined *stories* as both true and untrue tales told by individuals or organizations that come with a story arc, a hero, and sometimes a lesson. By contrast, I defined narratives as the larger culturally dominant tales that are formed through the telling and retelling of many similar individual stories. In a community, its narratives are constructed as its members tell their own stories or retell old canonic ones; narratives in turn come to construct the community, influencing members' perceptions of how members should behave, what the community's boundaries are or should be, who does and does not belong, and what membership and belonging should look like. In otherwise, I view a community and its narratives as mutually constituted. As the narrative scholar, Julian Rappaport, wrote, "a community cannot be a community without a shared narrative" (Rappaport, 2000). Shared narratives give communities a sense of coherence and their members a sense of belonging.

Even more so than in geographically confined communities, community narratives are especially important in 'imagined' communities. Just as American narratives about the founding fathers or the American Dream give Americans a sense of national identity and belonging, narratives can play an important part in the construction of the imagined national communities that Benedict Anderson so famously described (B. Anderson, 2006). They convey a sense of share experience when members never actually meet; they provide the basis of communally agreed histories and goals; they provide a sense of 'belonging' across physical borders; and they provide a guide for accepted behaviors and practices and for identifying other members. Other scholars have shown, for example, how shared narratives have helped build a sense of transnational imagined community within Asian or European regions (Bondebjerg, 2016; Sun, 2017) or among diasporic communities (Cayla & Eckhardt, 2008; Newon, 2014).

Religion provides a particularly effective illustration of how geographically dispersed communities develop a sense of identity, or as McMillan and Chavis and others have called it, a sense of community (McMillan & Chavis, 1986). In an article on religion and cultural change in Africa published in 2010, the Nigerian socialogist Samuel Zalanga wrote "as Africans in both the rural and burgeoning urban centers convert to Pentecostal Christianity, they become aware that they belong to a new community. This new community is not built on kinship or even tribal, ethnic, or geographical identity. It is an imagined community that exists at the national and international level" (2010, p. 46). For Zalanga, one of the primary ways this imagined community is made real to its members is through the circulation of "goods, ideas and people" (2010, p. 46). For example, he argues that "through the frequent exchange of speakers from within the nation and internationally, the cognitive orientation and worldview of the new converts are broadened" beyond their national landscape (Zalanga, 2010, p. 46). These individuals often come and recount their own stories, frequently stories of their own conversion that help listeners to build an understanding of what makes up a 'typical' person within that particular religious community, and what kinds of practices, experiences, and beliefs are expected.

In the modern manifestation of both religious and diasporic communities, new communication technologies have come to play an important role in how the core beliefs and practices that unite the community are conveyed across borders (Helland, 2007; Parham, 2004). Take the example of the Evangelical Christian community explored in great depth by anthropologist Simon Coleman in the 1990s. Through ethnographic research with one branch of the church in Sweden, he observed how emphatically the community had embraced the then new mediums of "radio, cassettes, videos, satellite and cable television programmes" (S. Coleman, 1996), and had begun selling and distributing things like televised sermons throughout the transnational community. Through the distribution of this content, he wrote, "members gain access to an imagined, translocal community of Christians engaged in a world-wide project of evangelization, and their imagination is sustained by constant flows of personnel and commodities through an internal economy of evangelical culture" (S. Coleman, 1996). More recently, religious apps have become big business helping the faithful engage with their own transnational religious community (Bell, 2006), to, for example, identify particular passages from the Bible (Not Just Words), to know which direction to point to prey to Mecca (Quibla Compass), or to simulate the act of counting prayer beads (Virtual Japa Mala).

Similarly, in a global community of technology innovators virtual content plays an important role in informing community members of the happenings throughout the globe. Online magazines like *TechCrunch* available in any part of the globe with an internet connection, convey stories of entrepreneurial success and failure, stories saturated with techno-visionary imagery, like the revolutionary power of technological advancements. Video broadcasts of the latest product releases from companies like Apple or of speeches from "though leaders" on the TED stage about driverless cars, 3D printing, artificial intelligence, and virtual reality provide content individuals around the globe can watch repeatedly to spark the imagination of members worldwide in an imagined community that is ever facing the future (Shandrow, 2016). Even

stories critical of formerly successful technology entrepreneurs, like the many stories published about the ongoing corruption scandal surrounding Elizabeth Holmes, the former billionaire and CEO of the failed health tech company, Theranos (Kosoff, 2018), help community members to develop a common sense of which practices should be *excluded* from the community.

Books like *The Lean Startup* and *Lead and Disrupt* also serve a particularly important function in developing the sense of common best practices among technology innovators spread around the world, practices that help identify members from non-members. Like canonic religious texts that "communicate to members and to others what the community is like, how it came to be that way, and (sometimes implicitly) what behavior is expected" (Mankowski & Rappaport p.481), books like *The Lean Startup* convey what behavior is necessary in order to be successful as a technology innovator, particularly if an entrepreneur hopes to expand beyond his or her national borders. In the "acclaim for The Lean Startup" section at the beginning of Ries's book, Steve Blank, a legend of Silicon Valley, an entrepreneur, and a Stanford lecturer, described it as "the roadmap for innovation for the twenty-first century", while Randy Komisar, founding director of TiVo, wrote that "Starting *Lean* is today's best practice for innovators. Do yourself a favor and read this book." When key figures in a community point to a text and label it "the startup Bible" (Saltzman, 2014) they are telling community members that it is a text that should be referred to over and over again, a reference guide for how to behave and what to believe.

Often precisely *how* to behave is conveyed by way of stories within these texts, news articles, apps, and videos. Just as the personal stories of addiction and sobriety in the *Big Book*— the core text for the transnational addiction recovery community, Alcoholics Anonymous—teach behavior about how to stay sober by way of illustrated personal examples (Strobbe & Kurtz, 2012), so the GCTI books like *The Lean Startup* tell personal stories that teach the ideal behavior for building a tech startup. In fact, *The Lean Startup's* author, Eric Ries, even begins, in the very first sentence, with a personal story.

> Stop me if you've heard this one before. Brilliant college kids sitting in a dorm are inventing the future. Heedless of boundaries, possessed of new technology and youthful enthusiasm, they build a new company from scratch. Their early success allows them to raise money and bring an amazing new product to market. They hire their friends, assemble a superstar team, and dare the world to stop them. Ten years and several startups ago, that was me, building my first company. I particularly remember a moment from back then: the moment I realized my company was going to fail… (Ries, 2011)

As his story of personal failure unfolds, Ries here conveys the lesson that *anyone* using the 'right process' can be a successful entrepreneur. "Startup success is not a consequence of good genes or being in the right place at the right time," he writes. "Startup success can be engineered by following the right process, which means it can be learned, which means it can be taught" (Ries, 2011). For a community centered around a particular *practice*, like the GCTI, it is unsurprising that one of the most highly circulated texts is one with the express intention of telling people how best to *practice* entrepreneurship.

At the same time, not all stories resonate equally across all audiences. The story of the African migrant who sailed in a rickety boat across the Mediterranean, may lead some in his or her country of origin to feel inspired to follow suit, while at the same time raise concerns among some European audiences about the 'invasion' of their continent by foreigners. As a result, while core texts that travel unaltered across borders for diverse audiences to read, like *The Lean Startup*, do play an important part in storied community identity building, so does the ability of stories to transform over space and time while still retaining the underlying community narrative. As the narrative scholar, Francesca Polletta has written, it is the ability of certain narratives to adapt to different cultural and ideological contexts and still resonate as 'familiar' with diverse

audiences that gives them staying power. She writes: narratives "are influential not because they're told over and over again in identical form, but rather because they mesh with other familiar stories" (Polletta, 2009).

In fact, the act of retelling stories that adapt and evolve over time is so important to community and culture building that literary scholars Stephens and McCallum, wrote an entire book, *Retelling Stories, Framing Culture*, around the role of retelling children's stories. For Stephens and McCallum and others, retold stories do not remain unchanged. They evolve and adapt in the hands of different tellers and through the interpretive eye of difference audiences. As they write, "few retellings are simple replications, even when they appear to reproduce the story and point of view of the source. In such cases, the purpose is generally cultural reproduction" (Stephens & McCallum, 2013, p. 1-2). One example they give of the transcultural retelling of an original story is that of the Western adoption of the 'Arabian Nights' stories. Aspects of these stories that resonated particularly well in a Western interpretive context have become commonplace in Western storytelling, while others have been discarded. Stories of characters like Aladdin, Ali Baba, and Sinbad, traveling along 'rags-to-riches' type plots, are told and retold to Western audiences because the particular lessons resonated with existing Western ideology (Stephens & McCallum, 2013). In fact, they argue that because the context of these stories is unfamiliar to Western audiences, it is particularly important that they convey something familiar in order to make sense and resonate to such diverse audiences.

One way to tell stories across cultures successfully is to emphasize universal values that appear to transcend geography and culture. For Stephen and McCallum transcultural stories are frequently "constructed so as to convey a sense of universal human values, moral insight, and some aspect of cultural tradition" (Stephens & McCallum, 2013, p. 223). Though many scholars have also certainly shown the problems that arise when universality is assumed, particularly by storytellers embedded in Western ideologies (Bradford, 2007; Szilagyi, 2010). Another option is to shift character perspectives while telling a story—as in the case of someone recounting both sides of a fight that they had observed. Through alternating point of view, Polletta explains, "storytellers make it possible for listeners to identify with different perspectives and, at the same time, to recognize each one as incomplete" (2009, p.9). Yet another tactic may be to incorporate local characters into a foreign tale. Such was the case when African prophets were incorporated into Christian missionary tales to increase the relevance of missionary sermons to African audiences (De Kock, 1993), or even when Hollywood movies like, Iron Man 3 (2013) or The Great Wall (2016), increasingly (though often unsuccessfully) incorporate famous Chinese movie stars into films in order to appeal to a Chinese audience that makes up a growing portion of their box office revenue (Schwartzel, 2016). A final important tactic is for local storytellers to take up the mantle of furthering the community narrative in their own stories. Again, such is the case in the quintessential transnational imagined communities, religions, which incorporate regionally based religious leaders, like Pentecostal Ghanaian pastors, into the group of approved storytellers. While their foreign counterparts are often better able to speak to the general universality of the core beliefs of the community, the local storytellers are particularly adept at conveying the local relevance of an intangible global community to a local audience.

The Development of the Anyone Anywhere Narrative

Not long ago, all of the major innovations came from big research labs in the West. And Silicon Valley not only built the core technologies but also the best applications of these. This is where all the amazing advances happened. We no longer have a monopoly on disruptive innovation. The cost of building world-changing technologies has dropped exponentially and made it possible

for entrepreneurs anywhere to solve the grand challenges of humanity—and disrupt entire industries. (Wadhwa, *Tech Crunch,* 2016)

With the theoretical groundwork laid, I want now to look at how some of this has played out in practice in the context of the practice of technology on a global scale. In particular, I want to show how stories and narratives have helped enable the expansion of this community around the globe. To do this, I will focus on the evolution of a single *new* narrative that has emerged for this community, a narrative that I believe has played an important part in helping the Silicon Valley model of innovation become global. The narrative is embedded in the *TechCrunch* quote above: now, with access to "world changing technologies" *anyone anywhere* can build innovative new technology that can change the world. Through the telling and retelling of stories that support this narrative—stories told with different settings, different heroes, and by different storytellers—the narrative emphasizing the universality of entrepreneurial tech innovation has flourished. Much like global religious groups, core texts, the use of new technological mediums for storytelling, the emphasis on universality, and the circulation of iconic community storytellers has helped to further what I will call the Anyone Anywhere Narrative. While all of these aspects of storytelling around the Anyone Anywhere Narrative could comprise their own chapter, I will focus in the following pages on how a sense of global community and belonging is being made possible through both the addition of different settings, heroes, and storytellers, to the storytelling landscape, *and* the interaction between these stories and real-world events unfolding. As we will see in the final section of this chapter, I believe that in the context of Nairobi it has played at least a small part in persuading Kenyans to adopt these increasingly global practices.

Different settings

Large Western technology companies, like Google and Facebook—companies that themselves spread across the globe in a search for brand ubiquity—are good examples of iconic Silicon Valley storytellers who have expanded the setting for technology innovation and consequently their audience. In the two following examples, we will see that both companies expressly situate their stories in a global *setting* while retaining their company and their product as the story's hero.

  Below is an excerpt from a Google branded YouTube video. It was posted in 2012 to promote their then new venture, Google for Entrepreneurs, which was meant to help support entrepreneurs "wherever they are". The video begins by panning across an open plan room with black and red chairs and large windows. Three young white men are visible sitting at black tables, headphones covering or embedded in their ears, staring at computer screens while soft ambient spa-ish music plays in the background. The video cuts to an Asian woman with an American accent named Mary Grove who we're told is the "Head of Google for Entrepreneurs." Grove narrates:

> Google for Entrepreneurs is our umbrella effort of all of Google's programs
> and partnerships to support startups and entrepreneurs around the world.
> Today we have roughly fifty efforts live in over 30 countries around the
> world….One of my favorite programs is called Jagriti Yatra and it's a train
> ride across rural India with about 400 really energized youth and mentors.
> They discuss and they iterate and they get off really inspired and ready to go
> out there and implement that idea. (Google for Entrepreneurs, 2012)

  In this video, Google is the story's clear hero; Google is the one *acting* to support "startups and entrepreneurs around the world". Grove later shifts to telling stories *within* this larger story about specific project that Google is helping to support; the excerpt above shows one from India. The Indians who ran and participated in the project became the subjects of this story within a story. "They"—the participating students in India—"discuss" and "get off [the train]

really inspired". By even including an example from India (all the other specific examples they gave were from Western contexts) Google is providing a specifically developing country context to argues that the entrepreneurs they work with really are *anywhere*. At the same time, the overarching "hero" of the larger story in this particular video is undeniably Google for Entrepreneurs for the service it is providing in supporting all these inspired global innovators.

A 2016 interview with Facebook CEO Mark Zuckerberg provides a similar example from another Western corporate. In the video, Zuckerberg is being interviewed by a representative of the infamous Silicon Valley startup incubator, Y-Combinator. The video begins with Zuckerberg and his interviewer seated in a room encased in windows overlooking a large brightly lit space that seems like it could either be a coworking space or a factory floor, with all the material culture familiar to any Silicon Valley innovator. The way both interviewer and interviewee are dressed also echoes the material dress culture described in Chapter 1. In fact, the two look a bit like mirror images of one another: similar sandy brown hairstyles, dark jeans, sneakers, and t-shirts both in shades of grey. The interview is part of a series Y-Combinator has done with leaders in the tech field called "How to Build the Future", a series clearly intended to give an amplifying platform to "tech-visionaries" who can see the future and tell a story about it in the way others cannot. Zuckerberg has clearly embraced this role. In the interview, he lays out three things he believes are central to Facebook's "roadmap to the future". The first and seemingly most crucial of these three is *connectivity*. He tells a story *about the future* to explain why he believes connectivity is so important:

> Connectivity, right so getting everyone in the world on the Internet. Right now, more than half of the world is not on the Internet and I think a lot of people in Silicon Valley take this for granted. The Internet…it just is not uniformly available. And if we want to solve a lot of the big challenges today they're not problems that any one group of people or even one country can solve. They really involve coming together and giving everyone an opportunity to participate in solving them. So I think connecting everyone is really a key thing. It's going to be great for people around the world. (Y Combinator, 2016)

Interestingly, while still being physically situated in an office in Silicon Valley, Zuckerberg tells a story about the importance of *global* connectivity to fulfill the promise of one of the shared values of Silicon Valley innovators: that new technology can save the world. Through the addition of a very global setting in his story, Zuckerberg is using the strength of an existing community belief—a belief in the importance of using new technology to solve big problems—in order to make the case for adding a new belief, the belief that global participation is necessary to achieve that goal. Like other transcultural storytellers, Zuckerberg is really emphasizing the universality of this story. In his eyes, it really applies to *everyone*; everyone everywhere *needs to* be involved in this process of making the world better through technology. Underlying this excerpt is his inference that Facebook is an, if not the, essential component in providing the technology for the global connectivity that's necessary to literally save the world. Like Google in the previous clip, in Zuckerberg's story of a possible future, Facebook is the catalyst that will enable people around the world to participate in solving the big challenges; they are the real heroes, the hero behind the scenes.

Like the corporates, some of the core texts of Silicon Valley (*Forbes*, *Tech Crunch*) have, over the last eight years and particularly over the last four, begun including stories set outside of California. For these core texts, I focus here on texts that are more likely to reach an audience from the majority of technology innovators across the globe. For cultivating a sense of a community in a national technology innovation community, national tech blogs and Twitter communities can play an enormous role. But in countries like Kenya they are rarely read by non-

African audiences, unless those audiences are specifically seeking out information about technology innovation in Africa. By contrast, most of the Kenyan techies I worked with had heard of *Forbes* and *Tech Crunch* and most read articles on at least a semi-regular basis. At the time of writing, *Forbes* was also intentionally cultivating a global audience, publishing 38 different international print and corresponding online editions of its magazine, including Forbes Africa, China, India, and Latin America.

I want to take a closer look at *Forbes* for a moment. In 2011 (incidentally just one year after the opening of the iHub), a Kenyan journalist named Mfonobong Nsehe began writing a column for *Forbes*, called The Africa Chronicles, in order to, according to his bio "chronicle Africa's success stories and track its richest people" (Nsehe, 2017). In March 2011, when he first started writing the column, both of his stories *Forbes* published were about African billionaires and did not focus on tech entrepreneurship. However, beginning just the following month two were. The first, "Google Funds African Tech Startups" (Nsehe, 2011b), told the story of Google entering the tech entrepreneurship market in South Africa in order to support its growth; the second, "Why Africa May Never Produce a Facebook, Groupon, Zynga or Google" (Nsehe, 2011a), praised the potential of African tech entrepreneurs but lamented the lack of capital inhibiting their growth to unicorn status. Both of these are examples of stories that are situated in Africa, at the time something quite new for a Western news outlet talking about technology innovation, but did not feature African grown heroes or real "success stories" as Nsehe had sought out to do. That has come with time as his column has taken up the mantle of telling the story of a 'rising Africa'.

In each of these examples, the new globally situated stories were being told alongside real-world events. In the case of the corporates, the stories they were telling were set in a global community and were accompanied by (or even used to justify) real world actions they were taking to actively turn towards the rest of the world while at the same time trying not to turn away from their American origins. In the case of *Forbes*, it is perhaps self-evident that a news outlet should be reporting real news events. However, in such traditionally US- or Western-centric news outlets, the stories they tell can often be behind the real trends taking place, particularly when they take place outside of their traditional scope of interest.

Different heroes

Gradually, traditional storytellers of the technology innovation community, like *Forbes*, have started to include different heroes. For example, in 2011 *Forbes* created its 30 Under 30 list to celebrate the "brightest young entrepreneurs, breakout talent and change agents in 20 different sectors" (Howard, 2017). In many ways, this list, and the personal biographical stories *Forbes* includes for each winner, put these winners front and center as "heroes" and shapers for future progress to come. For industries that value newness and youth highly, like the technology startup sector, focusing on people under 30 is particularly fitting. The list holds the individuals on it up as archetypes of their respective industries, the ideal that we should all strive to be. At the time they started this list, and for the following four years, it only focused on people within the United States. However, in 2015 *Forbes* launched 30 Under 30 Africa, and in 2016, 30 Under 30 Europe and 30 Under 30 Asia, celebrating entrepreneurs in each of these regions. Such a shift gives some indication that *Forbes*, a veritable agenda setter in the innovation and entrepreneurship news scene in the US, believed that there was enough entrepreneurial activity happening in those regions and that it would be sufficiently of interested to their audience that it was worth creating region specific competitions. By choosing to begin featuring African and Asian entrepreneurs so prominently in 2015 and 2016 respectively, *Forbes* included those region's winners as new heroes of the global tech innovation story, allowing people from developing countries to be seen as archetypes of the practice of technology innovation to a global audience.

Yet this integration of new heroes at *Forbes* lagged behind real world successes. If we think of *success* for entrepreneurs around the world in the same way that Silicon Valley innovators would think of it, building a startup that become a 'unicorn' – making a substantial profit for the founders and investors – would most quickly come to mind. A well-known non-American example of this kind of success might be Waze. In June 2013, Google reportedly bought Waze for $1.3 billion (Cohan, 2013). The success of Waze helped establish Israel as the "Startup Nation" and spurred on an explosion of Israeli startups (Agmon & Sjögre, 2016; Demers & Yemen, 2015; Pasher, Pross, Kushnir, & Neeman, 2017). Waze was Israel's first unicorn. But by the time *Forbes* launched its non-US 30 Under 30 editions, Waze was far from the only unicorn outside of the United States. In fact, in 2015 when the Africa 30 Under 30 list was first published, there were more unicorns coming from *outside* of the US than *inside* it (47%), a trend that continued into 2016 when US companied accounted for 46% of all new unicorns that year (CB Insights, 2017a).[5] This level of success for non-US startups was, admittedly, relatively new. Of all of the unicorns to emerge in non-Western countries, only 3 from China and 1 from India reached such an astronomical exit valuation before 2014. But over the following years, gradually, real life, success stories seemed to be coming from places outside of the expected center of innovation power, the United States, and even outside of Europe and China. Israel's second unicorn came in 2015; Latin America got its first two in Colombia and Argentina in 2015, and Sub-Saharan Africa got its in 2016 in Nigeria and South Africa. New, real life non-American successes, eventually meant more depictions of non-American heroes stories about successful technology innovators. And these different heroes often did more to expand global conceptions of what a successful technology innovator could look like than the earlier stories of old heroes in different settings.

Different storytellers

The further addition of non-American, non-Western storytellers who are recognized as members of the growing global community of technology innovators onto platforms with a global audience has been another important step in building the Anyone Anywhere Narrative. If you recall from Chapter 1, storytelling, whether on a physical stage or a virtual one is a performative act, and as a result the identity, stance, behavior, accent and more can influence the way in which a story is received and interpreted. Just like the emergence of successful real-world technology companies from different parts of the globe, the addition of successful techie storytellers from 'peripheral' regions into the mainstream storytelling platforms that had historically paid more attention to Western storytellers appeared to give visual evidence that people from any race, gender, or part of the world could belong to, and be successful in, a global community of innovators. Such platforms include writing guest columns for mainstream news outlets about technology innovation, like *Tech Crunch* and *Forbes*, as well as giving talks at important innovation conferences like South by Southwest or TED.

Let's look at TED for a minute. Its audience is ostensibly even broader than those practicing technology innovation in its coverage of topics that stretch far beyond technology, and its catch phrase, "ideas worth spreading" (CITATION). But TED—which is, after all, short for Technology, Entertainment, Design—has played an important part in getting the stories of iconic Silicon Valley techno-visionaries to a much broader audience than traditional 'techies'. Steve Jobs (2005), Sheryl Sandberg (2010), Elon Musk (2013), and Bill Gates (2010) have all spoken at TED; and their videos all have over 4 million views. Like these iconic figures of Silicon Valley's innovation community, a number of figures famous within Kenyan have also spoken to a world stage at TED. Eric Hersman, Juliana Rotich, and Ory Okolloh are all members of the team that

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[5] The CB Insights site tracks companies that became unicorns from 2009 onwards

built the Kenyan crowd mapping software, Ushahidi, that provided a platform where Kenyans could report instances of violence during the post-election violence of 2008. They are also all members of the founding team of the iHub, and all TED fellows. Before that, they were some of Kenya's earliest and most well-known bloggers. And while their TED videos have far fewer views than those of Jobs or Gates—Rotich's video has 638,000(TED, 2013) and Hersman and Okolloh's videos both have under 500,000 (TED, 2007, 2009a)—TED is one of the platforms where techies from Kenya have been able to tell their stories to an audience that is as global as most audiences get.

Let's look for a minute at Rotich's talk, the most recent and the most viewed of the three. Giving a speech titled "Meet BRCK, Internet access built for Africa", Rotich is immaculately dressed in a fitted black dress with a beaded African necklace and belt standing in front of the iconic red "TED" sign in an otherwise dark auditorium. She tells three specific stories about projects she'd been involved in—Ushahidi, the iHub, and BRCK—to paint an overall picture of Africans building technology. Combined, these three contribute to an overarching narrative she is constructing about Africans building technology to solve not only their own problems but the world's. For example, at the beginning of the talk she tells the story of the success of Ushahidi beyond Kenya. In the course of the Ushahidi story, she gives the following personal reaction to its success:

> We did not imagine that there would be this many maps around the world. There are crisis maps, election maps, corruptions maps, and even environmental monitoring crowd maps. We are humbled that this has roots in Kenya and that it has some use to people around the world trying to figure out the different issues that they're dealing with."

With this kind of statement placed at the end of her Ushahidi story, Rotich emphasizes the success they'd had of scaling their product *beyond* Kenya, *beyond* even Africa, to help people solve their own problems further afield. Presented this way, Rotich's story flips the earlier Facebook and Google ones on their head and positions Africans as the real heroes whose work is empowering people in other, supposedly *more* developed parts of the world, rather than the Western corporates empowering Africans as the story more typically goes.

Rotich concludes her talk with the story of BRCK, the new venture that she has really come to talk about. As she tells it, the creation of BRCK is a story of persistent blackouts in Nairobi interrupting the work and productivity of Kenyan coders; it is a story of how the team behind Ushahidi built a piece of hardware because they were frustrated with relying on ill-fitting Western technology. "Why," she asks with the art of a good storyteller, "do we use technology designed for London and Los Angeles when we live in Nairobi and New Delhi?" "What happens," she asks, "when Africans are no longer global consumers of solutions, but creators?" She wraps up the entire talk with this: "The building blocks of the digital economy are connectivity and entrepreneurship. The BRCK is our part to keep Africans connected and help them drive the global digital revolution." With these words, she echoes Zuckerberg's story of the importance of global connectivity to the tech enabled future that they both clearly envision. Like Zuckerberg, she skillfully takes advantage of an existing core belief about the role of new technology in bringing about social change and uses it to promote the key role that her product, the BRCK, and its creators are playing in bringing that about. Like Facebook for Zuckerberg, BRCK is positioned as Rotich's hero that will enable the connectivity necessary to bring about the "global digital revolution." The difference is that this time while the setting is still global, both the heroes and the storyteller are Kenyan. Because this story of an African-led techno-future is being told by a woman who was herself involved in the events in the story, she gives added credence to the narrative that anyone anywhere can and should play an active role in dreaming and building the future.

The Anyone Anywhere Narrative in Kenya

In the remainder of this chapter, I want to look at how the evolving Anyone Anywhere Narrative was seen and heard among the members of Kenya's own technology innovation community and why, particularly in the early years of this decade, it resonated so much with these Kenyan techies and entrepreneurs. Crucially, I am not talking about the experience of Kenyans as a whole. My research method does not equip me to do so and Kenyan who are engaged in the practice of building technology startups are far from the national norm. But the in-depth nature of ethnography does allow me to talk in some detail about how stories around the Anyone Anywhere Narrative were communicated to this unique audience and how it resonated with and influenced them. I'll talk first about the ways in which members of Kenya's technology innovation community have been exposed to stories that support the Anyone Anywhere Narrative, and then about how the stories are modified and altered in the hands of Kenyan storytellers, and reinforced by real world events Kenyans have seen around them. Finally, I will look more at the ways in which Kenyan entrepreneurs and programmers that I knew and worked with have reacted to these stories and why they think they have resonated so much with Kenyan audiences.

Virtual storytelling

Kenyan techies and tech entrepreneurs, like many of their counterparts around the world, are a particularly plugged-in group. They have a rich information ecology that is comprised of in person communications, traditional Kenyan news outlets, and the vast array of information available online. They are usually based in Nairobi and come from the middleclass, or the so-called "rising middle-class" (Bhorat, Kharas, & Pita, 2017; The Economist, 2015); the vast majority is in or has been to college and has access to fast broadband internet. Import taxes can make getting the latest foreign products more expensive and more cumbersome than it is in the US; and as Rotich described, power outages are a semi-regular occurrence, even in Nairobi. But even during these blackouts, most Kenyans in this group can continue to consume news and information on the fast 4G internet on their mobile phones, and an increasing number do so on smart phones. They are also often particularly keen to stay up-to-date on the latest news, both tech related and political. Most Kenyans techies I came to know were on Twitter first thing in the morning, consuming news and producing content. They read Kenyan tech blogs and mainstream Kenyan business news, like *The Business Daily*; they also read other African tech blogs, particularly from Nigeria, as well as *Tech Crunch* and *Forbes*; they watched YouTube instructional videos and TED talks, and took online programming or design courses. When *Forbes* began its 30 Under 30 Africa list, they saw it; and when Samsung launched the Galaxy S8, they read the *Gizmodo* review. They watched Juliana Rotich's speech at TED and the popular American pitch show, Shark Tank, even if they didn't watch them live. This community is far from representative of the average Kenyan. With a national poverty rate of 42 percent (UNICEF, 2018), and the percentage of urban poor in Nairobi increasing, these more privileged individuals stand apart in many ways. But they do make up the majority of the Kenya technology entrepreneurs. With such a high level of connectedness, this community of Kenyan innovators has had as much virtual exposure to the broader Anyone Anywhere Narrative as their counterparts in Europe and Asia. Like the members of the transnational Christian communities described earlier, through tech enabled hyper-connectivity, these connected Kenyans have become a part of a global audience of technology innovators.

In-person storytelling

Also like their counterparts in the transnational Evangelical communities, Kenyan techies get firsthand exposure to stories that support the Anyone Anywhere Narrative through visits from

speakers from other parts of the global community of technology innovators, or from Kenyans who have experience abroad. This includes, for example, 'glocal' (S. Avle, 2011) Kenyans returning from engineering and computer science programs abroad, foreign investors, foreign entrepreneurs, and representatives from large corporates, and global startup competitions.

When startup entrepreneurs and other techies visit Kenya in person, many – especially representatives of global startup competitions – are particularly vocal advocates of the Anyone Anywhere Narrative. Like Facebook, their business model depends on it. Even in the comparatively short history of the global community of practice around technology innovation, truly global startup competitions are a relatively new affair. Startup competitions that focus on finding entrepreneurs in Silicon Valley are hardly new, but those with a genuinely global scope have only really taken off since about 2013. Two prominent such competitions, Seedstars World and the 1776 Challenge Cup, for example, both started in 2013. [6] To get a sense of the kind of stories the organizers of these competitions tell, take a look at the following excerpt from a blog post that preceded the first regional round of a global competition called Startup World, which began in 2012.

> It's inevitable there will be the next Steve Jobs, Mark Zuckerberg, Google or Facebook, the question is; where in the world will they come from? As the cost of innovation decreases and governments all over the world invest in startups to try and create the next Silicon Valley, entrepreneurship and startup culture is now a global *story* where more people than ever are plugged in and switched on… While there's certainly advantages to building startups in Silicon Valley due to the sheer amount of entrepreneurs, venture capital and access to talent, startups and entrepreneurship are movements happening all over the world [emphasis added]. (Way, 2012)

The tone is both euphoric and matter-of-fact, in the way techno-visionary storytellers are when they recount techno-optimist futures that they believe have already arrived. The blog post author, Hermione Way, portrays the rise of non-American tech titans as an inevitability, a natural progression of technological advances and falling production and distribution costs. Way both establishes the setting of her story, and the story about "startup culture" in general, as a global one, and, like Google and Facebook, constructs and draws on the Anyone Anywhere Narrative to reinforce the need for the product she is selling: The competition. In so doing, she at once wants to convey Startup World's belief that *anyone anywhere* could become a believable hero of new global stories of innovation *and* makes the creation of a global startup competition, like Startup World, seem unavoidable.

Nairobi has become a frequent destination of these global startup competitions, often playing host to their Africa regional rounds. When the competition organizers come to Kenya, they emphatically reiterate this global narrative in person, taking on the role of preachers for the global relevance of technology innovation. Seedstars World held one of their regional rounds in Kenya in 2016 and one of the competition's representatives participated in a community event at one of Nairobi's coworking spaces that I attended. There, he told stories from his travels—stories about how he'd been to 14 different countries in Africa alone and about how he truly believed that "innovation and entrepreneurship are literally everywhere". To illustrate his point he told the story of a company from Algeria that had built a customer relations management software that

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[6] Oddly, the current websites of most of the competitions don't offer much information about the history of these competitions, focusing almost exclusively on the current one, with the exception of highlight the winners of the previous year. To confirm the start dates, I used the Wayback Machine to look at websites for these competitions from previous years. Other examples include World Cup Tech (2015), G-Startup (2016)

was now being used by people in Silicon Valley. Silicon Valley! For him, the Algerian example was a success both because it was being used in the traditional core of innovation *and* because the company's founders had brought a global mindset to their innovation; they thought beyond a purely Algerian customer base. To reiterate this, he told another story about Mali, a country he'd recently visited. "Sure," he said, "you can start a tech company in Mali, but where are your customers going to come from? They're not in Mali." Mali, here seemed to be chosen as an extreme sort of example, an archetype of a place of poverty that can participate in global innovation only if its innovators think beyond their local environment. In so doing, he added a sort of caveat to the Anyone Anywhere Narrative: Anyone anywhere can participate in global technology innovation *as long as* they think globally and endeavor to scale beyond their nation's borders, except perhaps the Chinese. With a population of nearly 1.4 billion, Chinese companies like DiDi Chuxing from Chapter 1, don't experience the pressure to scale their products beyond their national borders, pressures that even American companies – with a domestic population less than a quarter of China's – continue to feel.

In addition to the organizers of global startup competitions, other visitors from Silicon Valley and other parts of the global community of innovators who come through Kenya often give talks, participate in panel discussions, and have innumerable informal conversations with Kenyan innovators. The stories they tell often serve to reinforce not only the Anyone Anywhere Narrative, but also the global community's other underlying narratives, like the Technology is Good Narrative from Chapter 1.

One notable example of this is a talk series hosted by the iHub, primarily in its early years (2010-2013) called "Fireside Chats"—a term itself rooted in American culture, originally being used to describe radio broadcasts that President Franklin D. Roosevelt gave between 1933 and 1944 that people listened to in their homes. For these chats, an iHub representative, often one of the founders, would engage speakers in an informal chat, typically focusing on things like how they'd achieved the success they've had, how to develop a successful business plan, their work habits, their motivations, and their dreams. Some of the most prominent foreign speakers include: Joi Ito, the Director of MIT's Media Lab (2014); Renaud Visage, CTO and co-founder of Eventbrite (2014); John Scully, who served for a time as the controversial CEO of Apple (2015); and first and most famously, Marissa Mayer, when she was still VP of "local maps and location services" at Google (2011). Marissa's and many other Fireside Chats were free and open to the public to attend and were virtually circulated later on the iHub's YouTube channel and their website. Through such 'chats', Mayer and other speakers use stories to convey to Kenya-based audiences both the promising new globality of technology innovation as well the prescribed best practices for how to go about building technology (i.e. the way Google did).

The Kenyans Can Narrative

Foreigners visiting Kenya were far from the only ones telling such stories. Kenyan storytellers include, of course Julianna Rotich and other Kenyan TED fellows, but also, successful Kenyan CEOs, entrepreneurs, tech bloggers, politicians, and successful or otherwise prominent tech companies. They give their own fireside chats at the iHub, write product reviews and opinion pieces in blogs or Kenyans newspapers, speak on panel discussions at Nairobi Tech Week or Innovation Week, and visit universities and coworking spaces.

In Kenyan hands, the stories feeding into the global Anyone Anywhere Narrative, often take on a narrower, more specifically Kenyan focus. Akin to Western storytellers retelling the Arabian Nights stories to better suit American audiences, these Kenyan storytellers are adapting the broad Anyone Anywhere Narrative to be more relevant to their Kenyan audiences, often with the express intention of inspiring future Kenyan tech entrepreneurs. While Rotich was speaking to a global audience in her TED talk, the story she told resembles many of those told specifically for

Kenyan audiences. They feature Kenyan heroes and Kenyan storytellers, and often begin with a Kenyan setting and at times eventually move abroad. In that way, Kenyan storytellers are not telling stories to inspire *anyone* to want to become a member of the global community of technology innovators, but are telling stories that point directly to their Kenyan audience and say emphatically and optimistically: '*You* have the potential be a successful tech entrepreneur! *You* can build revolutionary technology that can not only help solve problems around you, but that can help people solve problems around the world!'

The iHub and its representative have been some of the most prominent in Kenya to embrace this brand of storytelling. As I will show in greater detail in Chapter 5, they have proactively worked to inspire Kenyans to embrace technology entrepreneurship. In a chat over lunch, one of the iHub's staff members told me about their outreach with counties and university students. Even in 2016 when I was conducting the majority of my fieldwork, Kenya's community of technology innovators was largely confined to Nairobi with far smaller pockets in larger secondary cities like Mombasa in the east and Kisumu in the west. The iHub's outreach in the counties, she explained during our chat, was focused on encouraging the growth of local technology entrepreneurship in other regions, particularly in counties where government officials had already demonstrated some interest in supporting tech innovation. The iHub sent representatives to the counties to meet with government officials, give speeches to local youth groups, and, in some cases, conduct trainings to help local leaders to set up local tech community spaces. Similarly, the iHub representatives often visited universities to help "inspire students to go into tech entrepreneurship" through campus based talks and training sessions. She admitted that most of the students who attend were typically IT students so they weren't exposing students to tech for the first time so much as encouraging students already interested in tech to follow more non-traditional career paths outside of corporates and into startups.

Over the last five to ten years, government officials and government bodies have also begun to try to tell their own versions of this story, typically with the objective of constructing a narrative about the country as a whole, and not just individuals, as innovative and tech-savvy. A good illustration of this is found in presidential speeches. In the last few years, current President Uhuru Kenyatta (who was controversially re-elected in 2017) has spoken about the innovative nature of Kenyans and the growth of Kenya as a global leader in technology innovation. In 2015, five years after the first event was held in the United States, Kenya became the first African country to host the Global Entrepreneurship Summit (GES). The message that Kenyans excel at innovation (even if the government has not always done a good job supporting them) was the underlying lesson in a story President Kenyatta told during his keynote speech at the event.

> Kenya's interest in innovation and entrepreneurship is not new. Ngugui wa Thiong'o [a famous Kenyan author] reminded me yesterday of a young man called Gacamba. Years ago, he saw a plane, and became passionately interested in flying. When he returned home, he patiently built his own plane, which flew for a short distance, before crashing. But that Kenyan ingenuity was not lent the support it deserved, and little more was heard from him. That episode reminds us of two facts we must keep in mind: that Kenya has ingenuity and innovation to spare, and that we have not always been good at supporting our innovators and entrepreneurs.

By choosing to tell a story about a single individual, one outside of the typical Kenyan elites who more often are the 'heroes' who get the most attention in the domestic news, Kenyatta sought to convey the message that it is not just elite Kenyans like himself who are exceptional and innovative, but that all Kenyans have the potential to be technology innovators.

In 2016, President Kenyatta again spoke on the subject during the first annual national Innovation Week, hosted by the University of Nairobi. This time, he told a more macro story about Kenya as a nation rather than about an individual:

> We are not as rich in land as other nations you could name. But this has not prevented Kenya from doing better in elevating our nation's prosperity, because we have applied our ingenuity to our natural gifts. Our energy and innovation, which is the core foundation of our people, is really the true wealth of our nation. That is the way a majority of the nations in the so-called 'first world' have managed to achieve their socio-economic status. It is ingenuity and innovation not natural resources that matters most for a nation's prosperity.

Through this national level story, Kenyatta delivers the message, not that Kenyans have the *potential* to be innovative, but that their *ongoing* innovations are putting their country on an equal footing with their Western counterparts. In this version, it is not just Kenyans who can individually belong to a global community of innovators, but Kenya as a whole.

Supporting events

Like the global Anyone Anywhere Narrative, the narrower narrative aimed at a Kenyan audience that one might call the Kenyans Can Narrative has gained strength because it has been accompanied by real world events that appear to provide evidence of its truth. In the early years of the growth of a community of technology innovators in Kenya, a few products gained a certain level of success and received even more media attention helping to provide evidence to Kenyan audiences that Kenyans really could design world leading technology. Ushahidi, the crowd-mapping software described in Rotich's TED story, is one such example, but it is only really known abroad among humanitarian workers, where it has been frequently used. Far more prominent is the case of M-Pesa.

M-Pesa is a mobile banking platform that allows people anywhere in Kenya to transfer money to one another and to businesses without the need of a bank account. It was launched by Kenya telecommunications giant Safaricom (with the help of its British partner Vodaphone) back in 2007, two years before the American startup Venmo launched its own peer-to-peer mobile payment platform and fully seven years before Apple launched ApplePay. Domestically, M-Pesa had become an enormous success. By 2011, fully 72 percent of Kenyans living outside of Nairobi and below the poverty line reportedly used M-Pesa (McKay & Mazer, 2014), and by 2013, close to 50 percent of the country's GDP reportedly "flowed through" the platform (Runde, 2015). It was celebrated by international and domestic media alike as a "success story of digital financial inclusion" (Ndung'u, 2017) that had "fundamentally altered the landscape of financial services in Kenya" (McKay & Mazer, 2014) and that was transforming Kenya into an "innovation and technology hub" (Runde, 2015). And indeed, since about 2010, Kenyans had begun building startups that made use of the M-Pesa platform allowing Kenyans to use their mobiles to access loans and to pay a variety of different vendors, from grocery stores to solar power providers to pay-as-you-go cooking gas entrepreneurs. And while M-Pesa has had less success abroad than many people expected (Fengler, 2012), it has undoubtedly reached one key milestone of 'success' familiar even to entrepreneur in Silicon Valley: 'disrupting' a country's banking industry. Whether or not it has had enormous success abroad, M-Pesa has been so important to Kenya, and particularly Kenyan tech entrepreneurs, that its introduction is sometimes refer to as the "M-Pesa revolution". Said one government official I interviewed: "We had the M-Pesa revolution…and you see it contaminates; once you are successful on something you get more confident that you can succeed in another. M-Pesa has given Kenyan innovators confidence that they can succeed." Over the more than 10 years since M-Pesa was launched, Kenya startup scene has grown,

attracting an increasing number of international investors. By 2017, the total amount invested in startups in Africa as a whole was reportedly $560 million (Kazeem, 2018), over three quarters of which went to startups in just South Africa, Kenya, and Nigeria. In the rise of what began to be described as a "Africa's tech movement" (Bright & Hruby, 2015), Kenya frequently came at or near the top of the list of countries to watch.

Since the introduction of M-Pesa, a number of other things have taken place that seemed to provide further evidence of the veracity of the Kenyans Can Narrative. Particularly between 2012 and 2015, there has been rapid growth in the number of technology startups in Nairobi. Even if the majority of these were more two guys and a laptop type of companies than a 'disruptive' success like M-Pesa, their growth was still very visible to those interested in tech in Nairobi. Such growth seems to have been particularly concentrated in fields like agriculture, finance, education, and health. A handful of these companies have also had success in global startup competitions and in raising funds, and a similarly small handful of entrepreneurs have had success selling startups and being invited to conferences and events abroad. The mobile supply chain software, Twiga Foods, for example, placed in the African regional round of the global startup competition, 1776's Challenge Cup's in 2015 and then went on to win the entire global competition held in the US. Kenyan entrepreneur, Hilda Moraa, also successfully sold her financial technology startup, Weza Tele, for $1.7 million in 2015 (Jackson, 2015b); and a handful of companies, like Rotich's BRCK, have raised funding rounds of $3 million and more. While many of these numbers pale in comparison to the billions being exchanged for the top American or Chinese tech startups, they are nonetheless markers of success.

Since the introduction of M-Pesa, there has also been a spike in global interest in Kenyan technology innovation. This has included, for example, companies like Microsoft, Nokia, Samsung, and Google giving financial support and training budding Kenyan mobile innovators, and companies like intel, Philips, and IBM setting up regional offices in Nairobi and hiring the most highly educated Kenyan programmers and engineers. It has also included a wave of prominent international visitors, like Marissa Mayer and Mark Zuckerberg, as well as foreign investors looking to identify Kenyan tech companies worth investing in, or praising the country's status as a "global leader in mobile money" (Zuckerberg, 2016).

Concurrently, there has been an increase in the amount of coverage Kenyan innovators have received in core texts of the global community like *Forbes* and *Tech Crunch*. Since 2010 when the iHub opened, international headlines about Kenyan innovation have proliferated—headlines like "Kenya to lead technology revolution" (Cossou, 2011), "Meet the Tech Entrepreneurs Bringing the Digital Revolution to Africa" (Burg, 2014), and "The Rise of Silicon Savannah and Africa's Tech Movement" (Bright & Hruby, 2015). Kenyans also featured prominently in both of Forbes' 30 Under 30 Africa lists, signaling Kenyans, along with Nigerians and South Africans, as leaders of the African technology innovation community. In 2015, Kenya tied with Nigeria as the second most represented country (with 5 winners) after South Africa; and in 2016, Kenya was the most represented country with 6 winners. Through this kind of exposure, Kenya became in a way one of the go to examples of 'success' in unlikely places, helping to feed and reinforce the Anyone Anywhere Narrative to global audiences. Look! Even in Africa! Even women in Africa, like Juliana Rotich and Hilda Moraa, can be successful technology innovators!

The interpretation of the Anyone Anywhere Narrative

How has all of this been seen and interpreted by the specific audience of Kenyan technology innovators? Individuals in this group, like individuals everywhere, often wrestle with a complex set of identities, existing community narratives, beliefs, and aspirations that all influence their decisions and how they perceive themselves and the practice of technology innovation in Kenya and abroad. Earlier we saw how narrative scholars, like Francesca Polletta have demonstrated that stories are believable when they resonate with existing stories that we already know and believe.

This seems to have been the case in Kenya where important values that are shared among Silicon Valley's innovators have also resonated with Kenyan techies and entrepreneurs, particularly in terms of both their *identities* and *aspirations*. The stories these techies told me about Kenyan identity and Kenya as a whole were, like many identity stories, filled with contradictions. They painted a picture of a nation weighed down by its colonial history filled with people who had internalized colonial era narratives about the inferiority of African products and a government that did more to help itself than its people. But they also depicted a nation that was a regional leader filled with tech-savvy early adopters, people who were forward thinking, self-reliant, entrepreneurial, and keen to take the initiative to solve their own problems despite the government. Through the many discussions and interactions I had with this community, I found that the Kenyans Can Narrative resonated in many ways with the positive side of these existing narratives about Kenyans, particularly their *identity* as forward thinking, tech-savvy, and entrepreneurial. I also found that the practice of Silicon Valley style technology innovation – particularly as it was described in the stories of Silicon Valley's techno-visionaries – also resonated with the aspirations of this community, particularly the desire to *be* self-reliant and independent of both government and foreign donors, and the desire to *be seen as* successful, regional leaders, on a par with their Western counterparts.

Identities

Given that the community I spent most of my time working with was largely made up of self-identified "techies", it's perhaps no surprise that many in this group described Kenyans, at least young Kenyans, as particularly tech-savvy and eager to adopt the latest new gadget. But it was a quality they repeated many times, often when positioning Kenya in comparison to its regional neighbors. One programmer at the iHub, for example, told me the following story of where he saw Kenya going in the next 20 years:

> I can say, if I compare Kenya with East African countries, I'd say Kenya is a step ahead. I have never been to Tanzania, but they're not as developed in so many things, like techie things. In Kenya, we have embraced tech. With the coming in of things like Safaricom and M-Pesa people have had that idea that tech can solve things; we see tech as solution to so many things. The belief that tech can really take us to a higher level compared to how we were before is something Kenyans have embraced. You see, if you look, we're heading in a good direction. In 20 years, honestly, we'll have things like electric trains, robotics, and stuff.

Note how in this response, he positions Tanzania (even though he'd never been to Tanzania!) as a particularly backward contrast to the strengths of Kenyans. In my interactions, Kenyans invoked this favorable comparison frequently. Note also how he uses the adoption of M-Pesa as an illustration. He gives the example of M-Pesa, a *real-world* example, to provide irrefutable evidence for his characterization of Kenyans as tech savvy and early adopters. At the end of this excerpt, he paints a futuristic picture of Kenya that resembles echoes many of the characteristics depicted in techno-visionary stories from the likes of Elon Musk.

Early adoption of Twitter was another real-world example often given to add credibility to the assertion that Kenyans are particularly tech-savvy. Kenya was ranked third in sub-Saharan Africa after Ghana and Nigeria in terms of Twitter usage in 2016, so it is indeed a Twitter loving country (Agutu, 2016). For one techie, such vociferous use of Twitter demonstrated their superior ease with technology because they would have to be "tech-savvy" in order to use what he described as a platform that was "not user friendly". Another example occasionally given was the eagerness with which Kenyans adopted Uber. "Kenyans like Uber," I was told by one Kenyan

entrepreneur. "New tech comes in, they test it out and if it works they'll keep it, if not they'll throw it away. We are very discerning. Uber works well so we kept it."

Global narratives about anyone anywhere starting companies and building technology also seems to have resonated among this group of Kenyans because it spoke to another existing aspect of Kenyan identity—the entrepreneurial spirit. In fact, by the end of my most recent time in Kenya it became apparent that while this group of Kenyans do identify as "tech-savvy", entrepreneurialism and business acumen are far more fundamental to a broader sense of Kenyan identity. More times than I can count, I was told that Kenyans have an especially "entrepreneurial spirit". Similar descriptors, like "enterprising," "ingenuity" and "hustling", were also frequently used. In fact, this identity as people who are shrewd businessmen goes back a long way to old Swahili fables. When I returned to Kenya in January 2016, my new Kenyan housemate offered me a book from her shelf titled *Myths & Legends of the Swahili* (Knappert, 1970), "to help understand where we're coming from". One of the fables in the book was the story of Abu Nuwasi, a "trickster" hero who uses his wits to punish rich and greedy men. The following story, called "Abu Nuwasi Builds a House", is a good example of how such stories convey the Swahili beliefs in the virtue of a shrewd, even cunning approach to business that many modern Kenyans pride themselves on.

> One day Abu Nuwasi built a house of two storeys. He sold the upper half to a merchant and lived in the lower half himself, for a long time, very peacefully. One day he wanted to go and live somewhere else, so he asked the merchant if he was interested in buying the ground floor. The merchant, however, was not interested. Abu Nuwasi said nothing, went away and came back with a dozen labourers. He warned the merchant: 'I am having my house demolished, for I have no more use for it, so hold on to your own and don't say I didn't tell you.' So the merchant agreed to buy the ground floor for the price Abu Nuwasi wanted. (Knappert, 1970)

One data scientist I spoke with frequently reiterated the virtue of being a shrewd, if cut-throat, businessman, like Abu Nuwasi, and the long history Kenyans have of doing so. From his perspective, building technology businesses was appealing for Kenyans not because it had anything to do with technology, but because it was a new thing for them to be enterprising *about*.

> Kenyans, by virtue of our culture, our way of life, or anything else, they are already very enterprising, so this tech just came as something else they could do…Tanzanian socialism inhibits this. I think people should be as selfish as possible; that's what grows economies. I think it just goes back to your way of life. In Kenya, there was already an existing way of life focused on building businesses better than others – rearing chickens, enterprising coffee farmers, more radio stations than other countries. In Tanzania they watch Kenyan TV programs!

In this description, the speaker is describing a nation of capitalists who are blessed with keen eyes for spotting good business opportunities and an ability to build them up successfully since long before technology had become the thing to build in Kenya. Like the programmer cited earlier, this data scientist also invokes the comparison to Kenya's seemingly inferior neighbors.

And the truth is entrepreneurs do seem to be everywhere in Nairobi, including outside of the tech sector. In January 2016, when I needed to move house and went to look at apartments, I met two Kenyan women who would eventually become my housemates, both of whom were entrepreneurs, though not of the tech variety. One ran a jewelry and home furnishing business full-time while the other, a government CPA, was building up a "life coaching" business in her spare time. Entrepreneurship has also long been seen as a core component of Kenya's informal

economy. As David Himbara, a Rwandan political economist, has written, the entrepreneurial drive of Kenyans in the informal sector known as "jua kali", a Swahili phrase referencing the hot sun that many laborers work under at their stands along the side of busy Nairobi roads (Himbara 1994, p. 100), is a key driver of economic growth in the region. While not usually jua kali businesses, many people in the tech sector had, or were formerly involved in, non-tech businesses as well. One Kenyan man involved with a foreign venture capital fund also worked part-time running a tourism promotion company; another, who ran a tech entrepreneurs' club had formerly run a camping and hiking business before turning to tech. More common still are Kenyans who own property somewhere and are either developing it for real estate or for agriculture. And of those I knew involved in the tech sector who did work other than run a company—community managers, researchers, data scientists—to my surprise, many told me they had actually previously started a tech company or planned to do so in the future. As you might notice, it is not only incredibly common for Kenyans to see themselves as entrepreneurial, but many are also engaged in *multiple* enterprises, a practice colloquially referred to as "hustling".

A few of these comments also belie another part of modern Kenyan identity: the belief that they are, in some way, ahead of their regional neighbors. In casual conversations, like in the excerpts above, Kenyan techies and entrepreneur often compared themselves and their compatriots favorably to their regional neighbors, particularly Uganda and Tanzania. To further emphasize their distinction from their neighbors, they would also occasionally liken Kenyans to Americans, exposing an underlying association or desire for kinship with the birthplace of the the global community of technology innovators. One interviewee described Kenyans as Americans because we're "always questioning things", as opposed to Ugandans who were like Canadians because they're seen as "laid back" and Tanzanians who were like Cubans because of their "socialist history". In another variation on this theme, I heard one Kenyan describe his compatriots as East Coast Americans because they were "all business" in contrast to the Tanzanians whose "laid back" nature was, somewhat ironically, likened to Californians. Through these associations with Americans, these techies were indicating an underlying belief that Kenyans, like Americans, are naturally inclined towards excelling at business and innovation.

In these ways, global stories about how anyone anywhere can be successful as a technology entrepreneur, and Kenyan stories about how Kenyans can not only be a part of that, but excel at it, understandably resonates with existing perceptions of the positive aspects of what make Kenyans Kenyan. If your perception is that you and those around you are tech-savvy, entrepreneurially inclined, and more advanced than your neighbors, it is easy to begin to see how Silicon Valley style of technology innovation might appeal.

Aspirations

I also found that the Silicon Valley's particular style of technology innovation appealed to the aspirations of many young networked middle-class Kenyans. In particular, I found that it resonated with their aspirations *to be self-reliant* and to *bring about positive change* for themselves and their communities in the face of an unreliable government, as well as their aspirations *to be and be seen as regional leaders* and *equals with others around the world*.

There is, as I was often told, a strong desire among Kenyans to be self-sufficient. This seems to have come, at least in part, from a long-standing distrust of government and of those in power, who are frequently perceived as greedy and corrupt. Another classic Swahili story from *Myths & Legends of the Swahili* (Knappert, 1970) demonstrates how long this kind of perception has been around. This story is called simply "The Stick" and resembles a vast number of such fables that depict sultans, chiefs, and other kinds of leaders as both foolish and greedy and depicts poor laborers and peasants as justified when they trick or otherwise defeat greedy leaders. It goes as follows:

A trapper found a stick in his trap. 'What shall I do with a stick?' He shook it, and a piece of silver fell out. The trapper went back to his village and he bought all the food he wanted. The chief heard that the trapper had a stick that vomited silver, so he came to the trapper's house and said 'Give it to me.' The trapper called: 'Stick, stick, they are coming to take you!' The stick flew into the chief's face and beat him. The chief fled from the village and never came back. The people made the trapper chief. If only we could all find a stick like that.

The representation of the chief in this story as greedy is very much present in modern day perceptions of Kenyan leaders. A good illustration of this is in the case of the proposed ICT Practitioner Bill that came before the Kenyan Parliament in 2016. The introduction of the draft made particularly angry waves among many I knew in the tech sector. If passed, it would have required every individual defined under the bill as "ICT practitioner" to pay an annual fee of KSH450,000 (US$450). The document defined ICT practitioners in such broad terms almost anyone could potential fit under its purview; an ICT practitioner was anyone who engaged in "the practice of ICT as the case may be, for a fee or gain either in kind or cash" (Duale, 2016). For many in Kenya, even among the wealthier techies, this US$450 sum is significant, particularly if you run a company employing multiple "ICT practitioners". The introduction of the bill was seen by many in Kenya's community of technology innovators as a confirmation of two things: the government's lack of real understanding of what tech innovation needs *and* its greed and desire to profit from the growth of an industry it saw but did not fully understand.

There was sometimes such distrust for government among the tech entrepreneurs that there was often an active attempt to distance themselves from it. For example, when I attended Innovation Week – the innovation conference where the president came to speak – few tech entrepreneurs I knew came with me. Many told me they thought it would be a waste of time. One of the few who did come told me afterwards with a tone of resignation that even though the President's speech at Innovation Week seemed to imply he would be making innovation a priority, nothing would change.

One particular criticism of the government voiced repeatedly to me—though usually in whispers—was that of corruption. Corruption was pointed to as the reason for the introduction of the ICT Practitioners Bill and for the willingness of government representatives to voice support for the tech sector but then fail to deliver. For many in the Kenyan tech sector, the perception of government corruption was very real. One entrepreneur summed up many of the concerns I heard when he exclaimed:

With anything on government…there's corruption all around…When you talk to [government] people individually, they say 'Wow!' 'This is amazing! We need more of this!' But then it just stops there. And if they do agree to give you support, by the time the money gets to you there are so many mouths waiting to take a bite of it that there's little left by the time it gets to you.

Here, a "bite" is a reference to an extremely common Kenyan metaphor of "eating" used to represent corruption.

As a result of these and innumerable similar sentiments, most people in the tech sector I met have a real belief—a similar belief, in fact, to those in Silicon Valley—in the power of the private sector to solve problems that the government has not or will not. One Kenyan venture fund representative told me about all the problems he saw that the government *should* be helping with—education, healthcare, unemployment—that he believed the private sector was doing a much better job at addressing. He explained that it was "a matter of trust". While he had lost faith in the government, he *trusted* the private sector—and the ability of startups in particular—to

actually do something about the very real problems he saw. In fact, this perception of the government as corrupt and an unreliable problem-solver seems to have gone hand in hand with the Kenyan proclivity for entrepreneurship. When the government is unreliable, people turn not only to the private sector, but also to themselves.

In the midst of a disheartening political climate, the Kenyans Can Narrative seemed to offer a reason for optimism. In representing average Kenyans as the heroes of their own stories of progress, it seemed to offer hope in the face of an inept and adversarial government; it seemed to offer hope that average Kenyans can turn away from their government, turn away even from donors and international NGOs (discussed more in Chapter 3), and, relying only on themselves, be the ones to bring about change in their communities. In the course of a much longer conversation, one Kenyan techie told me about the tone of optimism and possibility that the growth of the startup tech sector in Kenya seemed to have brought about.

> Right now, Africans are more comfortable with their countries, with who they are and where they come from, but not with how things are. That makes them believe more in themselves. People are building stuff, having conversations, collaborations. So, for me, of course, if those things work, then it's good, it's great; but for me, the fact that people are believing in themselves to do it, that's what matters. Maybe I think this because of the space I am in. But because of employment and stuff, people are starting to see startups as an option for them. The tech sector has played a role in creating the confidence. I find Kenyan women more empowered now. And for me a sign for progress is how far women have pushed things. So, when I see a woman telling the president to shove it, freedom of expression and the belief in opportunity are in a healthy place.

The proliferation of stories told by Kenyans about Kenyans building technology startups that have a real impact seems to have helped to inspire people in this community to believe that progress was not only possible, but that they could build it themselves. It spoke to a longing for hope and possibility that has rarely been present in stories about Africa or Kenya.

The Silicon Valley model of technology entrepreneurship, and belonging to a global community of practice, also seem to have appealed to this group of Kenyans, in part because it appeared to offer a new path towards equality with the West, equality at both individual and national levels. The falling costs of production and distribution of software products seemed to offer a new real opportunity for Kenyans to compete on level ground with the West.

At the national level, this led to a push for Kenya to take advantage of this opportunity, to train future innovators so the country would not be "left behind". Weighed down by the history of Kenya's perpetual state of being a "developing" country, ever behind the West, technology innovation that could seemingly be done by anyone and then sold to anyone seemed to offer Kenya a real chance to catch up. This fear was frequently on display in Kenya's innovation community, including at a conference on 3D printing I attended in August 2016 held at Kenyatta University in Nairobi. The keynote speaker—one of the few who'd both been in government and was respected and trusted by Kenyan techies—spoke of his hope that "Kenya doesn't become a laggard" in the development of 3D printing, and encouraged the students in attendance to become innovators and leaders and no longer followers. A representative from the university articulated this fear when he announced the creation of the university's new "African Center for Technology Studies". "It is our responsibility," he said, "to prepare our students for this new world for technology not merely as adapters and followers but as innovators and leaders. Africa should not be left behind. It is with this in mind that Kenyatta University in partnership with the African Center for Technology Studies, that is ACTS, have embarked on a unique project to establish a center for excellence on 3D printing technology for Africa."

Moreover, I also found that the interrelationship between the Kenyans Can and Anyone Anywhere narratives also appeal to many individual-level desires to be equal to the West. As one Kenyan entrepreneur explained:

> Kenya's a very aspirational country. I think it's part of…You know the tech scene in Kenya is driven mostly by the middle-class and emerging middle-class and they have the aspiration to be on par with their western counterparts. So, a lot of what they see in the West they will take on, imitate, frankly. I think they feel they want to have the same cool quotient as their counterparts anywhere in the world.

For this entrepreneur, the desire to be equal to those in the West was particularly strong among middle-class and emerging middle-class Kenyans, who typically had the greatest exposure to Western media and Western ways of life. For many others, it was not just a desire to be equal but to be *recognized* as equal. As one iHub employee explained to me:

> We always want to be the lead in most things, especially to be the lead in East Africa…so we can say: 'Yes we did it!'. We always want to be first. So, I think I'd describe Kenyans as having a combination of high aspirations and pride…Comparing us to other African countries, we like to brag a lot about being better than others. That I know for a fact. We'll make sure we're aggressive enough to overtake them. We want to be the first.

In this comment, we can see both a desire to be first and to be *recognized* for this accomplishment. Stating explicitly that Kenyans like to say "yes we did it!" and to "brag a lot" emphasizes that it is both the accomplishment itself *and* the acknowledgement that matter.

Conclusion

Larger narratives and individual stories that we hear and tell play an important, if often unrecognized, role in informing both how we understand ourselves and how we engage with the world. In the modern manifestation of the information society, where news and other stories and the products of advanced technological labor can all seemingly be disseminated instantaneously to people across a planet connected by high-speed internet, it is no wonder that inspirational stories about how anyone anywhere can become a technology entrepreneur have circulated just as rapidly. Existing research tells us that such narratives can play a key role in validating a community, encouraging a sense of community among members, and reinforcing the community's norms of practice and belief. It also tells us that, like in transnational religious communities, core narratives can play a particularly important role when the community is more imagined than tangible and more global than local.

In the case of the global community that has emerged around the practice of technology innovation, the development and dissemination of a new community narrative—the Anyone Anywhere Narrative—seems to have helped people in diverse locations to feel like involvement in this high-tech global community of practice, traditionally associated primarily with the United States, was a realistic possibility for them. I am in no way arguing that the growth of this narrative was the sole factor in the adoption of a Silicon Valley style approach to technology innovation around the globe. Economic factors like the falling cost of production and distribution in this industry, the falling cost and improving speeds of internet access, and an investment model that emphasizes global scalability have all been instrumental. But with the success of technology innovators outside of Silicon Valley, and the proliferation of stories about them that included

diverse settings, heroes, and storytellers, people outside of the US have begun to see people who look and sound like them in the success stories.

In the Kenyan context, stories around the Anyone Anywhere Narrative took on a more specific, more Kenyan focused tone in the Kenyans Can Narrative, conveying the message not just that anyone can become a technology entrepreneur, but that Kenyans are particularly well suited to it. This message seems to have resonated with the aspirational hyper-connected Kenyan middle-classes and helped to inspire more Kenyans to try their hand at technology startups. The Kenyans Can Narrative did not immediately allow Kenyans to become full legitimate members of this global community instantly, but it did allow many to believe that it was possible and inspired them to try. Evidence from my time in Kenya shows that the stories that helped to construct the narrative were able to do so because their underlying message of hope and possibility resonated with both pre-existing beliefs this community had about Kenyan identity, particularly the Kenyan proclivity for entrepreneurship and for regional leadership, and their goals and aspirations, particularly the desire to be self-reliant and perceived as equal with their counterparts in the West.

Like the stories of many global technology innovators, including the techno-visionaries, the story I've told in this chapter is a positive and optimistic one; it's a story about how people in Kenya have, through access to high-speed internet and exposure to inspirational stories, been motivated to adopt the the practices around Silicon Valley's model of innovation. But that story is only one piece of the whole; it is only the most visible part of the larger experience of Kenyans turning to both the global practice of entrepreneurial technology innovation and the larger global information society. While such narratives may have helped inspire people in Kenyan to join and to try their hand at technology entrepreneurship, they have not proven sufficient to help them be seen as fully legitimate members of this global community. The larger story is, as every real story, a far more complicated one; it includes a struggle under immense pressure to conform to the norms of a global community that was formed in Silicon Valley not in Silicon Savannah, and perseverance under the weight of existing sticky narratives about a continent that receives rather than produces and needs help rather than helps others.

CHAPTER 3: BARRIERS TO LEGITIMACY AND BELONGING

I want to recount a different story now. If Chapter 2 told the story of inspiration and hope, of how entrepreneurial ambitions were incubated, and how global success as innovators of new technology began to feel within the reach of a Kenyan audience, Chapter 3 will—in the words of the tech entrepreneur—pivot. I will endeavor here to recount, as accurately as I can, some of the many stories of real Kenyans that I came to know as they worked to gain legitimacy and be taken seriously both at home and abroad as technology innovators in 2016. Being inspired and actually being taken seriously are not one and the same. Hearing stories of successful African tech entrepreneurs and actually living in the world behind those stories, actually joining this expansive diverse Global Community of Technology Innovators (GCTI) as full legitimate members, able to pitch ideas, raise money, and build something that people actually want or need and (importantly for the GCTI) are willing to pay for, those are unfortunately quite different things. Below are just a handful of stories from the real people that I met and got to know in Nairobi and their experiences trying to join this global community. In some, I have changed their names and details about their businesses in order to preserve anonymity. But all the other little details, the optimism and the struggle, the expectations and the lived experiences, are all real.

The GCTI is made up of an enormous number of diverse positions—from investors to public relations specialists and corporate sponsors to researchers and programmers. But for this chapter I have focused exclusively on individuals playing the role at the center of any community around the practice of technology innovation, the *technology entrepreneur*. As I showed in Chapter 1, of all the different roles in the community, the tech entrepreneur is the one around which all the others revolve. While programmers and developers are equally indispensable to the practice of technology innovation in general, building for-profit startups around the design, as I argued in Chapter 1, is what set Silicon Valley style technology innovation apart from other ways in which technology is experimented with and built. As a result, each of the four stories that I will recount in this chapter will revolve around a Kenyan entrepreneur. Some of these entrepreneurs are also engineers or software developers, but they are all trying to build companies around these designs.

Paul: Success, Failure, and Barriers to Legitimacy

In July 2016, I met Paul in the back garden of a small and slightly shabby corworking space on one of the quieter dustier streets of Nairobi. He wore black pants and a burgundy polo shirt and his hair was trimmed short. Paul was an entrepreneur who ran a small hardware startup, though he preferred to describe himself as an engineer. He had a calm, pensive, and professional presence despite his young age. As a child, Paul had done the tinkering with his parents' electronics typical of a future engineer. As an undergraduate at the University of Nairobi, Kenya's preeminent public university, he connected with others who had also developed childhood tinkering habits in student groups and in a larger group of "tech enthusiasts" called Skunkworks. Soon after, he heard about the iHub through other members of Skunkworks and was excited to see what was going on there and to meet the people behind the Ushahidi fame. So, he started going to the iHub's community space to work. It was further from home than campus and cost him more time and bus money to get there, but it had faster internet and was, at the time, filled with the energy of other tech enthusiasts. He attended workshops and discussion groups there about open source software, and voice over IP, and listened to talks from people like the head of MIT's Fablab and Bitange Ndemo, Kenya's then-ICT Minister and key figure in Kenya's tech scene.

A year later, a 3D printing expert from the UK came to talk to students at his university and that was it. The idea of being able to make something from his imagination, to make for

himself the pieces he needed for his latest tinkering project? He was hooked. Even though he was nervous, he entered the startup pitch competition at the university that followed the talk; he placed as a finalist. That win got him additional training in how to pitch his idea to investors and a ticket to London for the competition's final. In London he failed to place, but eagerly watched all the other startup pitches, at least the ones after his, he'd been too busy rehearsing his 2-minute script to pay attention to the ones before. London turned out to be productive for him in other ways; there, Paul became friends with an American entrepreneur who placed in the final and who worked with him to get Paul's own idea for 3D printed medical parts off the ground.

 Soon after, Paul was able to get a small round of seed funding from British investors linked with the competition and began research and development to perfect his product. "At the time", Paul told me, "I really felt like we could do it—we could build something people in Kenya really needed." Talking with Paul that day in July, his desire to help people around him—to fix the things that the government wouldn't or that NGOs couldn't—was as clear as Nairobi's changing skyline. For Paul, the purpose of his startup was "first and foremost to help the community. Everything else is secondary. We believe the money will follow…I honestly think if you tackle one of these social issues there's a lot of money in it. Rather than making money out of a crazy profit margin you can make it out of the scale at which you sell."

 Meanwhile others began to see something in Paul's idea as well. His startup was covered in international tech news, he was invited onto television stations in Europe, and to speak at conferences and events all over the world. Pakistan, Berlin, Barcelona and even back to London for Mozilla's open internet conference, Paul was getting noticed not just for running a startup using 3D printing, but for running one in Africa. *His company was hailed as "having the potential to change the landscape of Africa" and "reducing Africa's dependence on imported goods".*

 But as the coverage glowed, over time Paul's key investor had become more cynical. "He's working in the 3D printing space in Africa, he's a rock star. It's tech saves the world Africa edition. What's not to love about that story? And yet, his business is struggling. The gap between the froth and reality can be so stressful." By the time we spoke in July, Paul's business really was struggling. After their initial seed funding, they'd run into problems raising additional rounds of investment, particularly problematic for a hardware company with expensive product development needs. Unlike software innovation more common in most Kenyan startups, hardware innovation is far more cost-intensive requiring expensive equipment, reliable material sources, and a larger physical space to build and store prototypes. With donor support, Paul had managed to get an American business advisor to come to Nairobi temporarily to help them with their business. She advised him to consider equity investment, where an entrepreneur gives away a portion of the company's ownership and often board seats in exchange for funding. Paul was reluctant to do so. "Maybe it's come to that [taking equity], but I don't want to give away something that I built. A friend of mine got an equity investment last year and didn't do enough due diligence and was kicked out of his own company by the investors. Maybe I'm on the extreme end, but because of such stories, I don't want to give up anything."

 For both Paul and his investor, one key missing piece at his company had been prior experience running a startup. "I don't really have trouble building the product," Paul recalled. "But learning what a successful business model looked like? No, I'm not good at that. I don't know anything about business." "The reality of what he's trying to do is difficult," his investor explained. "At the end of the day, he's a young guy. He's never run a business. His confidence ebbs and flows. Often when he hits a problem it's the first time he hits that problem. So beyond financing, we've been doing a bit of coaching and technical training, which I think is helping. Paul would say I bang on about this, but for me it's about what I would describe as creating a quality culture. One of the biggest struggles we've had with the work we've been doing with the startups in Africa is developing an understanding of service and quality. By that I mean, how do

you move somebody's mindset from it's good enough for Africa, to actually this is the best
product we could build full stop?"

At the end of our discussion, despite recounting all the troubles his startup was having
and its uncertain future, Paul described himself as "super lucky" to have gotten the small
funding that he did and to have gained the experience that he did. Yet his tone still barely hid his
incredulity at the future of both his own startup, and those younger than him aspiring to become
entrepreneurs too. "There are so many great ideas out there. But there just isn't the money. Or
they're not getting what money there is. Many people have brilliant ideas but they can't afford to
experiment".

~

Paul's story, while unique to him, echoed in others I met. Around Nairobi, I saw younger Paul in
the tentative and hopeful faces of students at Kenya's universities, in Nairobi's startup
bootcamps, at the iHub. Many had read the news stories about Kenya being the "tech hub of
Africa" or heard from someone who heard from someone about the excitement around Kenyan
made tech like Ushahidi, or simply about its perceived money-making potential and wanted,
sometimes quite desperately, to be a part of it. I could picture Paul nervously presenting his first
startup pitch in the posture and uncertainty of the new crop of aspiring entrepreneurs under the
spotlight of the new round of startup competitions. Some looked nervously at the ground as they
spoke while others spoke passionately about the farms or schools or hospitals that their product
was going to help, but uncertainly about how it could help others beyond Kenya. In the incubators
and co-working spaces, I found echoes of the media coverage of Paul's startup, of his optimism
when seed funding and invitations to conferences came, of connections made during travels
abroad and his conviction to use what he built to help people around him. And with increasing
frequency over the course of the years that I've been going to Nairobi, I began to hear the doubt
in Paul's voice that July as he talked about the uncertain fate of his startup in my conversations
with others, particularly other entrepreneurs who had seen some preliminary success, but like
Paul, had struggled to progress much further.

Lave and Wenger, the two scholars responsible for the community of practice framework
I introduced in the first chapter, might, if they heard his story, describe Paul, and the other
aspiring entrepreneurs around Nairobi, as *legitimate peripheral participants* (Lave & Wenger,
1991, p. 14) of the GCTI. Unlike most of their predecessors in the field of education who focused
largely on the internal, cerebral processes that govern learning, Lave and Wenger argued that all
learning – both inside and outside of formal classrooms – was inherently a social process in
which learners – legitimate peripheral participants – learn a new practice through participating
with existing practitioners, full members of a community of practice, thereby getting exposed to
the norms, practices, and expectations of a community they were trying to join. The most
fundamental example of this is that of a child, a preteen, and eventually a teenager who, through
co-participation with their family and other individuals in the world around them learns how to
act and how they are expected to behave in the adult social world. By integrating this concept of
legitimate peripheral participation with the community of practice framework, Lave and Wenger
provided a tool that allows us to examine the social dimensions around how people like Paul do
and do not gain access to a community of practice like the GCTI.

Through this lens, Paul could be described as going through a process of learning "what it
really takes" to be a technology entrepreneur in the Kenyan Community of Technology
Innovators and the GCTI through his experiences, even his failures. He is learning what is
expected of a GCTI "tech entrepreneur" not simply through the pitch coaching trainings he sat in
on or the talks at the iHub he listened to, but through his interactions with his investors, other
Skunkworks or the iHub members, other startup competition competitors, successful
entrepreneurs and investors he met at the competitions and conferences he attended abroad, and
through all his failed attempts to raise funds.

But Paul's peripherality to the GCTI makes his position, and the position of others like him, a precarious one. There are no guarantees that years of co-participation, of absorbing the practices and beliefs of the community, will lead to access in the end. As Lave and Wenger wrote "as a place in which one moves toward more-intensive participation, peripherality is an empowering position. As a place in which one is kept from participating more fully…it is a disempowering position" (Lave & Wenger, 1991, p. 36). Years later Wenger introduced a more useful way of making the distinction clear between the empowered and disempowered at the peripheries of communities of practice with the concept of a *marginal* participant (Wenger, 1998). Unlike a *legitimate peripheral participant*, who after training and practice based experience eventually makes his way into the community, a *marginal participant* either maintains a position on a community's margins or ends up on an entirely outbound trajectory. For Wenger, the glass ceiling, preventing women and minorities from accessing higher levels of white collar professions, is an example of the problems of marginal participation.

So, the question is whether Paul and those like him around Nairobi are indeed legitimate peripheral participants or in fact marginal ones. Is there a path ahead for them that leads to full GCTI membership, to Kenyan entrepreneurs being taken seriously by core community members back in Silicon Valley, or are they facing their own glass ceilings preventing them from accessing the community, and progressing up within it?

Despite all the initial excitement at the potential for technology innovation to take off in Africa, despite the proliferation of the Anyone Anywhere Narrative on the TED stage or in the pages of *Forbes*, more often than not, with important exceptions, the startups I saw and the entrepreneurs I met in Kenya were struggling. There are no Kenyan "unicorns", no billion dollar valuations, and only a handful of successful exits. But "struggling" does not necessarily mean they are marginal rather than peripheral participants. In fact, as Silicon Valley investors are often quick to explain, a part of becoming a serious and successful tech entrepreneur seems to require fetters and failures. Failures and pivots, restarts and rebrandings, and the ability to overcome them through sheer force of will, dedication, and a lot of all-nighters--these are the things that often make up the stories in the community's narratives about successful entrepreneurs and about how successful startups in Silicon Valley are built, what I call the Dominant Identity Narrative. Failure turned ultimately into a success is such a common refrain in the stories about successful Silicon Valley entrepreneurs that many have written about Silicon Valley's obsession with the "redemption narrative" (McGowan, 2016). As one journalist wrote, "you haven't really succeeded until you've failed, or at least come very close. Failing—or nearly failing—has become a badge of pride." (McGowen, May 12, 2016). Every successful tech entrepreneur in the Valley seems to have a story about how their first venture collapsed amidst their ignorance and arrogance, a sad but necessary step towards their eventual redemptive success. Such stories, like the one told by Eric Ries in *The Lean Startu*p, have become so commonplace that some kind of failure or struggle—and a good story to go along with it that fits into the Redemption Narrative— almost seems a prerequisite for becoming a *real* GCTI tech entrepreneur, an integral part of the community's Dominant Identity Narrative.

Indeed, many of Paul's stumbles resembled the typical Silicon Valley ones. He had little prior experience running a business and despite his enthusiasm and the media attention he received he failed to raise enough money to build his company up. Echoed in this is the story that Ries tells of his own first failure in *The Lean Startup*: "The dot-com bubble had burst, and we had spent all our money. We tried desperately to raise more capital, and we could not…It remains a painful memory. The company limped along for months afterward, but our situation was hopeless" (Ries, 2011, p.12). But unlike Ries, Paul's story does not fit in the Redemption Narrative, he has not yet redeemed himself with an ultimate entrepreneurial success.

In the literature on communities of practice, there are many kinds of barriers that restrict access to a community or progress within it. For Lave and Wenger, most barriers that prevent a marginal participant from becoming a legitimate peripheral one are a result of a lack of sufficient

exposure to the practices of the community that would enable the "newbie", as they call them, to become fully socialized. New participants must have access to existing full members, to those who have been in the community a long time, to people in various different positions within the community, and to the full extent of the "information, resources, and opportunities for participation" (Lave & Wenger, 1991, p.100). Without that exposure, it is difficult if not impossible to learn the ins and outs of how to behave that would enable them to participate in the full extent of the practice that binds the community.

Exposure to a community's practice is restricted through a number of mechanism, including, to begin with, the *structure* or *hierarchy* of the community itself. In their original publication, Lave and Wenger cite an interesting example of this from an ethnographic study conducted by Hannah Meara Marshall, who looked at the experience of butchers' apprentices in the 1970s. To obtain the certificate necessary to join the butchers' union, they needed to both take trade school classes and participate in on-the-job training in a butcher shop. However, the experience of many of these trainees demonstrated that the butcher shop often kept them isolated from the more advanced practices they needed to learn in order to become a master butcher, choosing instead to place them in repetitive tasks that would prove more efficient for the company, but less effective for training (Lave & Wenger, 1991; Marshall, 1972). Because of the isolating structure of the apprenticeship system, many of these trainee butchers never learned the skills necessary to advance very far in the profession, in other words, they became marginal participants ever on the periphery.

Other studies, particularly from linguistics have shown how high school cliques are examples of communities that are particularly difficult to access, often due to their hierarchical structure. In her 2005 article, the linguist Bethan Davies demonstrated how access to the tightly guarded 'jock' communities of practice in American high schools was often controlled by those at the top who had greater authority than any other community member to determine who was 'trendy' enough to join (B. Davies, 2005). Moreover, because membership in the jock community was highly desirable and exclusive, access was extremely competitive and membership of those at the lower levels of the hierarchy quite tenuous. By contrast, joining a 'burnout' community in the same schools—a community of practice that embraced failure and rejects 'trendy' culture— was much easier as it was less rigid and hierarchical, and membership in it is less desirable.

Like the high school jocks, the GCTI is hierarchical and competitive. Though it embraces failure like the 'burnout' community, it only does so if the entrepreneur has subsequently succeeded. The most iconic tech entrepreneurs, like Mark Zuckerberg, the wealthiest investors, like Jim Goetz, sit at the top, while tens of thousands of techies and entrepreneurs try to gain access by pitching their ideas at startup competitions or participating in acceleration or incubation programs across the globe. Also like the community of high school jocks, for many like those pitch competitors, membership in the GCTI—particularly the money and fame that appear to come with it—is highly coveted. It is, as I believe Lave and Wenger would argue, a natural part of communities with such structures that few who try are actually able to enter, or advance very far.

Despite the hyper-connected communicative ecology of the GCTI, despite the numerous visits from investors and entrepreneurs and techies from abroad, the plethora of startup competitions and accelerators that resemble those in Silicon Valley, some Kenyan entrepreneurs are beginning to worry that like the butchers' trainees, situated in Nairobi they are too isolated from the real heart of the global community that they are seeking to join. Some are concerned that, even with the quickening internet speeds making GCTI content online so accessible, the city that they love may not afford them enough exposure to the 'real' action, the 'real' networks, and the 'real' investors, who understand how things really work in the heart of the GCTI. Many of the entrepreneurs who have already had some success domestically in Kenya, have, for example, begun applying for the Y-Combinator business incubation program in the United States, because as the birthplace of success stories like Dropbox and Airbnb, it seems to provide far more

immediate access to inbound trajectories to GCTI legitimacy that what is currently available in Nairobi.

Beyond a community's structure, individuals or organizations can also act as gatekeepers restricting or enabling community access for newcomers and shaping what participation looks like for them in the future. The individuals at the top of the jock community pyramid have enormous influence over the borders of their desirable communities. Master apprentices, like in the case of the butchers, preside over both the training of new apprentices and their admission into the community. In fact, their role in granting legitimacy to new recruits is perhaps even more important than their role as trainers (Lave & Wenger, 1991, p.92).

Like with apprenticeships, organizations and individuals already regarded as legitimate members of the GCTI who preside over training or mentorship of the new entrepreneurs can act as gatekeepers. Accelerator or incubation programs, for example, where fledgling entrepreneurs are coached and their businesses slowly grown can confer legitimacy, particularly when such programs have a reputation for spotting success stories early on. Y Combinator is well known as the kingmaker of startup business incubators. Startup pitch competitions can also perform a similar role. Like the incubators, their ability to confer fledglings with real community legitimacy is related to their own reputations; winning Tech Crunch Disrupt is far more likely to lead to GCTI access than winning a small university level pitch competition. And at the very top, community heroes like Mark Zuckerberg can confer legitimacy just through proximity. During his August 2016 visit to Nairobi as I described in the introduction, Mark Zuckerberg was photographed meeting with the founders of a small startup. The photograph was subsequently posted to his Facebook news feed and the founders subsequently inundated with inquiries from interested investors, crashing their beta website. Similarly, investment itself can confer legitimacy on a new startup. Investors can give early seed funding that gives entrepreneurs the vital space to experiment with their technology and improve it before bringing it to market. Later, larger investments like series A or B or more can spotlight a startup as the one to watch leading to larger investments or higher valuations or company expansion or, for the select few, million or even billion dollar acquisitions.

Looking at the case of individual investors, if we consider them to be important gatekeepers to the GCTI and advancement within it, the question becomes: What motivates the choices of investors? What influences who they decide is worthy of their investment? Investors are not forced to explain their motivations to every entrepreneur they reject, but neither are they typically shy about making the profit maximizing motivations of venture capital known. The amount that other investors brings, that a company is worth, that it has the potential to make, the global scale that a company has the potential to reach leading to even higher profits, all can help persuade an investor that an entrepreneur is worth taking a risk on.

Unsurprisingly, this priority was corroborated by my interactions with many of the investors in Nairobi from those that lived in Nairobi to those who flitted through the city on their whistle stop tours of the GCTI periphery. In one event I attended, the American CEO of a startup competition (and head of the competition's seed investment fund) was presiding over a two-day training for competitors who had come from all across Africa. With the succinct confidence of someone already a full GCTI member, he presented the competitors with a bullet-point breakdown of what the judges (and therefore investors and community gatekeepers) would be looking for at the competition the next day, making little secret of the financial motivations of their would-be investor audience.

> What will the judges tomorrow be looking for? One: a compelling idea. Ok?
> You've gotta have an idea that sticks. Two: an *actual* product that solves a
> *specific* problem for a *particular* target customer. Three: A highly scalable
> business. As a venture capitalist, it's not just taking a risk on your investment;
> it's taking a risk on not going for other investments. The great thing is many

of you in Africa have unique problems and you need to really think how that is relevant *beyond* Kenya. Okay, what else are we looking for? Four: How do you make money? We certainly care that your startups are going to make an impact but we're not going to invest in it *if it's not gonna make us a lot of money*.

As the excerpt from this investor's speech made clear, the potential to "make us a lot of money" is often linked with a startup's potential to scale beyond Kenya. Unlike American entrepreneurs with a domestic market of over 320 million consumers, Kenyan entrepreneurs focusing domestically could only reach 48 million even if they reached every single Kenyan, a near impossible task. Even the most renowned technological innovation in Kenya, M-Pesa, only has a subscription base of 31 million (Donkin, 2017). As a result, where American entrepreneurs have the luxury of focusing primarily on the domestic market of a country whose culture they know very well, first, and then scaling abroad, as we saw with Uber, Kenyan entrepreneurs, even in the very early days of building their startups, are frequently pushed to think beyond the familiar borders of their country, and to demonstrate how their idea could compete at a *global scale*. In a good illustration of this, one European investor I spoke with told me the following story about a startup from Ghana:

> mPedigree developed a system where you put a code on medication packages and you can use that code to text into their system to see if it is a legit medication or not. They were from Ghana and had problems with bootlegged meds that made people sick, so they built this awesome company. So now, the mistake most entrepreneurs make is that after succeeding in Ghana they would try to expand to their neighbors in Nigeria. Instead, these entrepreneurs look at the next biggest market that had the *same problem*, not Nigeria, India. I very much believe in the potential to build local companies from Africa, I do, but only, only if you find a problem here that isn't *just here*, that's global, but that the world doesn't know exists yet.

Beyond looking at the numbers, how do investors, particularly those providing seed funding and looking at very early stage startups with entrepreneurs who are still learning the skills and practices of GCTI innovation, determine if an idea has the distant potential to make them "a lot of money"? One mantra that was often repeated to me by investors and experienced entrepreneurs alike was that investors "invest in entrepreneurs not in startups", that the human element, the strength of the team at the head of a startup mattered more than the product they were currently developing. This was certainly true of Paul's investor. He talked of seeing promise in the young eager but inexperienced engineer and wanted, like a master apprentice, to help him develop the skills needed to build a startup in the GCTI style. But time and time again, focusing on the human element seemed to lead to an oft-repeated refrain from investors that Kenyan entrepreneurs *lacked experience*. He doesn't know how to develop a business plan. She has no idea how to reach out to potential business partners. They failed to take the time to understand their user's experiences with their product, to make decisions quickly, to think outside of the box, to manage her team effectively.

This brings us to our second story. Unlike the other stories in this chapter, this next story is both widely known and widely debated in Kenyan tech circles and in the blogosphere. Most of the details that follow are publicly available or at least publicly contested. As a result, while I have concealed the sources of my information, I have chosen not to disguise the names of the company or those involved, so easily identifiable to any Kenyan reader.

Angani: Experience, Exposure, and Subconscious Bias

Angani refers to a Kenyan cloud computing company founded in 2013. Its name means "air" or "atmosphere" in Kiswahili. It had been so named following the trend of Kenyan startups adopting Swahili terms popularized by the success of companies like Ushahidi ("evidence") and M-Pesa (M-"Money"). In 2012, two Kenyans, Brian Muita and Phares Kariuki, sub-let a bedroom in Nairobi to use as an office to experiment with their idea of providing outsourced IT infrastructure and services to local companies. They incorporated the company in June 2013 and began beta testing soon after providing virtual machines and virtual storage—the "cloud"—to local companies initially free of charge. By January 2014, they began charging for their services, with Phares as CEO and Brian as CTO. An increasing number of local tech companies began hosting their data in Angani's "atmosphere", and Angani began building up its network infrastructure to support the increasing demand. In May of that year, Riyaz Bachani, an Indian Kenyan with a degree from MIT, was brought on as the new Chief Operating Officer to help Angani "scale its operations and expand its presence across the region"(Kariuki, 2014). By February 2015, Angani landed its first round of seed funding for an undisclosed amount. The new investors included Savannah Fund, a local VC firm headed by Erik Hersman, a white Kenyan and a prominent member of Nairobi's tech sector through his role in the founding teams of the iHub and Ushahidi who Phares and Brian knew from their earlier work with those companies, and a foreign VC firm headed by American Miguel Granier. At the time, Angani received both media attention and public praise. It became known as "the first fully automated cloud infrastructure company in East Africa" (iAfrikan, 2015); for some, it became a symbol of how successful companies built in Kenya could grow and attract even international attention. In a post on the company's blog announcing the new round of investment, Phares wrote that the funding was proof that "it is possible to build an internationally attractive infrastructure business in Africa."(Kariuki, 2015) It was praised as a key part of the solution to slower internet speeds that plagued African internet access (Bram, 2015) and as instrumental for economic growth in Kenya freeing up the time and money companies had previously devoted to in-house IT (Jackson, 2015a). However, a few months later in October 2015 a pivotal board meeting was held after which both Brian and Phares left the company and Riyaz took over Phares' former role as CEO. By November 2015, the fallout from this controversial board meeting had become public when the company's servers failed leaving customers across Kenya's tech sector without access to their data forcing them, in some cases, to wait weeks before service was restored, ensuring that speculations about what really went down were on the tips of tongues across the Nairobi tech scene. As in the course of any story where stakes in the truth of what really unfolded are high, at this point stories diverge and contradict one another, and they have led many in Kenya's tech sector to take to one of two sides.

The version of the story from those on the side of the entrepreneurs usually begins by depicting the entrepreneurs as too naïve, willingly giving up their majority stake in the company's equity to investors that they shouldn't have trusted. It depicts the investors as "vulture capitalists" who took advantage of the trust of the entrepreneurs and orchestrated a "hostile takeover" in the pivotal board meeting pushing Phares out as CEO, with Brain choosing to leave in protest at the ousting of his friend and co-founder. Many tellings in this camp go further and assert that Phares was ousted specifically because of issues around race or nationality. Others don't explicitly blame racial prejudice but still believe the investors knowingly took advantage of the entrepreneurs.

By contrast, the story as told from the side of the investors firmly denies that "white investors are abusing their money and privilege to push out black Kenyan founders of a company to steal it" (Hersman, 2015) and deny accusation of racial prejudice. Instead, advocates of this version blame the events on the "inexperienced management" (Hersman, 2015) and a lack of

professionalism and experience on the part of Kenyan entrepreneurs. They attribute the departure of Phares to declining revenue that reflected a need for better management, and the unwillingness of Phares and Brian to compromise and find an amicable way through the disagreements on the board.

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When I first started going to Nairobi for this study in 2013, I heard almost no mentions of concerns about discriminatory investment practices. But I was new to the sector, not to mention white and foreign, hardly the most obvious of confidants for latent concerns about racial prejudice. Moreover, the sector itself was still very new; few Kenyan entrepreneurs had enough first-hand experience to validate fears of injustice in the system, and even those who might have, did not speak out publicly. Over time, after being a present part of the daily lives of some of Kenya's techies, a few did begin to articulate such fears, though typically they came in the form of whispered conversations in loud bars or at quiet corner tables in cafes at lunch. In one such conversation, I heard about a Kenyan entrepreneur who'd gone through a startup acceleration program and been awarded funding from the internationally managed investment fund at the helm only to be pushed out of his company months later. In another, I was told the story of a Kenyan entrepreneur who lost a funding opportunity to a rival company run by a white foreign entrepreneur who'd moved to Nairobi. In those early years, while those who spoke to me did so expressing genuine concern, few of the accounts I heard were first-hand.

By the time I came back in 2016, the debate about investor bias had been flung wide open following the very public undoing of Angani at the end of 2015. While most of the prior concerns about such injustices lingered in the rumor mill of bars and cafes, here was a story that was unavoidably public. From the perspective of those on the side of the entrepreneurs in the Angani Saga, this story seemed to prove that, as Africans, they faced unique barriers to participating fully and equally in global tech innovation. To many, those barriers, those glass ceilings, seemed to be a direct result of biases based on either their race or nationality. Over the course of 2016, I watched as such biases became the topic of open public discussions, tense debates on blogs and social media, and private conversations with friends and colleagues. For many, Angani was proof enough that investors should be regarded with suspicion. Paul's hesitation to take equity investment in his company from this chapter's first story, was a direct result of the stories he had heard about the Angani Saga.

The topic became a key point of heated debate at a discussion forum I attended at a popular coworking space in May 2016. With the kind of bluntness employed by those resigned to a reality they do not want to face, one entrepreneur there said, "if you're a white founder, you're bound to get more money." For emphasis, he pointed at me, the only white foreigner present who did not in some way represent access to funding, or, admittedly, much talent for coding, and said, "if I had Eleanor on my founding team, I'd get money more easily." Another entrepreneur pointed to the trend of foreign white entrepreneurs coming to Kenya as a primary cause for concern. "What's happening is a lot of foreigners come in and you have no idea what's going on locally and you can get funding but local people can't get the same idea funded".

There were echoes of these concerns throughout my other observations as well. While I'd initially been excited at the sheer number of Kenyan startups that seemed to fill Nairobi during my first visit in 2013, over time I learned that many of the startups I had thought of as "Kenyan", many of the companies that had received the most funding and the most media attention, *actually had a foreigner in the founding team or a foreigner as CEO*. Often, they were foreigners who'd lived in Kenya for a few years; in conversations with them, many expressed a commitment to Kenya and intentions to support the growth of the local community, but to many Kenyan entrepreneurs, they were foreigners all the same. Later that year a study released by Village Capital, one of the venture capital firms operating in Kenya but with its headquarters in Washington DC, added more evidence to these observations; they found that 9 out of every 10 startups funded not just in Kenya but in East Africa between 2015 and 2016 were headed by at

least one European or North American founder (Strachan Matranga, Bhattacharyya, & Baird, 2017) . In 2014 a similar study from GSMA, a global telecommunications association, found that startups in Kenya that have foreigners in their team are able to raise money more quickly (GSMA, 2014). This is not just a Kenyan phenomenon. Andela is perhaps the most famous African tech start-up. It is a tech training and programming outsourcer that launched first in Lagos Nigeria in 2014, raised a $24 million Series B round of funding from the Chan Zuckerberg Initiative in 2016 and a Series C round of $40 million from other investors in 2017. Associated with Nigeria, and often seen as Nigerian, it was founded by a team that included American entrepreneurs.

In my discussions with Kenyan entrepreneurs there were a number who spoke favorably about having foreign entrepreneurs in Nairobi. Echoing Lave and Wenger's argument for the importance of extensive exposure to the full range of a community's practices, one entrepreneur declared, "I think it's a good thing personally. I think if they bring in their own ideas, it raises, you know, it brings in new thoughts and new ways of thinking, new experiences. I think the more cultures meet and the more you can bring ideas from where you were, and the more I can compete with that, the more universal our product will be." Another entrepreneur professed,

> I love the foreigners here! I think it's a positive thing….I see the bulk of the funding that has come into Kenya has gone to foreign companies in Kenya, and it has created resentment from the Kenyan entrepreneurs going 'so all you guys are here to do is fund Americans and Europeans in Kenya rather than funding truly Kenyan entrepreneurs?' The flip side of that is that a lot of Kenyan entrepreneurs are not qualified for funding. They are not. There's a lot of charlatans that have come into the sector because it's cool, it's hip, and people smell a lot of money around it. They see all these foreigners and they think they can come and get into this scene and date exotic women. So you get trash coming in that doesn't deserve to be funded. So there's two sides to the equation and both sides are failing if you ask me."

Both of these entrepreneurs (who had both received small seed rounds of funding for their own startups) acknowledged that the bulk of the venture capital funding in Kenya was still going to foreign-led startups. But to them, this wasn't the outrage it seemed to others, or at least it wasn't entirely outrageous. In fact, they actually seemed to see it as a small way to help solve Nairobi's problem with distance from the center of the GCTI and exposure to the norms of how tech entrepreneurship was being practiced in that center. By bringing experienced American and European entrepreneurs to Nairobi it increased Kenyan exposure to the received practices of the GCTI. By being forced to compete with these more experienced entrepreneurs, it raised the bar, forcing them to develop the expertise to build their business in order to do so.

Many of the people I spoke with in Nairobi expressed a strong belief that the solution to the problem of foreigners getting the bulk of the venture capital funding was to have more Kenyan investors, more people who understood the local market and who were more permanently rooted in the local community. But oddly, there seemed to be some evidence that even among the few Kenyan investors in the sector, there has been a preference for investing in foreign entrepreneurs. As one participant at the discussion forum pointed out, even at Safaircom, Kenya's mobile telecom giant that had recently launched a million-dollar seed investment fund, "none of the companies that have gotten funding from them have 100% Kenyan founders". Similarly, I observed a number of small hackathons turned startup competitions in which in addition to the judges' determinations, participating entrepreneurs were asked to vote on the winning startup. On more than one occasion, the participants actually voted for a startup that had been pitched by a foreigner. A 2017 Harvard study into pitch competitions and investment practices in the United States has given some indication that a preference for investing in white males in the GCTI is not,

in fact, exclusive to white male investors. In the study, the researchers found that "venture capitalists posed different types of questions to male and female entrepreneurs; they tended to ask men questions about the potential for gains and women about the potential for losses" (Kanze, Huang, Conley, & Higgins, 2017, p. 3). This in turn influenced how much money those female entrepreneurs were able to raise over time in turn affecting the success and longevity of their businesses. What's intriguing about this study is that the difference in how male and female entrepreneurs were treated by prospective investors was not a result of intentional (and illegal) gender discrimination, but a result of *subconscious bias* that led investors, including even *female investors*, to expect success from the male entrepreneurs and to question the potential of the female ones. Another study found that investors in Silicon Valley had similar subconscious biases against entrepreneurs who had a 'nonnative accent'. The study looked at 90 entrepreneurs' pitches in 3 prominent US startup competitions held over 3 years and found that having "a nonnative accent reduced the chances of receiving funding for entrepreneurs in new venture pitch competitions". Interestingly, the study also found that this investor bias was not a result of the entrepreneurs' race or an assessment of their communication or collaboration skills as a result of being foreign, but instead entrepreneurs with nonnative accent were perceived as having less "political skill,", meaning that they were perceived as being less "persuasive, dominant, and socially aware." (Huang, Frideger, & Pearce 2013, p. 1011). It is impossible to say at this time whether Kenyan investors suffer from the same subconscious biases about Kenyan entrepreneurs as the female investors in Silicon Valley do with female entrepreneurs. The female investors in the first study were still predominantly based in California, while the few Kenyan investors beginning to pay attention to technology startups come from a very different socio-cultural community, but may still be subject to internalized negative stereotypes about the inferior quality of African made technology that will be explored further in Chapter 4. Either way, I would venture to guess that introducing Kenyan investors, while beneficial to the growth of the sector as a whole, will not be the catchall solution to investor bias that many expect it to be.

Returning to the Angani story, the investors have denied that any conscious decision about the entrepreneurs' potential for success were based on their race or nationality. Instead, they echo Paul's investor and point to Phares' "lack of experience". To them, this lack of experience was a simple and specific problem that jeopardized the future growth and stability of the company and that could be easily solved by replacing Phares as CEO. But like Paul, David and Phares do not deny that they lacked experience, in fact they readily acknowledge it. In contrast to the investors, however, for them this lack of experience was symptomatic of a systemic failure, a structural issue, like in the case of the butchers, that made it difficult for them and Kenyan entrepreneurs in general to get exposure to the *real* practices GCTI tech innovation and thereby to build the skills necessary to protect against "vulture capitalists".

Over time, this "lack of experience" argument became a common refrain in my interactions with investors. Even Kenyan investors, like those at Safaricom, pointed to the lack of experience in their explanation for why they had more frequently invested in foreign-run startups. For example, one investor explained to me that they had really *wanted* to invest in Kenyan entrepreneurs but simply found that the foreign-run startups had better "governance structure" and that the Kenyan-led endeavors were more "bootstrapped" and "less professionally developed".

When pushed to elaborate on what they meant by "lack of experience" many of the investors I spoke with pointed to Kenyan culture and its educational system as inadequate for preparing them for the demands of GCTI entrepreneurship. And even with increased exposure to GCTI practices, some asserted that ingrained cultural norms might still make it difficult for Kenyans to adapt to such a different business culture. As one investor explained:

> Kenyans are unlikely to be risk takers, though there are exceptions. When I
> first came here I was looking for startups to invest in; I was disappointed by

how hard it was. There's a lot of talent here but not the business sense of the experience…that's because the educational system has flaws. They're the kind of flaws that make it harder for someone to come out and kick ass in a startup setting.

Another foreign investor, one who had lived in Kenya for many years, offered more specificity about what he believed was holding back Kenyan entrepreneurs from 'kicking ass' in startups.

In Kenya, a lot of things continue to be driven by this 'big man' idea. A lot of the system is set up to teach people to do as they're told and follow directions and not ask questions. A lot of the foreign driven companies really react strongly against that and really want people to voice their opinions…Many of the Kenyans leading companies know they need to be more like this to get investment, to encourage "out of the box" thinking on their team. But really, many just pay lip service to that idea or have trouble implementing it simply because they've grown up in Kenya, in the Kenyan system.

Over time, I realized that the "lack of experience" most of these investors were referring to, wasn't really about a lack of experience in business management, or in a particular programming language, or even in the distinct challenges of running a small business; what they were really talking about was a lack of exposure to the very American style of small business management on which the GCTI was built. In the language of Lave and Wenger, that would be a lack of sufficient exposure to full members, information, and practices that make up the GCTI, the kind of exposure that could mean the difference between being a marginal or a peripheral participant. As we saw earlier, despite the hyper-connected communicative ecology of the software industry, many of Kenya's entrepreneurs attribute this lack of exposure to the physical geography of being so removed from the 'real' heart of the GCTI. A frequent critique of Angani's investors, for example, was that despite being American, they too lacked experience in building companies and used the claim to authority that seemed to come with their nationality to take advantage of unsuspecting Kenyan entrepreneurs.

When investors say they are investing in "entrepreneurs not startups" or "people not products" they are actually demonstrating how personal, and indeed how subjective, the decision-making process of the gatekeepers can be. Rather than looking exclusively at the numbers—the prospective growth figures, the market size, the return on investment—particularly for investors looking at very early stage startups, they are also, consciously or subconsciously, assessing a specific individual's experiences, as well as their personalities and cultural backgrounds and, like investor biases against female entrepreneurs and those with nonnative accents, using that information to determine what their future ability to succeed in the GCTI will be.

In much of the existing literature on communities of practice, it is quite normal for those patrolling a community's borders to look for prospective newcomers to have the same experiences, skills, and background as current members. When granting legitimacy to new tailors, master tailors look for those who demonstrate an adeptness with pattern crafting, with stitching and fitting. When granting access to the 'jock' community in American high schools, those at the top often look to find the habits of trendiness and popular personality types that are common to existing jock members. Similarly, gatekeepers of the GCTI look to find existing successful traits in their new prospective members. Yet while gatekeepers' ideas about these 'successful traits' do come, in part, from their personal experiences—from the people they have known personally and the practices, experiences, and personalities they have seen that have made entrepreneurs successful—I contend that they are also, at least in part, informed by the stories that make up the community's narratives. As narrative scholars Eric Mankowsi and Julian Rappaport have argued,

"narratives mark collective identity by serving a 'gate-keeping' function that enables the community to include and exclude those who do not fit its vision"(Mankowski & Rappaport, 2000, p.488). Such narratives, particularly narratives around members' identity—about "where they come from, who they are, and who they will, or want to be" (Mankowski & Rappaport, 2000, p.6) —play a role in shaping the identities of a community's members, and provide a model of what a good community member looks like both to prospective members and to a community's gatekeepers. Sadly, this tendency to look for the replication of such community identity narratives in new peripheral members takes on a problematic sheen when a community's identity narratives have historically been embodied in one particular gender, sexual orientation, or ethnic, national, racial, or religious group. For example, Rodriguez and Ouellette have shown how troubling many traditional Christian community narratives can be for the identity of gay and lesbian Christians (Rodriguez & Ouellette, 2000). Similarly, in the GCTI the existing stories of individual success that feed into the larger Dominant Identity Narrative about what entrepreneurial success in the GCTI looks like, have disproportionately revolved around white American males. Zuckerberg, Jobs, Musk. The genius Jobs tinkering in his parents' garage; the socially awkward Zuckerberg who dropped out of Harvard to found a billion-dollar business; the visionary Musk willing to risk everything on a future that involves colonizing Mars. Such iconic stories have informed an overarching narrative that depicts the successful tech entrepreneur as a genius, someone who's business-minded as well as technologically adept, an ass-kicking risk takers, or perhaps a socially awkward risk-taker, willing to fail and persevere, to stick his neck out on a crazy idea that just might, and ultimately does, change the world. As we saw earlier, it also often includes a story of redemption, of initial failure that paved the way for eventual success.

The promotion of the Anyone Anywhere Narrative discussed in the previous chapter was, and continues to be, an attempt to push a new narrative about what GCTI success *can* look like. But a community's existing dominant narratives can be hard to change, and can remain embedded in the subconscious biases of a community, continuing to shape who is and who is not able to progress up the community's hierarchy through the decisions of its gatekeepers. Such narratives were operating, I would argue, when the female investors in the Harvard study subconsciously doubted the potential of the female entrepreneurs. And, I content, they have played a part in informing the decision-making processes of some of the investors and other gatekeepers looking to East Africa for new investments. Like the female entrepreneurs in Silicon Valley, Kenyan entrepreneurs can, at times, face narrative fueled subconscious biases. But unlike the female entrepreneurs in Silicon Valley, they also face the physical hurdle of being so far removed from the GCTI's geographic and cultural core, making it even harder for them to build the skills and experiences necessary to climb over barriers built by subconscious biases rooted in a community's Dominant Identity Narratives.

This brings us to our third story. Like Paul's story, I have changed the names and company details in this story to preserve anonymity. In fact, to fully ensure the privacy of entrepreneurs who are better known in Kenya than Paul, this story is actually a composite of stories taken from two different moderately successful fintech entrepreneurs in Nairobi.

Sam: Narratives, Expectations, and the Social Impact Story

When I started, I knew, 'I wanna run a business. I just need to figure out which one.' But I knew I needed some experience and I needed to be exposed. My Mum runs a bar and restaurant and I knew I didn't want to go and start doing that. I was like, 'I have all this knowledge, I need to do something with it, to help some people. I need to find some way I think I feel I'm being useful that's driving me. Then I was driving one day and it occurred to me, financial transactions are still so frustrating, even with MPESA, why can't I fix that? I was like, that's it! That's exactly

what I'm gonna do. I thought, 'You know what? Solving that would really help a lot of people. It would really help businesses here in Kenya.'

So, we [my business partners and I] started off our startup when we—all of us—were working full-time. So, we would moonlight. We used to say we were '9-5-9 people', we worked 9-5 on our jobs, and then 5-9 on our startup. We bootstrapped a lot. We bought things with our own money, we built our own technology pretty much out of our own pockets. And I was lucky, I had friends, family, and fools. I have several of those. Most Kenyans don't have those, or they don't have friends and family foolish enough to give like mine did. I had a friend who ran an office space and he said 'Sam, come, I'll give you some space.' So, we had an office, we had a computer, so we would just go in and work. But we were completely clueless. There was nobody to go to. There was nothing. We got a lot of our information from online. And so, we messed around the first year and everything. Then towards the middle of the following year we had a product that we had tested. And we were like 'Hey, finally we have a product that's working!' Remember, we've been working on it for 1 ½ years. We really thought we knew how to solve this problem in financial transactions. But it was a bad idea. We had been working on our product with one of the banks for 10 months. The bank, they told me, 'You do the integration, you do everything'. They kept telling us to go back and change this or change that. And then, you know what? In the end, they said no. And now it's been 2 ½ years since we started and we have to completely change our product. And since we've changed it, we made it simpler, we targeted a different market, and we managed to get our first round of funding.

My company means more to me than the money. I'm on my own clock. Eat, sleep, dream, everything. I'll wake up in the middle of the night and jump on the internet because my brain just thought of something and I want to check it. You know? I find it very hard to switch off my care switch. I don't think I could live in this world and not make a real—not a superficial, not a paper, not an imaginary—not make a real contribution towards making things better for people. I wouldn't be able to live with myself. So, I think entrepreneurs should be mission driven. You should be out there trying to accomplish something and the financial success etc. should be a byproduct of solving something meaningful. But that's hard for Kenyan entrepreneurs, you know? Funding is harder to come by than in America. We can't just go and live in a garage for 2 years while we build our company. We have friends and family too, yes, but when you say to them 'eh nataka kwanza bizna hapa' ('I have a great business idea here!), they don't always help because they don't understand tech. Kenyan investors mostly don't understand tech. They don't understand the risk. They want a sure thing. They want to put their money in land or real estate. Or they won't give entrepreneurs enough money to get through the 2+ year runway that they need to get their business going. I was lucky. Friends, family, and fools.

And the foreign VCs can be difficult here too. They're not the same as VCs elsewhere. These guys are always asking how something is going to influence the BOP [bottom of the pyramid]. If it doesn't influence the BOP? You can't get funding. If you can't show data to prove that it's influenced that market then people here aren't interested in financing it. And they're all focused on how you measure impact. They're social impact investors really. And that makes it hard, you know? They want to fund solar farming or turning waste into energy, they don't want to fund a B2B [business to business] venture. There are a few who get it. Maybe there'll be more eventually as entrepreneurs here succeed, but we're not there yet. Investors talk about social investing, making an impact. But, honestly, if you're talking about what's really needed, I don't see enough people actually building the things that are really needed. I haven't seen any apps telling me where is the nearest national dispensary with a particular medicine or helping me book some medication online for my kid because the nearest dispensary is 20k away and I don't want to just travel all the way there and find it empty and have to come back tomorrow. Where's the app for that? I haven't seen it. But I have seen an app selling the 6th, 7th, 8th, 9th, 10th Uber clone. For what? For 3 million Nairobians out of 41 million Kenyans? Let's face it, the Uber users are Nairobi; that's a Nairobi demographic. Outside urban Kenya who uses Uber? No one.

All the entrepreneurs around here, the Kilimani [a relatively affluent Nairobi suburb where the iHub is based] entrepreneurs, they live in this first world bubble. It's not just the American entrepreneurs coming in who don't get it. I bet you there's more than 20 million Kenyan who don't have access to basic healthcare. Where's the app for that? Things don't reflect local priorities.

My company may not be solving basic healthcare, but I'm not making an Uber replica either. I'm solving a problem that I know how to solve. I know how to make financial transactions better. In 5 years, I want to be taking our product all through sub-Saharan Africa. That's what I hope we'll do. I hope to get more partners and to help more financial businesses. I hope our company will help the businesses here retain their edge even with the big corporations, the multinationals coming in; I want it to help African companies compete. That's what I hope will happen. And I hope in 10 years maybe I'll have built a company that someone wants to take over or buy it or maybe we will be moving on and bringing better products and better solutions.

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In some ways, Sam's story echoes those that make up the Dominant Identity Narrative about the GCTI's successful technology entrepreneurs. At a young age, Sam was driven to start a company that could use technology to help people, and relied on the support of friends and family (and "fools") to get through the early stages when the company was far from making revenue. Sam and cofounders worked extremely long hours out of a determination to make their product work, but soon enough faced failure in the form of a bank's rejection and a difficulty fitting their product to their original target market. So, they pivoted and eventually got a round of seed funding to continue building and experimenting with their idea.

But the context in which Sam was trying to build a company was not the same as the one in which the iconic entrepreneurs of Silicon Valley, like Dropbox's Drew Houston or Uber's Travis Kalanick, have flourished. Even after getting their first seed investment, Sam's company struggled to get further financial support, and often came up against investors who were looking for startups that had more of a "social impact" than a company working on corporate level financial transactions. Even though Sam believed that their product would eventually make a real contribution to the efficiency and competitiveness of East African business, that was not the kind of "social impact" investors seemed to be looking for. As one local investor who knew Sam lamented, "We've spoken to those guys [Sam and cofounders], but very few VCs are interested because it's such a commercial B2B solution as opposed to small holder farmers in Kisii [a small town in western Kenya] trying to get to market." And Sam's company is not alone. I lost track of the number of entrepreneurs, including foreign entrepreneurs, I spoke to over my time in Nairobi who expressed frustration with the landscape of investors in the city. One entrepreneur who'd come from Harvard and was building an application that he believed would help streamline the transportation industry in Nairobi, was struggling to find takers despite having more connections to international investors than most Kenyans. "Investors who come here are setting you up for failure," he said. "They want last mile delivery to the BOP [Bottom of the Pyramid], but that's not what my business does and that's not what I want it to do."

Moreover, many of the investors I spent time with in Nairobi readily admitted that while they were, of course, interested in getting a return on their investment, they were also particularly interested in startups that had a *social impact*. One investment firm representative (who was, incidentally, born in Kenya but had lived abroad for the previous 15 year), said quite bluntly: "Each of us individually are here for the impact. If I want to just make money, there are much easier and much less risky ways of doing that than investing in startups in Africa." Many of the funds operating in Nairobi had catch phrases explicitly focused on the social impact objective. "Acumen catalyzes entrepreneurship to tackle the problems of poverty;" (Acumen, 2017) "The Skoll Foundation drives large-scale change by investing in, connecting, and celebrating social entrepreneurs and the innovators who help them solve the world's most pressing problems" (Skoll, 2018); and "Village Capital finds, trains, and invests in entrepreneurs solving real-world

problems"(Village Capital, 2018). The popularity of startups with a "social impact" in Nairobi seemed further reinforced by the large number of NGOs and development organizations getting into the mix as well. At the time of writing, DFID, Mercy Corps, Omidyar Network, and countless more are all involved in funding startup ventures in East Africa. The NGO Mercy Corps, for example, has a project they call Mercy Corps Social Venture Fund with the goal of looking for "new ways of funding international development that promotes the flexibility and experimentation required to test new models—models that could deliver social benefits to millions of people in the developing world." (Mercy Corp, 2014).

If we assume that GCTI 'gatekeepers', like investors, are solely judging new entrepreneurs by the community's Dominant Identity Narrative about successful entrepreneurs, then it seems odd that these investors might prefer a tech startup working with small-holder farmers over one with the business model and potential to scale that Sam's seemed to have. If we assume that many investors, even those who come to Kenya, emphasize publicly the need for entrepreneurs to be able to demonstrate an ability to make investors "a lot of money", then why have startups like Sanergy, which claims to be able to turn human waste into energy, or like Mobius Motors, which claims to be designing and building cars in Africa for Africa, both been able to raise multiple rounds of funding without being able to build a successful product that generates a stable revenue stream? This, I would argue, is not (or is not *only*) a matter of investors looking for entrepreneurs and startups who fit in with the GCTI's Dominant Identity Narrative as we saw in the previous section, but also a matter of looking for project that fit in with broader narratives *about Africa*.

Some, though by no means all, of the stories that reinforce narratives about Africa to an audience of foreign investors come from the international media coverage of the continent. There is no shortage of academic research about the historic failings of this coverage, about how it focused disproportionately on conflict and famine over business and finance (Adegbola, Skarda-Mitchell, & Gearhart, 2018; Mel Bunce, 2015; Carruthers, 2004; Fair, 1993), or how it often overlooked the complexity of the continent (Martins, 2011; Ogunyemi, 2011) in favor of the "single story" (TED, 2009b) of a poor struggling continent in need of help, or more damningly how it served to perpetuate post-colonial inequality. Such media coverage has historically contributed to the perpetuation of a narrative about Africa that depicts it as a failed continent in need of help, what could be called the Failed Continent Narrative. Even among those traveling to or through Kenya's modern-day technology sector, I still came upon those who brought expectations of Africa that focused on its problems and rested on a belief that outside help was necessary in order to solve them. I met at Israeli student who came on a class trip through Nairobi's largest slum, Kibera, and decided that he knew, after just a few days, exactly how to solve their sanitation problems; I watched an American pop icon who also visited Kibera and posted a photo of a sewer to her Instagram feed implore her followers to "help these people get clean water"; and I listened to a Dutch techie who came to Kenya because it was a place she could have an "adventure" and "make a real difference". All, no matter how well-intentioned, saw a continent that couldn't help itself alone.

In recent years, along with the rise of the Anyone Anywhere Narrative, the tone of the coverage of the continent has begun to change. This transformation is most iconically represented by two covers of *The Economist* published more than 10 years apart; the first, published in 2000, depicts Africa as "the hopeless continent", the second, published in 2011, proclaims "Africa rising". The two covers—the former depicting a fighter carrying a shoulder mounted heavy artillery weapon, the second depicting a child running with a rainbow-colored Africa shaped kite flying high in the air—could not be more different. In many ways, this shift seems to have been a response to the "single story" critique that followed the famous Nigerian author, Chimamanda Ngozi Adichie's TED talk, an attempt to acknowledge and rectify the previous failings by depicting a continent on its way up rather than one perpetually stuck and in need of help. Suddenly, feel good stories of success in Africa in Western media started to increase (Mel Bunce,

2015), and the Africa Rising Narrative began to take off. And nothing sells a story of "pivoting" from failure to success quite like technology innovation. In many ways, the popularity of the Africa Rising Narrative as a solution to the Failed Continent Narrative has been irresistible for members the GCTI. It is the ultimate redemption story, of problems turned on their head through the skillful application of new technology. As a community with a core narrative about how new technology innovation can bring about positive social change, where better to prove that than on the continent with the most seemingly intractable problems? Where better to prove that technology can turn a story of failure on a continental scale into a redemptive story of ultimate triumph?

There has been a noticeable increase in the number of Africa Rising stories in major Western news outlets like *Forbes* and the *New York Times* beginning about seven years ago, and more noticeably five years ago. Many such stories focus on mobile and internet penetration rates as a sign of Africa "leapfrogging" through development, or on technology startups solving some previously intractable problems. MFarm, the app that's getting market price information to farmers; BRCK, the company that's putting tablets in schools; Sangery, the company that's turning human waste into energy; MKopa, the guys who are helping poor people access solar energy on a pay as you go system; and the iHub, the organization that's helping to grow African startups. By far the most iconic—and now cliché—photo of this entire trend has been the Masaai warrior standing on the savannah in front of a setting sun holding his mobile phone high up in the air.

By 2016, many Kenyans in the tech sector expressed frustration to me about the tone of this coverage. Yes, in many ways it was better than the Failed Continent Narrative, but to them it was no less reductive. Journalists were still looking for a "single story" but this time it was a story of success, especially of success through technological solutions to Africa's prior "problems". "Tech in Africa is sexy," said one entrepreneur with an almost sarcastic tone. "Tech is sexy in the US, but look at what it can do on a continent with so many problems!" "All they want to write about now is social impact stories," said another. "But that limits what people see or expect to see here when they do." Many are especially tired of the cliché that focuses on the "sexy cool things helping poor people do X" rather than stories about good business models and the everyday work of ordinary struggling entrepreneurs, that for them was the real lived experience of Kenyan tech entrepreneurship.

While the way Africa is portrayed abroad bothers many people in Nairobi, what troubles them more specifically is that such stories seem to influence what kinds of investors come to Kenya, and to inform the expectations of those who do, ultimately shaping the landscape of funding and experiences available to Kenyan entrepreneurs. As one prominent Nairobi figure told me, "Even some of the VCs [venture capitalists] that operate in Silicon Valley, VCs that treat their investments in the Valley very seriously, they come here as just a side project. They want to have a fun impact story that they can tell at the dinner table back home." "There's a vitamin assumption," one American investor who'd been in Nairobi a long time told me. "You should do it because it's good for you. We never use clean energy in the US but Africans will. We don't want energy made from human waste but Africans will!" What is fundamentally at issue here is that all of this coverage, the sexiness of tech in Africa, the popularity of the Africa Rising Narrative, the persistence of the perception that Africa is filled with "problems" that need "solving", all result in a feeling that African entrepreneurs are somehow being treated differently than their counterparts in other regions of the GCTI.

As we saw earlier, Kenyan entrepreneurs already face challenges in meeting the expectations set by the GCTI's Dominant Identity Narratives about the successful technology entrepreneur. But with the added influence of broader overarching narratives like the Failed Continent Narrative or the Africa Rising Narrative, entrepreneurs in Kenya *often find themselves stuck between contradictory expectations*. On the one hand, they are expected to build "social impact" startups in order to meet expectations about Africa that many investors bring with them

and in order be attractive to most of the funders who've come to Nairobi. On the other hand, in order to progress much further and become 'successful' in terms of the larger GCTI, they are expected to conform to the Dominant Identity Narrative about success and build a company that can scale beyond Kenya and make its investors "a lot of money", all while social enterprises have been notoriously hard to scale.

Ironically, many entrepreneurs I know in Kenya, like Sam and Paul, genuinely care about having an "impact" with the companies that they were building. But they want to decide what impact should look like for themselves. And they don't want investors to judge them and their work by standards that are any different than the ones they use elsewhere. While some Kenyan entrepreneurs are, as Sam once told me, "living in a 1st world bubble", unaware of the real problems of the majority of the population around them, many, like Sam, are patently aware that Kenya has many very real problems that need addressing. They see the problems with access to healthcare, or with inequality in slums like Kibera or Mathare, or with a clogged and inefficient transportation system in Nairobi, or with an inefficient financial system that makes trade among African countries difficult, and they want to address them, or they want *someone* to address them.

Furthermore, many entrepreneurs and a handful of investors in Nairobi seemed frustrated at the way in which these expectation investors brought shaped the quality of startups that received funding. As Paul's investor once said to me, "A lot of investors aren't doing their due diligence. Companies get investment because tech in Africa is hot, because farming apps etc. are hot, but they're not asking the hard questions about their business models." By focusing so much on wanting to fund projects with a "social impact", an array of entrepreneurs has sprung up who know how to work that system but who aren't focused on building really sustainable technology venture. A foreign investor I spent a significant amount of time with, put it this way:

> If the only way the startups here can access funding is to tell a social impact story, then they will gear their startup towards having a social impact story to access that funding. And to me that actually created a whole generation of startups that have built companies to access those funds. They hear 'we need to turn waste into energy, into fuel, into, into furniture! Waste is huge. Energy is huge. A product that addresses both, oh my God, can you tick more boxes than that? I feel like there are many entrepreneurs out there that think 'ok look, this is where they wanna put their money, so let's make a company that involves waste and energy!' They will get funding. And this is the problem. The problem is that the external investors have validated this system that doesn't really produce anything truly useful.

It is no secret to those in Kenya's tech sector that entrepreneurs who can tell a story that fits with these particular social impact expectations, are likely to get, at least, preliminary rounds of funding. Sometimes it is more about creating the *perception* that you and your startup fit in with the dominant influential narratives about Africa and entrepreneurs than it is about actually being what people expect you to be. And it is this point, this role of entrepreneurial storytelling that bring us to my fourth and final story. Again, as in previous stories, I have changed the names and some of the details about the entrepreneur's company in order to preserve anonymity.

Faith: Storytelling, Perception and the Social Construction of Success

I first met Faith in 2013 at the iHub on my first research trip to Kenya. Dressed in a well-fitted cap sleeve button-down shirt and black pencil skirt, she struck me at the time as simultaneously kind and cautious, warm and reserved. She was a recent graduate of one of Kenya's most prestigious private business school, Strathmore University, and was in the midst of deciding between going back to Strathmore or accepting a fellowship she'd been offered to go to Europe

for her master's degree. During her undergraduate, she'd completed an "industrial attachment", or internship, at a large multinational company and built a small app based on that work which she later presented at a similarly small pitch competition at her university, where she was awarded first prize. By 2011, she had connected with her co-founder and they began building their fledgling company at one of Nairobi's business incubators. The incubator offered office space, free internet, and connections to local and international mentors for a small fee. By the time I met her in 2013, the startup had acquired its first round of seed funding, an equity investment from a local Kenyan investor, and had placed as a finalist in a prominent regional pitch competition. Her company was beginning to gain traction, but you would never have known it to talk to her at the time. She spoke modestly about being an entrepreneur and about her uncertainty about the future of her small business and whether she should put it on hold to go back to school for a master's degree.

By the time I returned in 2016, Faith was widely known in Nairobi's tech scene. By 2014, her company had won an award as one of the best startups in the finance sector on the continent. By 2015, it had been sold to a large African institution and made headlines as one of Kenya's first startups to be successfully acquired, the gold standard of success for any GCTI entrepreneur. Soon after, she was listed among the entrepreneurs to watch at one of the core publications of the GCTI and was invited to speak at prominent international conferences on entrepreneurship. When I met her again in person that year, she seemed little changed. She still carried the same air of kindness and reticence and still lived modestly despite her newfound wealth. What had changed however was her public presence. With the recent acquisition, Faith and her story frequented domestic and international news, public stages in Nairobi, Cape Town, and Boston, the blogosphere, and bookshelves of Nairobi. On many of these platforms she spoke ardently about how important she believed it was for Kenyan entrepreneurs to" tell their stories", to "change the narrative" about what was possible on the African continent. Fitting nicely into the Africa Rising Narrative, Silicon Valley's Redemption Narrative, and the Anyone Anywhere Narrative from the previous chapter, Faith has spoken publicly and frequently about the challenges she's overcome, her mistakes, and the steps she took that led to her eventual success. For someone who values storytelling so greatly and performs it so frequently, I have chosen to include below a portion of her story in her words. The following paragraphs are in Faith's words, told through an amalgamation of excerpts from her many public appearances, writings, and interactions with me.

"Back in school I was very hungry and looking for problems and looking for solutions to those problems. With that hunger and passion to provide solutions and create change, then I found myself on the path to entrepreneurship…I was lucky enough from a young age to be assertive enough and go in and ask where do I belong and who can hold my hand… I'm sitting here and you might think I've made it but I'm still learning a lot. I surround myself with the right people and the right mentors. And they told me… 'you need to get out of that place and go this direction'. They gave me the direction and of course I had to believe in myself before someone else would.

"The goal was let's grow this business, let's do it for value and impact and let's scale, even beyond Kenya. And of course, that is still the same same picture even after the acquisition. The thing investors look for: people people people. I can't emphasize enough the importance of people…Our investors told me that the reason he invested in the business was not because he found the product ready and the customers paying. He said it was because he saw in us a team of focused and talented individuals.

"Running a startup can be a lonely world. I lost a lot of friends during this time too as we barely kept in touch. I spent most of my time with my team and so I considered them as close friends…But part of this journey, the journey of an entrepreneur, is gonna be failures…Failure is a forbidden word in the African culture. If you fail, there is no sexy thing about it, no glory, only shame. Unlike in the West where failure has been appreciated as opportunities for learning for

most of the successful startups we have heard of…There is need for more failure stories in the African tech ecosystem to inform startups that failure did not start with them and it was part of those who succeeded as they chose to learn from their failures.

"At the beginning one of my biggest fears was raising money…I remember during initial competitions and events where I had to present my team, I was very inexperienced at standing in front of a large crowd…what I wish I had, were the right skills and knowledge of negotiation and understanding the details of shareholding structures…negotiation and pitching skills are vital. The best way I learnt to pitch and negotiate is by practicing it and getting tips from peers who had done it. I am still not perfect at it. Spend time watching Shark Tank to learn from the sharks and read Paul Graham posts on Y Combinator.

"Silicon Valley has taught us, and we can borrow a number of things from them especially when it comes to telling startup stories, irrespective of whether they are successes or failures, for these stories act as guideposts for budding entrepreneurs… I want to tell our story. For untold are the stories of many young entrepreneurs and startups in Kenya that could impact and lead to the development of an integrated tech ecosystem… It is by sharing our stories and lessons in our way, that we will inspire generations to come and create positive change and success in the ecosystem".

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Unlike the other stories, Faith's ended in success, in legitimacy in the eyes of many existing members of the GCTI both inside and outside of Kenya. For a community that so values the profit-making potential of its technological products, first the investment, and eventually the successful acquisition of Faith's startup, were stepping stones to an inbound trajectory into the GCTI. But Faith took other steps that have set her apart from other Kenyan entrepreneurs, steps embedded within the story that she tells.

So far, this chapter has covered the role of *individuals* like venture capitalists and *organizations* like incubators acting as gatekeepers to the community legitimacy of people like Faith. But that is really only one step towards being seen as a legitimate tech entrepreneur. Faith's ability to convince one investor to take a chance on her company and her idea was just the first part of the process. In her ethnographic study of two individuals attempting to learn an indigenous Ecuadorian language known as Quichua, the linguist Michele Back reminds us that "the co-construction of learners as legitimate or nonlegitimate participants in a target culture or community plays a role in the acquisition of any type of knowledge" (Back 2011, p.1055). *In other words, Faith's ability to become a "real" (or successful) technology entrepreneur is a result not just of her perceived legitimacy in the eyes of individual gatekeepers, but in the eyes of both herself and the broader community.* A closer look at Back's study helps to illustrate this. In it, she looked at two individuals who were both trying to learn Quechua, one was ultimately successful at learning the language while the other was not. Back argues that the first was successful in part because he was a "heritage learner" of the language with historic family ties to that community while the other was not. As a result, the second "perceived himself as marginalized from the community—a perception that was…reinforced by community perceptions of him—which hindered him from fully participating in the community and learning Quechua" (Back 2011, p.1041). In fact, the idea that community legitimacy is *socially* constructed between the learner and members of the community itself is a natural extension of Lave and Wenger's argument that the learning process is a *social* process rather than one that takes place entirely or even principally in the mind. Along the path towards becoming a successful tech entrepreneur, Faith needed not only to adopt the practices common to other successful entrepreneurs, and to gain the approval of individual gatekeepers, but also to build an identity for herself as a successful entrepreneur, one that would be credible for both her and existing community members.

As we have seen earlier in this chapter, a community's broader identity narratives can be instrumental in shaping both what is expected and valued in a community and who is allowed in

and who is not. In earlier chapters, I have demonstrated the important role that storytelling and narrative construction have come to play in the communicative ecology of the GCTI, including in crafting inspiring techno-visions of the future, and in constructing new narratives to attract new members and expand the community's boundaries. Here, I will narrow in on the impact that storytelling and narrative construction have played in the experience of a single individual and, like in the case of the Quechua learners, constructing an identity narrative for herself as a legitimate tech entrepreneur from Kenya. Like the iconic entrepreneurial storyteller, Steve Jobs, Faith has gone beyond adopting the tangible practices of the GCTI—like exiting her company, prioritizing scalability, and learning from failure. She has also welcomed the role of storyteller. Through both *the story she tells* and *the way she tells it*, Faith is campaigning to be taken seriously in the GCTI, and to be noticed even by GCTI members far away.

Faith's story echoes those of other successful tech entrepreneurs. As she tells it, in the early stages, she demonstrated the sort of drive and assertiveness common to confident American entrepreneurs. She chose mentors who helped guide her, a co-founder who inspired her, and an incubator that provided direction and mentorship as well as just office space. In later stages, her company *failed* in one direction and *pivoted* to a different product, and focused on scaling that product *beyond Kenya*, rather than staying committed to a Kenyan market. She gave up much of her social life, a future academic life, and alternative career paths, and worked *long hours* dedicated to building the company. Eventually, her company was acquired by a much larger one and Faith and her investor and cofounders profited. Despite being a Kenyan woman with no physical experience in the United States, Faith's story bares a strong resemblance to the GCTI's Dominant Identity Narrative of the successful entrepreneur. By building up a narrative for herself that largely conforms to the Dominant Identity Narrative, Faith is working to shape how she is seen.

But beyond the content of her story, Faith is also working to *embody* that Dominant Identity Narrative by embracing the role of storyteller itself and through her choice of storytelling techniques. As I have shown in Chapter 1, In an industry where thousands of new startups seem to be born every day, mastering the art of storytelling can mean the different between gaining legitimacy, funding and success, and being ignored, overlooked, and excluded. As one investor in Nairobi told an audience of entrepreneurs participating in an international startup competition: "Don't lose your audience. This is about telling a compelling story. As judges, listening to 30 pitches, we really only remember ten of them after half an hour. So, make it memorable, okay?" But how does it work when your intended audience is not immediately in front of you as they are in startup competitions or as they were for the Quechua learners? The members of the GCTI who come to Kenya only represent a very small segment of the larger GCTI community. In-person interactions and storytelling may gain an entrepreneur legitimacy in the eyes of the Kenyan community of technology innovators, but what about the eyes of those community members further afield?

I would argue that just as early stage startups anywhere in the GCTI must rely on the art of storytelling to get their idea noticed, as we saw in Chapter 1, so do even more established startups based great distances from the community's Californian origins. We have seen in Chapter 2 how geographically dispersed communities like the GCTI rely more heavily on shared narratives and stories to give their members a sense of belonging more readily accessible for members of smaller communities who interact in person on a daily basis. We also saw how the community's rich communicative ecology is employed to help share and disseminate these stories, as in the case of transnational religious groups adopting television and mobile apps to connect community members. Similarly, beyond embodying the successful tech entrepreneur by telling her story to new recruits, Faith's story needed to break through all the other noise in a chaotic hype-driven trend-obsessed industry; she needed to get her story heard and ensure that it would be remembered. She needed to not only be able to tell a good story in person or on the stage of a startup competition or in conversation with investors, she also needed to know how to

take advantage of the full breadth of the communicative ecology at her disposal to facilitate her story's dissemination throughout the global community. Faith has adopted sundry communicative platforms in order to tell her story. She has taken to stages in Nairobi, given talks at universities, launched Kenyan entrepreneurial groups on social media, given local and international media interviews, written personal blogs, written a book, been written about in prominent GCTI media outlets, and traveled to other parts of the GCTI to tell her story in person there.

 Another technique she embraced with zeal was speaking to students in Kenya who are not yet a part of the GCTI. In fact, on university and community stages around Kenya is where I have most often found Faith speaking publicly. Oddly, in some cases the audience one must speak to in order to gain legitimacy in a community of practice, is not always existing members, but rather a broader audience, an audience of ambitious hopefuls you can inspire to join the community through your story. This is particularly true for communities that seek growth and expansion. The community of Alcoholics Anonymous needs to expand in order to help all the alcoholics who have not yet acknowledged their illness. *The GCTI similarly needs to expand in order to incorporate new innovators with brand new ideas on which the industry relies.* In fact, I would argue that just as telling your story to an alcoholic in denial and bringing them into the AA community is the last step to being seen as a full AA membership, so is telling your success story to aspiring entrepreneurs a key step in becoming a legitimate tech entrepreneur in the GCTI. In this way, storytelling aimed at prospective newcomers is, for both communities, as much a part of an individual's path to community legitimacy as it is a part of the community's own path to expansion and growth. In the GCTI, this is personified in the techno-visionary, the individual who inspires not just through telling their own story but through telling the story of the future made possible through technology, and making their audience believe they can be a part of that future. The details of Faith's story rest primarily on the past, on her company's history and her own experiences, but when she speaks publicly she almost always tells it with an emphasis on believing in the power of technology for the *future* and inspiring others to take up the mantle of tech entrepreneurship, to sacrifice their social lives and alternative career paths for the promise of belonging to a larger community and for the potential of building something that can really change their community. By talking to unknown students, outsiders to the GCTI, Faith is embodying the visionary entrepreneur and in turn enhancing her own legitimacy within the community. Through her practices, through the story she has told, and through the techniques she has employed to tell it, Faith has been able to construct an identity for herself as a legitimate and successful technology entrepreneur that is seen and believed by members of the GCTI, even those abroad.

 New entrepreneurs in any part of the GCTI around the globe face these storytelling pressures. They have to break through the noise. But my time in Nairobi indicates that entrepreneurs in Kenya, or in Africa in general—at least those in the early stages of building their company—often face the added pressure of needing to demonstrate, as we saw in Sam's case, that their startup has a "social impact". Unlike assessing a startup's financial status and prospects for generating revenue and a return for their investors, assessing whether a startup has a social impact is an inherently subjective and qualitative process, as subjective and varied, one might argue, as judging a startup by its people, by the potential of its founders rather than by its product. What a social impact *is* can vary just as widely depending on an investor's perspective and values, from providing children with access to healthcare, or villages with potable drinking water, to providing employment through a company's growth. How to *measure* that social impact once a goal is identified can be equally as idiosyncratic and elusive. As a result, compelling emotive stories are often the way entrepreneurs in Kenya work to demonstrate their social impact in order to attract the social impact investors that populate Nairobi's investment landscape. This technique draws on a long tradition in the development sector of telling emotional stories of the poor who can be saved with "your donation," told to a guilt-ridden Western public. As one Kenyan representative for an investment firm observed to me, "We have a lot of impact investors in our

network, and impact investors are constantly out there looking for the narrative, for the story that sticks." Many aspiring entrepreneurs in Kenya are well-aware of this. And because of the prominence of the Africa Rising Narrative and the broader appeal of testing out and proving the validity of the GCTI's core beliefs *even* in Africa, many startups in Kenya employing the "social impact story" strategy have done moderately well. Some have even, for a time, gained the attention of those outside of Nairobi.

But riding the "tech in Africa is sexy" wave will only get an entrepreneur so far towards building an identity as a legitimate GCTI tech entrepreneur in the eyes of the broader community. And while demonstrating that technology can save the world in Africa may be a compelling story that touches at a core GCTI community narratives, it is insufficient. It ignores the fact that the belief in the ability of the free market to build and sustain new technology innovation through the generation of profits is *just as fundamental* to the GCTI as is the belief in technology itself. Entrepreneurs who rely on the social impact story to gain notoriety, even those who have received investments and attention, often still struggle in constructing their identity as a truly *legitimate* GCTI tech entrepreneur because many members of the broader community are unable to take a startup seriously that appears to prioritize social impact over profit and financial sustainability. Faith's experience was somewhat unique in that she was able to build a successful startup in Kenya without focusing on its social impact. She was fortunate to find an investor who was both Kenyan and had worked for a large multinational technology company bringing a certain amount of knowledge about the local ecosystem *and* experience in what it might take for Kenyan technologists and entrepreneurs to be taken seriously abroad.

Conclusion

In Chapter 2, I showed how a new overarching narrative—a narrative about how anyone anywhere on the planet could innovate new transformative technology—became popular and resonated with Kenyan techies in its aspirational middle class. By contrast, in this chapter I dove into how different the lived experiences of many Kenyan entrepreneurs are from what the Anyone Anywhere Narrative led many to believe. Through Paul, Angani, Sam, and Faith, I hope to have shed some light on both *how* and the reasons *why* the lives of real entrepreneurs in Nairobi are so different from the tales told to inspire.

Existing literature shows how learning to join a community of practice involves an extensive period of co-participation, of engagement with existing community members, learning their habits, their norms, their speech and storytelling patterns, in order to learn how to behave like, and eventually become, a full community member. But not all people who want to join a community are "legitimate peripheral participants", many are marginalized through their construction—by both themselves and existing community members—as outsiders who don't fit in. Others are excluded from the social practices and exposure necessary to learn how to become a community member as a result of a community's isolating structure, its competitive nature, or the subconscious biases of individuals gatekeepers. I hope this chapter has enriched this literature by adding an awareness of the narrative dimensions embedded in many of these barriers and an examination of how storytelling may be used to overcome them.

In the case of the Global Community of Technology Innovators, Kenyan entrepreneurs, like Phares at Angani, come up against barriers linked to the community's Dominant Identity Narratives. These narratives, about what a successful GCTI entrepreneur looks, acts, and sounds like, influence expectations of individuals like judges at startup competitions who act as preliminary community gatekeepers. The stories that support these narratives often depict the successful tech entrepreneur as a genius who sacrifices everything to make it, who fails but perseveres and is ultimately successful in raising money and scaling because of the innovative brilliance of their product or their business acumen. They also, more often than not, depict a

white American male at the helm. Such narratives operate at the subconscious level, acting as a yardstick against which all new entrepreneurs are measured. In the worst cases, this leads to an individual's racial, gender, or national identity influencing determinations about their suitability for joining a community or their potential for success once they do. Most investors in Nairobi I spoke with deny the influence of such demographic factors, but foreign white entrepreneurs who start businesses in Kenya still do receive the lion's share of the available funding.

Kenyan entrepreneurs, like Paul, also face challenges as a result of their geographic location in Africa. Despite the rhetoric about global connectivity, about the speed of transnational digital work, geography still matters, in-person connections still matter, it still comprises an important part of the GCTI's communicative ecology regardless of how virtual much of the community's practices have become. Kenyans, like those in many countries far removed from the traditional centers of GCTI power, struggle to access the full breadth of the community's experiences that would better prepare them for GCTI membership.

In Africa, as Sam found out, this seems to be aggravated by broader narratives about the continent that shape which GCTI members choose to come to Kenya and what they expect to find when they do. A narrative about Africa as a failed continent in need of outside help still lingers leading many who come to Kenya to make the trip in order to "make a difference" and have a "social impact." Additionally, the transformation of Africa's media narrative in recent years from the "failed continent" to the "rising" one has proven very attractive to GCTI investors. This transformation echoes the stories of failure turned into success that makes up many successful GCTI entrepreneurs' stories, but on a *continental scale*. Where better to prove that technology innovation really can save the world than on the Failed Continent? As a result of these overarching narratives, foreign investors who have chosen to come to Kenya are *not representative* of the full range of investors in the broader GCTI. This gives aspiring entrepreneurs in Kenya a warped view of what membership in this global community looks like and it creates pressures to prioritize "social impact" over financial returns that may lead to success within the local community but may limit their integration into the broader community.

Together, these various narratives often make it difficult for Kenyan entrepreneurs to construct a believable identity for themselves as a successful technology entrepreneur. Instead, many acquiesce to the popularity of social impact in Africa and tell their stories and shape their businesses to fit these expectations. Some are even able to use the prominence of the Africa Rising Narrative to gain attention for their businesses overseas. But in doing so, they often trap themselves in a social impact corner and limit their ability to gain full GCTI legitimacy beyond the role of a marginal social entrepreneur.

Entrepreneurs, like Faith, have gone further and have demonstrated how the GCTI's love of storytelling can be used to overcome some of these barriers to entry. Faith not only worked to embody the identity of the successful GCTI entrepreneur, but she frequently told that story with an eye to inspiring future generations. Furthermore, while other entrepreneurs in Nairobi told stories to appeal to the social impact investors in Nairobi, Faith, with the support of an experienced and understanding investor, told her story with an eye to a much broader audience. In doing so, she demonstrated the ability to bypass Nairobi's geographic barriers, to get noticed in the clatter of other eager entrepreneurs, and to gain access to new experiences and networks abroad. More importantly, it also helped her construct an identity for herself and her company as a serious technology entrepreneur rather than *just* a social entrepreneur.

In the attention economy (Davenport & Beck, 2001) that dominates this global community, the media and storytelling can play a far more influential role in gaining attention, and later legitimacy in the eyes of community members than existing research on communities of practice would suggest. Taken together, storytelling for people who want to join the GCTI is not just about reaching that one gatekeeper, that one master apprentice who can decide to grant legitimacy to their wide-eyed apprentice, *it is about constructing and narrative about one's*

entrepreneurial identity as a legitimate member of the GCTI and persuading the broader community to see you as such.

CHAPTER 4: RESHAPING A COMMUNITY OF LOCAL TECHNOLOGY INNOVATORS

It's near the end of February 2016 and I'm sitting in a large theater. My seat is plush and comfy and reclines slightly. The walls are windowless and bathed in a bright pinkish-purple light that makes the room feel like it's glowing. Upbeat pop music plays as the audience slowly filters in from the pre-event reception, glasses of wine and bottles of beer in hand. The stage at the front of the room is currently empty except for a large projector screen at the back held high above the stage. Below it, a turquoise colored map of the world sits in the center surrounded on either side by white posters with the number 1776 stamped repeatedly on them in blue and red. Two bright white spotlights land at the center of the stage, and at the very front sits a small black teleprompter, barely visible. I'm in the Kenya National Theatre in the Central Business District (CBD) of Nairobi; it's the finals of the Africa Regional Round of the Challenge Cup Competition run by the DC-based startup incubator named after the American revolution, 1776. After two days of practicing and coaching from 1776 official mentors, thirty startups from eight countries across the continent, including ten from Kenya, will each have two minutes to pitch their ideas in front of this growing audience, and more specifically in front of a panel of investor judges.

The event's host, a peppy energetic American named Andrew, comes onto the stage to start the event only a bit behind schedule. He's wearing dark blue jeans and a bright red branded 1776 Challenge Cup t-shirt. He jumps around the stage working up the audience, bam bam bam! "Are you excited for these innovators?!" Bam! "Are you ready for ideas that are gonna revolutionize your life?!" Bam!

Soon the pitches start. The presentations vary widely. Some are slick with fancy graphics and confident speakers. Some play to the crowd like the one who waves his hands in the air to pump them up. Some deploy humor to get noticed like the one who announced: "The cost of cow feed is too damn high!" then paused for a beat longer than you might expect, and finishes with "...until today", eliciting a roar of knowing laughter from the crowd all too aware of the clichés of the startup world. Some are focused exclusively on their company's growth metrics and speak with laser focus directly to the judges, while others seem intimidated by the judges or the crowd or the bright lights or the insanely short time they have to get noticed and are painfully, obviously, nervous.

Of them all, the speaker who garnered by far the biggest reaction from the crowd was a French-Cameroonian named Stéphane Eboko representing a Kenyan traffic mapping startup called Ma3Route. Ma3Route crowdsources information provided by its users and delivers updates about traffic accidents and jams around Nairobi through Twitter or its application. Its name derives from Sheng, the Kiswahili-English hybrid slang that evolved in the urban environment of Nairobi. The "Ma3" from Ma3Route is a Sheng word bus. It plays on the similarity between the Kiswahili words for bus—matatu—and for three—tatu.

By the time of the 1776 competition, Ma3Route's app had been downloaded 40,000 times and they had in excess of 400,000 active users, representing approximately 10 percent of Nairobi's population with some 2,000 posts about traffic per day(Green, 2016). Just the next month they would have 500,000 active users and a new $25,000 round of "pre-seed" investment (Jackson, 2016)� and eight months after that they would launch a new updated application with a smoother interface providing a live map of the traffic reports akin to Waze. Over the years that I'd been going to Nairobi, Ma3Route was often mentioned as an example of a small startup that seemed immensely popular with those in the Nairobi tech scene, one of the few Kenyan apps that people in the space seemed to use themselves on a regular basis.

So when Stéphane walked onto that 1776 stage, he did so with the casual confidence of someone who knew he was among fans; he was in familiar territory. Without saying a word, the crowd exploded with excitement at just seeing Stéphane and the familiar blue, red, and yellow of

the company's logo on his black t-shirt and on the projector screen behind him. The judges, however, seemed unconvinced. Just a year prior, the two giants of the traffic mapping world, Google Maps and Waze had both launched in Nairobi (E. Wainaina, 2015). To the judges, it seemed as if Ma3Route would soon become obsolete or even if it didn't, it had little hope of scaling beyond Kenya. And confronted by both a global giant of the tech world and *an Israeli unicorn, the hero of the 'anyone anywhere' movement, Ma3Route indeed faces a challenge, especially if it wants to grow beyond Kenya.*

The judges grilled Stéphane with suspicion. Yet he seemed almost dismissive of their concerns. "Waze doesn't know the Kenyan market. At Ma3Route we know the city because we live here, we know where the roads have problems and which shortcuts the matatus use; we know this city the way Waze can't. Our users know we are committed to Kenya." In a room, at an event, hosted by a company that all seemed to glorify the ideals of a Global *Community of Technology Innovators (GCTI), Stéphane stood clearly and confidently in defiance of one of those ideals: the pressure to scale globally. When asked similar questions, the vast majority of the startups pitching that night all seemed desperate to demonstrate that they had a growing and expansive future, that they could be relevant to people far from Nairobi, and that they had the potential to make some 'real money' for their investors. But in his response, Stéphane, took a stance and presented a company that seemed to prioritized the people of Nairobi – prioritize them over other countries and over the financial support and attention that might come with winning the competition, over even legitimacy in the GCTI. Instead, he was focused on solving a problem that seems universal – traffic – but that manifests in a particular way in Nairobi using a hyper-local solution that listened to its users both in crowdsourcing and in its approach to building a business. At the end of the night, Ma3Route did not win the African Regional Rounds of the 1776 competition; they didn't even place. Three months later, however, they did succeed in receiving a small $25,000 round of seed funding from a venture capital firm called EchoVC Partners, with ties to both Nigeria and the United States, though its future is still very much uncertain*

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With the pressures on tech innovation to expand, to grow, to pivot or fall by the wayside, the approach that Ma3Route took on that competition stage in defiance of such pressures may signify that it will one day become obsolete, overpowered by the billion dollar valuations of its competitors and an industry that wants its champions to solve global problems and not just local ones. But it also represents a push among some in Kenya's own community of technology innovators (Kenyan CTI) to move away from the Silicon Valley model of innovation and the conforming pressures of the GCTI.

In the previous chapter, I showed how many Kenyan entrepreneurs working to become GCTI members and successful tech entrepreneurs have often found that the reality differs greatly from the stories they had heard and the expectations they held. I recounted the stories of some of those as they struggled in the face of this discrepancy and in the face of constricting narratives about Africa and about what a successful technology innovator should look, act, and sound like.

Frustrated by such barriers, I found many in Nairobi, like Stéphane at Ma3Route to be pushing back against the pressures. Some are pushing back in small ways making individual choices, like the programming student who chooses to go to church instead of working through Sunday on her coding homework; like the startup that moves to a small traditional office in Nairobi's CBD instead of staying in the open plan coworking space in the hip affluent suburb; or like Paul whose story I told in the previous chapter and who chose to turn away from venture capital funding altogether after the unfolding of the Angani Saga. Other pushbacks, however, come on a larger scale or on a more public platform. Stéphane's very public resistance to prioritizing a global market over a local one is one such example. While it was indeed an individual move for an individual company, it was performed on public on stage, offering a clear critique of one of the core components of the GCTI's shared repertoire of practices. Throughout my fieldwork, I found others making similar moves to Stéphane. But where Stéphane's was a

critique of the GCTI system, some others are making more purposeful movements to change the broader way in which technology innovation in Kenya's own CTI is practiced and understood, even if it means moving away from the GCTI. In this chapter, I will explore a few of these forms of resistance. I will begin first by discussing the particular dominant practices of GCTI style technology innovation that are being targeted and then move on to some of the techniques, particularly the narrative techniques that are being employed to reconfigure which practices Kenya's CTI wants to keep and which it wants to reject.

Rejecting Practices

Funding & 'vulture capitalists'

In Chapter 3, I retold the story of the Angani Saga—the case of the popular cloud storage startup embroiled in controversy between its Kenyan founders and its funders, some of whom were white and foreign—to illustrate some of the challenges Kenyan entrepreneurs are facing. Rightly or wrongly, this case came to be associated by many in the Kenyan tech sector with the term "vulture capitalism" (Loewenstein, 2014). In the United States, 'vulture capitalism' has historically been used to refer to venture capitalists who invest in struggling companies in the hopes of turning them around. Now, that definition has almost been completely supplanted by the more popular derogatory slang understanding of the term,[7] referring to venture capitalists who come in using their wealth and power to takes advantage of more disadvantaged groups. In the startup context, this is typically seen as depriving founders of their legitimate claim to their company. Until the Angani Saga in 2015, I did not once hear the term 'vulture capitalism' employed in Nairobi; afterwards, it arose more often, though at times with hesitation (E. Wainaina, 2016).

The publicness of the discourse around this quite high-profile incident, and the growing fear of the potential to have an adversarial relationship with an investor, led many Kenyan entrepreneurs I knew to change their behavior. For example, some saw it as a singular problem with the investors at Angani, and said they would never accept an investment from them again. Others drew a broader conclusion and swore never to accept foreign funding in general. In fact, some of the most successful entrepreneurs I knew, including Faith (highlighted at the end of Chapter 3) grew their companies while purposefully only accepting investments from Kenyan funders. This position echoed the calls I observed in 2016 to grow a culture of local investors, high net-worth Kenyans who knew the local environment and didn't bring the same narrative baggage as foreign investors. Over the course of 2016, I observed a handful of Kenyans who had become successful entrepreneurs, including many of those involved in the founding of the iHub, choose to invest some of their profits back in Kenyan startups. But that pool is still very small, and many I spoke with complained about the difficulties of building a local investment culture beyond those few. Most of the high net-worth individuals in Kenya have been accustomed to a more assured approach to investment, where returns may be more linear, but more assured. One prominent figure in Kenya's CTI explained how her conversation with Kenyan investors had historically gone.

> The conversations I've been having with some local investors have been: 'Why don't you stop building bad apartments and give this entrepreneur 10mil shillings? It's like nothing!' They go, 'That's fine, how do I get my money back?' They expect a sure thing. Joe Muchero has done a few

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[7] Used famously in the United States to refer to the corruption in the financial sector associated with the excesses that led to the 2008 economic crisis.

investments. But we need more local investors at the entry level. Whether it's debt or equity, because then we solve this problem of equity and having to do a song and dance for the expat investors.

However, by 2016 and 2017 *foreign* funders were no longer the only ones associated with the risk of 'vulture capitalism.' For example, Phares Kariuki has been an outspoken critic of the excessive valuations for tech startups and the exponential growth that is expected of them that come with venture capitalism. "You do not need all that capital" he explained in a 2016 interview with the popular Kenyan tech blog Techweez (E. Wainaina, 2016). Instead, he often encourages entrepreneurs to develop partnership with existing Kenyan 'enterprise' tech companies (larger, more established companies), rather than seeking out funding from venture capitalists who bring with them such high risks. Similarly, in follow-up interviews I conducted in 2017 after my primary fieldwork was complete, a handful of entrepreneurs described having experienced problems, even with *Kenyan* funders.

By far the most prominent and most frequently criticized of the Kenyan investors was Safaricom. Safaricom is Kenya's largest telecommunications company by far. According to the most recent report from the Kenya Communications Authority, Safaricom accounts for just under 72 percent of the country's telecom market (Communications Authority of Kenya, 2017). It is also the parent company for M-Pesa, the mobile money application that skyrocketed Kenya to international attention in the global tech space, and around which many Kenyan financial startups are built. While individual staff and representatives of Safaricom that I interviewed often seemed to express sincere interest in building up the country's startup space, the company's reputation among entrepreneurs and techies in Nairobi was decidedly negative. More than a few people referenced Safaricom's reputation for "killing its companies". This was typically in reference to individuals who claimed to have gone to Safaricom to pitch an idea only to find that idea launched independently by Safaricom itself while receiving neither compensation nor credit themselves. Below is an excerpt from a focus group discussion I moderated in December 2016, that gives a sense, I believe, of the intensity of the debate around Safaricom.[8]

> Participant 1: Ok, so I feel…I feel that Safaricom has an undeserved reputation [referring to its reputation to kill companies].
>
> P 2: [Interrupting person 1] Really?!
>
> [Many other participants attempt to jump in at the same time]
>
> P 3: Nooooo!
>
> P 4: No! Fully deserved!
>
> P 5: They stole ideas!
>
> P 2: They have 5 ideas they stole!

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[8] All of the focus group participants in this excerpt are Kenyan and are either entrepreneurs themselves or worked for startups in Nairobi. The content of this excerpt has received minor edits to improve clarity and ease of reading.

P 4: M-shwari?[9] They stole M-Shwari from Faulu Kenya.[10]

P 1: Yeah but M-Shwari's technically the same as other companies like Tala, like Branch[11] [both also mobile based loan companies]…like…

P4: My point is, if M-Shwari was owned by Faulu Kenya today, they [Faulu] would be a much bigger bank…

[People in the group laugh]

P5: But also before there were the big ones like Tala and Branch, there was the idea of paying your rent via M-Pesa. That was a startup, a proper startup. They pitched to Safaricom. Gone.

P6: Gone!

P5: Then there was also Kopo Kopo.[12] Kopo Kopo was disabled by the fact…

P1: [relenting] Ok, ok. Safaricom deserves its reputation!

Moderator [myself]: Is the legal structure at fault here…?

P1: Are you going to take Safaricom to court for the next 10 years?

P3: You don't have the money!

P4: You don't have the time. You'd be dead before they resolve anything. A Kenyan court system is actually…Kenyan courts are places where cases go to die.

P6: Yes!

In this excerpt, the individual, P1, who is not affiliated with Safaricom, spoke first attempting to defend Safaricom, but was quickly shot down by the other participants who cited examples of ideas and companies that they believed Safaricom had stolen. Outside of this focus group I also heard rumors that the idea for M-Pesa itself was stolen from two guys who originally pitched the idea to Safaricom. As you may recall from Chapter 3, Safaricom has also been the focus of controversy around preferential treatment for funding startup led by foreign entrepreneurs. It is perhaps inevitable that the behemoth of Kenya's CTI would be the focus of so many rumors, so much discussion about fears of injustice, corruption, and manipulation. However, what is more

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[9] M-Shwari is a mobile savings platform launched by Safaricom using its M-Pesa platform in partnership with the Commerical Bank of Africa in 2012. Faulu Kenya, a microfinance company claims publicly that Safaricom stole the idea from them and took Safaricom to court. The following articles prove more detail of the accusations and the court case: http://www.nation.co.ke/business/Safaricom-stole-our-idea-to-roll-out-M-Shwari/996-1641900-121ul3jz/index.html; http://kenyalaw.org/caselaw/cases/view/89460/
[10] Faulu Kenya is a deposit-taking microfinance bank
[11] This is a similar argument to the one made by Safaricom in court, that Faulu Kenya was not the only company to come up with the idea for a mobile savings platform.
[12] A startup created by three American entrepreneurs that helped businesses accept mobile money using M-Pesa

important for the purposes of this analysis than whether or not such transgressions *actually took place*, is how such fears are shaping the way Kenyan entrepreneurs *behave*. Like with the Angani investors, many entrepreneurs in Kenya have chosen to actively avoid Safaricom as a result. Perhaps even more so than the Angani investors, Safaricom is seen to be far more powerful than the many small startups that dot Nairobi's tech scene. In both cases, a fear of being taken advantage of by powerful funders abounds, strengthened by the belief that even if wronged, there is little chance of legal justice for the singular entrepreneur.

Combined with other incidents of entrepreneurs being taken advantage of, the cases of Safaricom and Angani have led to a sense of wariness about investors in general, not just foreign investors. Paul, as I mentioned earlier, cited the Angani Saga as a reason why he was unwilling to accept equity investments of any kind that might jeopardize his claim to his company. Similarly, others told me that they were reluctant to pitch their ideas to potential partners or investors for fear of losing their company. Take this excerpt from later on in the discussion from the same focus group cited above:

> Participant 4:[13] …sometimes we are not willing to call a spade a spade. There's integrity problems in Kenyan culture.
>
> Person 1: Testify!
>
> Person 4: There really are. So you go and you pitch an idea, a product you came up with and you can see the IT manager thinking: how can I steal this for myself?
>
> Person 2 [interrupting]: Not even for myself…but do I have a cousin? Do I have someone else who can create that company?
>
> [Group laughter]

As this excerpt makes clear, foreign investors are not the only potential funders and partners many Kenyan entrepreneurs are rejecting. Many have also become more secretive as a result. From a national-level CTI that had previously often been described to me as "communal," "supportive," and "collaborative", many entrepreneurs in Nairobi in 2016 were opting instead to be more secretive, to keep their ideas to themselves for fear of having them stolen. Echoing the sentiment from the focus group discussion, one staff member at the iHub that I came to know quite well, explained why she believed people in the Kenyan CTI had become less willing to collaborate.

> "We in Kenya we have a lot of issues to overcome," she started.
>
> "Like what?" I asked her.
>
> "Corruption! Every time you want to do something, someone else will go and make his own because he has a few shillings more than you. That's why people don't like to collaborate a lot. They're worried someone is going to steal their ideas. But in the tech space, collaboration should be one of the things we focus on, especially at the iHub. We convene people. We should encourage collaboration more."

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[13] Continuing the participant numbers from the previous excerpt

These examples depict not only the rejection of specific individual actors – from both within Kenya and abroad – *but also call into question the role of the investment practices that are fundamental to the way technology innovation is practiced in the GCTI*. For some, this extended into a frustration with the whole fixation on entrepreneurship, frustrations that touched at the very core of the GCTI's main enterprise: building startups. One prominent figure in Kenya's CTI and a co-founder of Ushahidi and the iHub, Ory Okolloh, has become a particularly vocal advocate for the reevaluation of the fixation on entrepreneurship and startups. In a talk at Quartz Africa Innovator's Summit in September 2016, Okolloh eloquently summed up much of this frustration:

> I'm concerned about what I see is the fetishization around entrepreneurship in Africa…Like, don't worry that there's no power because hey, you're going to do solar and innovate around that. Your schools suck, but hey there's this new model of schooling. Your roads are terrible, but hey, Uber works in Nairobi and that's innovation…We can't entrepreneur our way around bad leadership. We can't entrepreneur our way around bad policies…We have to question why is there this big push for us to innovate ourselves around problems that our leaders, our taxes, our policymakers, ourselves, to be quite frank, should be grappling with…And the same people who are pushing this entrepreneurship and innovation thing are coming from places where your roads work, your electricity works, your teachers are well paid…No one is trying to innovate around your electricity power company. So why are we being made to do that? (Kuo, 2016)

In this and other appearances, Okolloh is not arguing for the wholesale rejection of entrepreneurship, but rather more careful attention and reflection about when it is employed and why.

Space & the focus on *new* technology

Other, perhaps less fundamental aspects of the GCTI repertoire of practices are also being brought into question and challenged. Some, like the 'entrepreneurial spirit' that prioritizes round the clock dedication to innovation, are challenged out of necessity. Many of the young 20-something innovators I encountered in Kenya, for example, were married and had families, requiring a more balanced-life approach to innovation than that taken by, and expected of, their counterparts in Silicon Valley. Others – like the choices around the physical spaces of innovation and the need to constantly build and find *new* innovations – are being rejected quite purposefully.

As we saw in Chapter 1, the GCTI's material culture often includes the latest design features and aesthetics, and open-plan office spaces combining work and play, meant to encourage creativity and collaboration. Spaces like the iHub and other coworking spaces in Nairobi are frequently in line with this with their large windows and 'hot desks', bouncy ball chairs, and open-plan spaces. As I showed in Chapter 1, like their Silicon Valley counterparts, such spaces in Nairobi are an explicit rejection of traditional office life seen as stifling for innovation. Yet, I found a number of Kenyan innovators to be purposefully turning away from them, and at times back towards more traditional office spaces.

One such example is a Kenyan online magazine called Ghafla!, an entertainment and gossip magazine that one entrepreneur described to me as "Kenya's TMZ". Ghafla! was an early entrant into Kenya's startup scene placing as Runner Up in a startup competition hosted by the iHub back in 2011. Soon after, an Africa-focused Danish investment group, 88mph, invested $25,000 in Ghafla! in return for 25 percent equity in the company. Soon, 88mph opened their own coworking space in Nairobi (what would soon become Nairobi Garage) not far from the iHub and invited the founders of Ghafla!, Sam Majani and Lyosi Mwedekelito, to move in. They

offered free access[14] in return for being an early investee of 88mph. But Majani and Mwedekelito rejected the offer. The travel to 88mph's coworking space in the relatively affluent suburb of Kilimani, was time consuming and cumbersome, requiring two separate bus trips. Instead, they decided to lease a more traditional office space in the CBD. Being in the center of town, it was far easier for their small staff to get to work than Kilimani, and in their estimation, well worth the overhead they had to pay for the physical space. Having a private space allowed them to build up a real community sense with their staff and a seriousness for their growing business that they felt a coworking space lacked. Originally housed in the coworking space, Nailab, they felt they had outgrown Nailab's other early stage startups and needed to "get down to business" in a "real" office.

Majani and Mwedekelito were not alone. Even founders of startups based in the coworking spaces often told me that as soon as they could afford it, they would move to their own private office, sometimes elsewhere in Kilimani, sometimes in another affluent suburb of Westlands, and sometimes, like Ghafla! in the CBD. That said, it is a normal part of any technology startup in the GCTI, including those in Silicon Valley, to move into a private office as soon as they've outgrown the communal coworking spaces. Some, like MKopa Solar, a very successful startup in Kenya that connects Kenyans to solar power through a pay-as-you-go system, clearly embraced the approach of their American counterparts. Not only did MKopa Solar move to a private office once they were large enough, but they also adopted much of the architectural style that marks the typical growing technology company in Silicon Valley. They constructed a purpose built private campus for the company's office in Kilimani, around the corner from the iHub, filled it with lush green outdoor spaces and grey and white and glass building constructions filled with open plan offices and couch-filled comfortable corners encouraging collaboration. Somewhat ironically, like the Silicon Valley companies before them that adopted more casual dress styles to signify that they were paying more attention to innovation than to superfluous things like fashion, some of Kenya's innovators, like those at Ghafla!, have begun purposefully rejected these stylistic choices, seeing them as superfluous to "getting down to business". One entrepreneur I spent a great deal of time with, I'll call him Vincent, spoke at length to me many times about his frustration with the norms of office spaces in the tech community and the pressure to conform to them. I quote from him at length below because he not only articulated so eloquently his frustration with tech spaces in Nairobi, but his sentiments echoed those of many others I spoke with.

> "Truth be told, and I know it'll make me sound like a very doer and boring person, but I think that sometimes the startup culture can get ahead of itself. And it's not just in Kenya. I've seen even on YouTube and stuff the way startups all are trying to compete about who will have the zaniest and coolest and most hip and progressive nutcase-y office. You know? It's nice. But how much of it is really real? You know? And then I stumbled across an article where it was talking about programmers and the programmers are saying how they hated open coworking spaces. And it's been taken as a, it's almost a truism, no, it's an orthodoxy now. You know, 'open plan is all the future', 'open plan means open ideas and communication'. But it also means distraction; it means lack of privacy; it means running away every time you want to make a phone call or talk to your girlfriend or your hubby or your kid or something that might be personal, that you don't want the whole office to hear. And also taking away an element of people's individuality. So, when I look down the road at our own startup and our plans and how we're planning

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[14] Unlike the iHub at the time, Nairobi Garage charged for the use of its space

to grow and we've been looking forward to that, I think that I don't know whether we'll end up doing an open plan or not but I decided that for sure everyone is going to get their own desk. You're not going to be a hot-desking battery chicken! Everyone's going to have their own desk, with some space around them and you know a place they can call their own and identify as their own and personalize. I think you still have to let people be human beings. And it's not all about the organization, it's also about their happiness. I'm not going to do the crazy zany office thing. We're gonna have a sane office. I don't need handcrafted things from Gikomba [a popular market in Nairobi], or recycled bicycle rims from Cape Town. We don't need to and we're not gonna do it. I'm going to try and brake the coolness mold and just be a normal office for a change ."

"Where do you think this came from?" I asked him.

"I think it's a Silicon Valley thing," he explained. "I think Google started it and before long everybody was supposed to be skateboarding or riding bikes indoors and you know bouncing around on bouncing chairs and doing the work lying down. There was a cool wave and like all waves they tend to overshoot and so I remember reading an article about how before Erick Schmidt came to Google they had all manner of crazy things, annual ski trip for the entire company. I think that's what happens. Waves come and then things overshoot."

Of course, in a community that has grown to a global scale, people in different parts of the world will approach the work differently; no matter how entrenched the community's accepted practices and material culture, people often adapt global practices to suit their personal local environment. The Kenyan entrepreneurs with families I mentioned earlier are examples of people adapting their approach to innovation to fit their individual environments. By contrast, in the above excerpt Vincent makes it apparent that his choice to reject the 'trendy' office style, is not a matter of chance; it is not an *adaptation* of the larger GCTI's material culture to his particular environment. Instead, it is a *purposeful rejection* of an unnecessary trend that he sees as promulgated by GCTI icons like Google. Vincent and a handful of others I met believe that the pressure to build hip spaces for tech startup offices is a distraction, something to focus on aside from the substance of the product being built. In the case of the iHub, for example, when they were looking to build a new office in 2016, the staff were engaged in a 'participatory' process to design the new space; many, however, participated reluctantly wondering if it was worth taking them away from the real work they would otherwise be doing. In their and Vincent's eyes, so much time and money seems to be spent on unnecessary space design among Kenyan startups overshadowing the real work necessary to build a company. Ironically, in the trendy coworking spaces like the iHub, many of the "quirks" that seem to symbolize Silicon Valley's CTI's own push to break with American conventions about work place culture—the balance ball chairs in the Nailab, the foosball table in the iHub, the private call space in the shape of a British telephone box at Nairobi Garage—frequently go unused. One iHub member, who'd been working from the coworking space for years, confided to me that he'd only ever seen people playing on the foosball table once. Similarly, every time during my early visits to Nailab in 2013 and 2014, the balance chairs sat unused lining the wall, while the tables were all full of people sitting on ordinary stationary, though brightly colored, chairs. By 2016, there were no balance chairs in sight.

Such frustration with trendy offices represents something more than just a frustration with the pressures around the material spaces of innovation that have become common in the GCTI. It also represents an exhaustion with innovators' and investors' infatuation with the latest,

newest, hippest technology. As we saw in Chapter 1, prioritizing the newest most advanced technology is often a fundamental part of GCTI's practices, a necessary practice in order to avoid falling behind in the fast-paced world of developing the newest most state of the art technological product. But as Vincent so eloquently explains, "sometimes the startup culture can get ahead of itself". This emphasis on the new can become problematic when applied to things like offices which don't necessarily need to be new in order to be effective sites for programming. Despite evidence that programmers don't actually like open-plan coworking spaces (Collins, 2016), it became a trend (or what Vincent called a wave) that started in Silicon Valley and spread to Kenya. To people like Vincent, what's on a particular wave, what's trendy at the time seems to be more about image than substance. And this applies equally to trends about space as to trends about technology itself. Since the start of my fieldwork in Nairobi in 2013, trends in what was 'hot' in Kenyan technology innovation have gone from mobile phone apps to agri-tech startups to transportation startups and most recently to fintech startups, particularly those employing original algorithms. Each change in trend wasn't necessarily due to the latest technological advancements as was historically the case in Silicon Valley (Rogers & Larsen, 1984), but more often to whatever investors were interested in funding or whatever had gotten the most media coverage. The trend around mobile apps for example coincided with a wave of interest from global technology companies – Microsoft, Samsung, Nokia, and Google most notably – around 2013 in funding developments on their respective hardware of mobile operating systems, leading to, among other things, funding earmarked for training Kenyan programmers on different platforms or for providing physical handsets on which designers could test out product. Vincent and Ghafla! and others in Kenya's tech sector are, often in quite small ways, attempting to reject some of these pressures to follow whatever is trending, to look beyond what is being hyped, at a particular time in the GCTI or in the Kenyan branch of it. But in rejecting such trends as lacking in substance, some in Kenya's technology sector are rejecting another mainstay of the GCTI: storytelling and the hype around particular things that it helps to build.

Storytelling & 'hype'

> "It was just hype." "There is this perception that it is over-hyped". "I think Kopo Kopo was over-hyped." "There was always a lot of hype about the iHub." "There's a lot of hype around innovation innovation innovation." "They really hype you up and then expect too much". "So many VCs come here because of the hype." "It's hard to say we're hype if there's substance like Kopo Kopo." "We are never hype."

Hype. The frequency with which I heard this word thrown about during my time in Nairobi played no small part in influencing my decision to focus on the role of storytelling and narratives in Kenya's tech sector to begin with. Connoting a story that has run away from the truth, an exaggeration of reality, the term, hype, as some of the quotes above make clear, was often employed by members of Nairobi's technology sector to convey frustration with unrealistic or misguided expectations that had been created by an inflated or misleading story. Like the trend celebrating open-plan coworking spaces for innovation, stories that build hype are often seen as celebrating something that it subsequently turns out has not earned the attention. At times, particular companies (like the iHub, as we will see in more detail in Chapter 5, or Kopo Kopo) were accused of being "over-hyped"; at other times, it was particular narratives (like the Technology is Good Narrative from Chapter 1); and other times still, it was Kenya's entire tech sector. One of the biggest complaints I heard about hype was that it created unrealistic expectations. Some pointed to the unrealistic expectations brought by foreigners coming to Kenya. "So many VCs come in here because of the hype only to reach here and look at ideas being pitched and they look half-cooked" (Interview with a Kenyan investor). Others pointed to

the unrealistic expectations of wide-eyed Kenyan students hoping to become entrepreneurs. "So many students from campus come here [to the iHub] and think it's easy to build a startup. It looks glamorous and exciting. But so many of them end up struggling. They'd be better off going to work for a company like Copy Cat Group [an example of what Kariuki called an enterprise technology company]" (From a conversation with one of the iHub's staff members). While the subject of this derisive adjective often varied, the common denominator was its use to indicate some kind of a "gap" *between a story and reality*. Sometimes the reality was a product that was ineffective, or a company that was unprofitable, corrupt, or unable to sell its products. Sometimes the reality was a practice (like cool offices) that had become popular but was actually quite ineffective at its stated purpose (making workers happier and more productive). Sometimes the reality was simply more complex and multi-faceted than the story most often told.

      As I have demonstrated in previous chapters, startup entrepreneurs today operate in a very saturated communicative ecology, that offers the double-edged sword of access to a wealth of information from a variety of different sources about how to write code or how to manage staff, but also a wealth of competition, making it particularly difficult for entrepreneur to get attention for their design. The "hype cycle" (Linden & Fenn, 2003) has become an intrinsic part of this process of this. And crucially, hype is not just something experienced in Kenya's technology sector, but as anyone who follows GCTI core news outlets will know – take, for example, the current popularity of blockchain– a symptom of the way technology innovation through startups is currently practiced. As far back as 2008, the media scholar David Silver wrote succinctly about the media hype that had helped to make "Web 2.0" popular, despite what he viewed as the lack of any substantial changes to the way the internet was structure (2008). He used the story as a warning against what he called "corporate hype". "Don't believe corporate hype," he wrote. "Corporations exist to make profits, not public goods. Usually, when they say 'community' they mean 'commerce,' and when they say 'aggregation' they mean 'advertising'". Heeding such warnings, below are a few examples of companies, practices, and narratives that many Kenyan techies described to me as being "hyped" or "over-hyped".

Hackathons

Some of the things accused of being 'hyped', like the trendy office design, are common in the broader GCTI and are not exclusive to Kenya. One example of this is the hackathon. After speaking at length with a number of people involved in organizing hackathons in Nairobi, many felt that, while funders (particularly in this instance non-profit funders) continued to want to sponsor hackathons, they were in fact seen as largely ineffective at reaching their goals. One organizer, named Evelyn, described hackathons to me as "cooking up ideas from our asses". Elaborating, she said: "You're put into a room and made to work with people you don't really know on a project that sometimes seems like an arbitrary assignment. Is this really a way to start a business?". By many accounts outside of Kenya, the hackathon has indeed gone the way of Google Glass. Journalists have written about how it's over (Gapusan, 2017), how it's bad for innovation (Sastry & Penn, 2015), and how some individuals subsist on jumping from hackathon to hackathon without really producing anything new(Broussard, 2015).

Tech can save the world

Similarly, particular community narratives from the broader GCTI were often categorized as over-hyped. For example, the Technology Is Good Narrative from Chapter 1 – the narrative about how technology can save the world, that reinforces fundamental shared community belief – was, by 2016, met with exhaustion by some in Kenya, seen by then as being "overplayed". Vincent, for example said explicitly: "'Tech can save the world'—I hate that story with a passion. It's like the fancy chairs in the office. It's a distraction." Similarly, at the annual meeting of the Kenyan Internet Governance Forum, a Kenyan techie that I was sitting with rolled her eyes in an

exaggerated gesture when a Facebook representative spoke about the work that they were doing to "make the world a better place" and to "improve access to the internet in Africa". For her, as she later explained to me, such rhetoric was "all talk", necessarily insincere. Even if Facebook was trying to improve access to the internet in Africa, she said she knew it wasn't because they wanted to "make the world a better place", but because they wanted to "make money". These and other more established members of Kenya's tech sector felt frustrated, at times insulted, at the persistence of such narratives because of how inconsistent they were with their own lived experiences.

M-Pesa

Other stories being rejected as over-hyped were unique to Kenya. For example, numerous people I spoke with described M-Pesa as over-hyped. In this case, the label of "hype" is applied not to describe something that is completely ineffective, but rather to describe a story that is over-told. Few people I spoke with deny that M-Pesa is a useful product that has enabled mobile money based technology innovation that was not possible in countries without a similar platform. But many are frustrated with the frequency with which the M-Pesa story is told, at the expense of other, less well-known, stories about Kenyan innovators. A Kenyan manager of one of Nairobi's community spaces for tech entrepreneurs articulated his frustration with the "single story" of M-Pesa in the following way:

> People know about M-Pesa. So the M-Pesa story becomes over told and it's a narrative that everybody knows. So people see you and they ask, 'where are you from?' 'Oh, I'm from Kenya' 'Ah! So you know M-Pesa?' People don't even know Safaricom, but people know M-Pesa. And Safaricom is the mother of M-Pesa! So I think the international coverage only focuses on M-Pesa. And I know, M-Pesa is good. It's great; it's opened up a lot of opportunities for this ecosystem. But we, as the people in tech, we just need a fresh idea, a fresh story.

To him and others, the reduction of this complex ecosystem that they live in every day to a "single story" of M-Pesa, no matter how important that product was to the growth of the ecosystem, had become tiresome in a way that funders and others coming in from abroad didn't seem to understand. One of the iHub's communication staff, for example, recounted a story to me of working with a large international donor that came into Kenya and wanted to work with the iHub to put together a media piece on "mobile money and M-Pesa". Instead, he helped them to restructure it, advising them to "try to cover more of mobile money than M-Pesa".

Other Kenya narratives

While M-Pesa is the most well-known, there are other "over-hyped" narratives about technology in Kenya that also cause frustration. For example, there's the narrative about how Kenyan startups are primarily mobile phone *applications* ("Apps are not that big anymore. They've not been big for the longest time, like the last two years"); or the narrative about how technology designed for Africa needs to be *rugged* for the challenging environment ("There's a whole bunch of people coming to do things for Africa and it's always a reduced version of something that already exists. It's always a lighter version or a rugged version and people don't want that shit"). Even the moniker adopted to describe the Kenyan tech sector, *Silicon Savannah*, is a source of frustration ("Silicon Savannah. It's a misnomer. There's no silicon here. We don't build chips. We build digital technologies!").

To some of the people living and working in Kenya's CTI, simplifying it to any of these narratives is not only irritating or even insulting, but it can also have *tangible and detrimental effects on the work they can do*. Like the reductive narratives about the broader continent

described in the previous chapter (the Failed Continent v. Africa Rising) that seem to pigeonhole many Kenyan entrepreneurs into "social entrepreneurship", these one-dimensional narratives about Kenya's tech sector can curtail what funders are looking for. For example, many of the entrepreneurs I knew were frustrated with the dominance of the M-Pesa story because it heightened the popularity of funding "fintech" or "mobile money" startups over other kinds of projects.

Kenya as the tech hub of Africa

But of all the narratives about Kenya's technology innovation community, the one that seemed the most controversial was: the narrative about how Kenya was leading the continent in technology innovation.[15] Many acknowledged that the traction this story received in the international press (particularly in 2010-2013, as I will show in Chapter 5) contributed in some way to the initial growth of the sector. But by 2016, many entrepreneurs that I came to know believed that it had been *too early* to tell that story. One entrepreneurs I spoke with said it misled people coming to expect a more developed tech sector when it really was still in its fledgling stage; another said it misled many Kenyan IT graduates to believe that there were more opportunities for them in tech entrepreneurship than there were. The iHub's entrepreneur mentors reiterated these sentiments during an interview: "People [referring to Kenyan students] thought, 'all these companies are being formed. Let me get in on this'. Now what we're realizing is there needs to be a lot more emphasis on quality and a lot more realism. …We need a lot more focus not just on entrepreneurship, but on the quality of the craft and not just build startups for the sake of startups." Another entrepreneur I spent a great deal of time with articulated the double-sided nature of the impact the popularization of this particular narrative has had.

> "Those stories," he explained, "…people came with money looking for things to invest in and maybe didn't find those things. Some people came here to work for startups that didn't go anywhere. You could see Harvard and Yale degrees all over the place. On one hand, some people put money into other things; on the other hand, some people left saying this was all bullshit and never came back".

Representative of 88mph (the Dutch investment firm that had provided the initial funding for Ghafla!) famously said that Kenya's tech sector was "over-hyped" and decided to move its startup acceleration program to Nigeria (Analo, 2015) and turn its Nairobi office into a coworking space (Nairobi Garage, 2015). By contrast, one American, I'll call her Kate, I interviewed had chosen to stay. She described to me how she'd moved to Kenya to work for a startup called Mobius Motors, that claimed it was manufacturing a car, and went by the tagline "Designed for Africa. Built in Africa" (Mobius Motors, 2018). Over the course of my fieldwork, many people cited Mobius – as well as Sanergy, the startup claiming to turn human waste into energy – as an example of a startup that had gotten loads of attention from investors but had produced very few results. Incidentally, Mobius is another example of the companies that make ample use of the African branding, but are in fact predominantly controlled by non-Kenyans that were discussed in Chapter 3. By way of illustration look at the organizations "Team" page on its website, the photographs of show a sea of entirely male, and majority white faces. Only one is Kenyan and another of South Asian descent. After arriving in Kenya to work for Mabius, Kate said she quickly realized that it was "over-hyped", so she left, working first for a local startup

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[15] A narrative that was in fact originally promulgated by people in Kenya, especially, as we will see in Chapter 5, people at the iHub

investment fund and then joining a popular Kenyan transportation startup in the management team, where she still worked at the time of this writing.

Storytelling

Critically, as it turns out, it is not just individual narratives and stories like these that are being brought into question, but, for some, *it is the practice of startup storytelling itself*. Over the course of my fieldwork in 2016, it became apparent, through interviews and my observations, that many entrepreneurs wanted to "get down to business" instead of focusing on the public relations apparently necessary to get their product noticed. Some entrepreneurs described time spent on public relations as contributing to the "fluff" and spoke disparagingly about companies (including the iHub as I will show in Chapter 5) that were seen as spending too much time on their images and not enough time on the "substance". One startup community manager explained this sentiment to me in an interview. "There is this school of thought, especially of local entrepreneurs, who are like 'You know what? We are doing this. We are making some money. Let's just do it. We don't need to spend time talking about it, or talking about how we are changing the world. Talk doesn't pay the bills". Repeatedly, when I asked entrepreneurs about their "communication strategy" in interviews, many responded by saying that they didn't have time for a communication strategy, or they didn't think it was important, or they wanted to build their product up more first. This sentiment seemed to even be held by some of the foreigners who had joined Kenya's tech sector and chosen to stay. For example, one of the American founders of a startup based in Kibera that helps disadvantaged youth access new technology, I'll call him John, spoke disparagingly about organization like the iHub, that have spent a great deal of time on their media appearance. "They care too much what everyone thinks. And yet what have they built? What have they really built?" By contrast, I saw very little media coverage of John's organization and only heard about it when I met him at a conference where he was critiquing the culture of "vulture capitalism" and "toxic apps" during the Q&A for a panel on venture capitalism.

John and other entrepreneurs in Nairobi are choosing to do exactly the opposite of what we saw Faith do in Chapter 3. Through storytelling, Faith purposefully crafted an image for herself as a successful entrepreneur in line with GCTI dominant community narratives and expectations while also building up her company's product. But for other entrepreneurs like those cited above, that approach was often characterized as "self-promotion" and distracting from the real work that needed to get done. Sometimes it's not just startup storytelling that's rejected, but the *storytellers* as well. Just as particular organizations were singled out for their focus on their image and their story over their product, so have particular individuals associated with "hype" stories often been singled out for critique. Some of the individuals involved in the founding of the iHub (as we will see in much greater detail in Chapter 5), are an example of this.

What became apparent over the course of my time in Nairobi is that the frequency with which many of the narratives mentioned above turned out the be false or misleading (hype) has contributed to an overall sense of malaise with the act of storytelling, with the media, and even sometimes storytellers among many entrepreneurs and technologists in Kenya's CTI. Like the moves I outlined earlier rejecting other received practices of the GCTI like the venture capitalist funding model and the material culture, the moves questioning the value of entrepreneurial storytelling and the value of the focus on the newest and hottest product challenge existing assumptions in the broader GCTI about the best way to build, fund, disseminate, and understand new innovations.

As a result, a small but important minority of the members of Kenya's own community around technology innovation that I interacted with were not just complaining about these problems or critiquing the pressures and barriers they experienced, they purposefully working to

change the way technology innovation was being practiced and talked about in Kenya's own community of innovators.

Reshaping Practices

I'd like to return for a moment to the works introducing the community of practice framework with which I began this dissertation, particularly Etienne Wenger's book *Community of Practice* (1998). In it, as I explained in Chapter 1, he writes explicitly about what differentiates a community of practice from other communities, namely: "mutual engagement, a joint enterprise, and a shared repertoire" (Wenger, 1998, p. 73). It is not enough for people to all share the same repertoire of practices, the same open plan coworking spaces, the same model of investment. They must be engaging one another in the community's shared enterprise (building technology through startups in this case), and in turn *jointly negotiating* what those practices should be (Wenger, 1998). This process of joint negotiation and mutual engagement was very important to Wenger and I believe it's particularly important to return to now. For him, engaging didn't simply mean co-participating in the community's practices (though that was an important part of learning to become a full members), it also required that participants were "being included in what matters" (1998, p. 74). As a result, participation in a community of practice can have a positive effect creating a "sense of community" (McMillan & Chavis, 1986) and shared meaning, when individuals are fully engaged in "what matters", in shaping the norms and values of the community. But, when individuals are not involved in this joint process of meaning-making, it can also be detrimental, leading individuals to feel excluded or like they do not belong. This gets at older understandings from the field of psychology about what it means to be a member of any kind of community, which have shown that if an individual feels like they have invested themselves or sacrificed in some way they will believe they have the right to belong (Aronson & Mills, 1959; Buss & Portnoy, 1967), and that when members only feel a "sense of community" and belonging when there is "a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (McMillan & Chavis 1986, p. 9). Put more plainly, members are more drawn to communities in which they feel like they are or can be influential.

What I hope to have shown over the course of this and the preceding chapter are the ways in which some Kenyan innovators did not feel influential or understood within the global community of practice around technology innovation. After putting in considerable time and effort sacrificing alternative career paths or financial security, many Kenyan techies and entrepreneurs found that they were denied community legitimacy or recognition even when they felt like they'd done everything they were supposed to. And that as a result, many of the innovators discussed in the first half of this chapter were choosing to turn away, were choosing to de-prioritize the international GCTI audience in their search for meaning as technology entrepreneurs. As the linguist Bethan Davies write, "the flipside of legitimacy is choice" (Davies 2005, p. 567). As I showed above, some of chosen to reject some of the financing practice, the material culture, and the communicative practices expected of GCTI members.

Recall as well from Wenger's writings, that all individuals participate in *multiple* communities of practice throughout our lifetimes, or even simultaneously (Wenger, 1998). These Kenyan innovators are not just negotiating their terms of engagement in the GCTI, but in the Kenyan CTI as well, but with one key difference: Many of them have more of an influence in "what matters" in the Kenyan CTI than the global one. And while they have often found that this "negotiation" process with the GCTI has been rather one-sided, some, as I will show in the remainder of the chapter, have found such negotiations more productive at the national level. One of my favorite parts of the community of practice framework is that it conceptualizes the community not as a stagnant entity, but as an active one, in a mutually constitutive process with

its many varied members. That is, in a healthy community of practice, the practices of the community, and the community itself should *co-evolve* (Lave & Wenger, 1991). As Lave and Wenger have written:

> The move of learners toward full participation in a community of practice does not take place in a static context. The practice itself is in motion. Since activity and the participation of individuals involved in it, their knowledge, and their perspective are mutually constitutive, change is a fundamental property of communities of practice and their activity. (Lave & Wenger, 1991, p.118)

While the experiences of most African innovator have seemed to have little influence over the accepted practices and material culture of the broader GCTI, in the remainder of this chapter I will show one way in they have been able to influence the Kenyan CTI and that is through telling counter-stories and constructing counter-narratives. Intriguingly, I have found, as I will show, that in order to change community practices, it became to also challenge dominant *narratives* both about technology innovation in general and about how technology innovation in Africa is understood and valued, a process that involved engaging with storytelling practices that some, as I showed above, had rejected. Just as Faith used storytelling to reshape her personal narrative and portray an image for herself acceptable to the GCTI, so too have others in Kenya's technology sector employed storytelling strategies to work, sometimes in small ways, to reshape broader narratives about how technology innovation is understood and practiced specifically in Kenya and to draw attention to the perceived injustices and inequalities in the national level community. To do so, as I will demonstrate, advocates for changing approaches to innovation in Kenya often moved away from more mainstream forms of storytelling and instead employed more subversive elements of their communicative ecology, rejecting, for example, the traditional media and even blogs in favor of personal stories, rumors, humor, discussion forums, and social media platforms, particularly Twitter.

Reshaping Narratives

> Stories are important. They keep us alive. In the ships, in the camps, in the quarters, fields, prisons, on the road, on the run, underground, under siege, in the throes, on the verge—the storyteller snatches us back from the edge to hear the next chapter. In which we are the subjects. We, the hero of the tales. (American activist, Toni Cade Bambara, 1985, 41.

We saw in Chapter 2 how narratives and individual stories can work in mutually reinforcing ways to influence people to adopt a particular new practice (in this case technology innovation) or to aspire to join a particular community of practice (in this case the GCTI). On the other hand, in Chapter 3, we saw how they can serve to constrain what people are able to do or how successful others can imagine they could be at a particular task. Yet in addition to *reinforcing* dominant cultural norms and overarching narratives, research has shown that storytelling can also play a part in *resisting* them, and even changing dominant practice (Ashe, 1988; Delgado, 1989; Richardson, 1990). This has most clearly been shown to be the case in the study of social movements (Dimond, Dye, LaRose, & Bruckman, 2013; Razack, 1993). The feminist scholar, Lena Wanggren, for example, has argued that "storytelling and narrative creation have long played a part in social change and social movements, allowing people to learn, exercise, agency, shape identities and motivate action" (Wanggren 2016, p. 402). Through the telling of stories that are not often told, or *counter-stories* as she calls them, she argues that social movement can challenge the accuracy of dominant narratives. In her study of the "Hollaback! Movement" to end street harassment in the United States, Wanggren illustrated how the telling and sharing of

individual stories of diverse kinds of street harassment challenged the "patriarchal narrative" about street harassment being exclusively sexualized and gendered. Instead individual stories revealed the frequency of anti-Islamic and homophobic street harassment for example. Like in Wanggren's work on the Hollaback! Movement, the use of storytelling in social movements is predominantly characterized in the literature as telling *individual stories* that illuminate an inaccuracy in the received dominate narrative about an issue. Small stories told in particular ways by particular people in particular contexts are characterized as having the power to change received or ingrained narratives. "Since anyone can tell his or her own story," the narrative scholar, Francesca Polletta has written, "…personal narratives are a way to discover and communicate that which is shared in individual experiences" (Polletta 1998, p. 425) and are seen as particularly appropriate tools for challenging the status quo.

As in the case of the Hollaback! Movements, counter-stories are particularly adept at challenging the status quo when they are *believed to be true*, and targeted at inaccuracies, falsehood, mischaracterizations, or stereotypes in dominant narratives or norms. Given that one of the main critiques of many in Kenya's tech sector has been the role of 'hype' and 'over-hyped' companies, telling counter-stories, has become important in the moves to change the narratives about how technology innovation is and should be practiced in Kenya. Take, for example, one of the earlier dominant narratives about technology innovation practices in Kenya: that venture capital, including foreign venture capital, was helping to support and nurture fledgling entrepreneurs and their startups. Stories that strengthened this narrative have been told over and over again in GCTI and other big international media outlets. Take this excerpt from a National Geographic feature titled "How Africa's Tech Generation is Changing the Continent". While praising many of the Kenyan innovators themselves, the piece also highlighted the role of the investors: "During the past few years, tens of millions of dollars in venture capital has flowed from the West into such countries as Kenya, Rwanda, Nigeria, and South Africa. The result is a generation of innovators whose homegrown ideas could, in the manner of SafeMotos, improve the lives of their fellow Africans" (Jazbec, 2017).

Rumor

Over the years, counter-stories, or rumors opposing this narrative gradually spread among Kenyan innovators – rumors about 'vulture capitalists', recounting bad experiences with investors who took advantage of novice entrepreneurs. Yet few people were willing to name names or to go on the record with their accusations. As I was often told, most people with such a story to tell were too scared to speak out publicly, scared of losing their jobs, scared of losing the prospect of future jobs or of future investments. As 'Winnie', one of the more prominent voices in the move to change Kenyan innovation culture, described to me, "I don't think anyone was brave enough before Angani to speak out. It was tightly controlled. …There were lots of people who knew what was going on but didn't want to get maligned." In such a context, a rumor can be a powerful tool to help those who are also struggling to feel a sense of comradery, believing that others are struggling too (Samper, 2002). Yet while they remain in the form of rumors, it can be difficult for stories to successfully challenge or change dominant narratives, like the one above, as they can be easily dismissed as 'heresay' or, of course, just 'rumors'.

Things changed after the very public unfolding of the Angani Saga at the end of 2015, when the entrepreneurs involved stepped into the spotlight with their story. By doing so, they brought a conversation about investor behavior that had previously lingers in whispers and rumors, out into the public, forcing a very engaged, and at times acerbic conversation about both what the relationship between investors and entrepreneurs in Kenya's CTI really looks like and what it *should* look like. Crucially, the entrepreneurs' version of the story, as recounted in Chapter 3, seemed to reinforce so many of the rumors that had spread around Kenya's tech sector, making it easy for many of the people listening to believe it to be true. At the same time, the

investors similarly began to tell their contrasting version of the story publicly, describing the entrepreneurs as inexperienced and their actions as necessary to preserve the company. In the end, only the investors and entrepreneurs involved know what actually happened and even they probably interpreted the events and one another's actions differently. Stories are by their nature recounted away from the events they describe making it difficult for the audience to discern whether or not they are a true and authentic representation of events, a warped version of reality, or entirely false. The important thing in the Angani case, is that many *believed* the entrepreneurs' story of events *to be true* that it forced even those in powerful positions in Kenya's CTI to answer questions and to defend or question for themselves the dominant narrative about the role of venture capital in Kenya's technology sector. As David Samper showed in his research on rumors in Guatemala, when those in power address stories, even rumors, even when they are only addressing them to deny them, they "serve to legitimize the rumor by giving it 'official' status." (Samper 2002, p. 25). Winnie explained to me in an interview how the rumors and counter-stories around the Angani Saga changed the discussion in the following way:

> It's good that there were frank conversations this year [2016]. It's unfortunate that it took Angani's collapse to do so. I always tell Phares [Angani's CEO and one of the founding entrepreneurs], it was a gift. But it was also a shame. I think that the saddest thing is really that they were a good company that was solving problems. It had the potential to be great. Everyone had criticized them. 'What's innovative about this? How can you ensure the data is secure?' And they'd managed to address all of these things. What's really sad to me is that in some ways its reinforced the worst of how we build technology here. There's so few companies like them and it's reinforced that if you don't play well with the expat community then you get burned…After Angani, all of a sudden, I was part of a call for people to come with their own stories of what happened.

As she characterizes it, Angani opened up a conversation within Kenya's CTI that people had been previously too afraid to have publicly and paved the way for others, including herself, to add their stories about problems they'd faced in the sector, forcing people in the Kenyan technology sector to begin the process of authentic negotiation – important to any well-functioning community of practice (Wenger, 1998) – around what role foreign investors should be allowed to play in Kenya's CTI. Yet to her, the unraveling of Angani was also a shame, not just because a promising company collapsed, but also precisely because it reinforced many of the rumors. Despite the public debates around the Angani investors, Winnie told me of many investors she knew who engaged with investees in an ethical and transparent manner, and she worried about the new tendency for entrepreneurs to approach every investor with suspicion curtailing a culture of openness and community that she believed added strength to the early years of the growth of Kenya's CTI. After the Angani Saga, Winnie spoke out publicly and frequently on these issues. For example, in one blog post she wrote the following:

> The idea that either individuals or organizations are 'too big to fail' or that the tech and start-up sector is somehow different is wrong. If we want to protect those working in these areas, or anywhere else, we need to protect the values of respect, equality and openness, not specific organizations or people. The start-up eco-system in Kenya is no longer nascent, it can and must handle the hard work and tough conversations that will happen in the coming weeks and months.

In this excerpt, Winnie sets out clearly her priorities for the values and practices that the Kenya CTI should have going forward. Respect, equality, and openness should all be prioritized and

individuals who take advantage of others should be held to account. Discriminatory investment practices should not be tolerated. But interestingly, the most important point she makes is one that Wenger would welcome: That the Kenyan CTI needs to have "tough conversations", speaking plainly about the community's practices, in order to help the community evolve in a way that reflects that values of its members.

The challenges of counter-story telling

As the tendency for stories about investor abuse to linger in rumors demonstrates, it can be particularly difficult for counter-stories to be both heard and believed by the larger community. Unlike stories that reinforce dominant narratives, counter-stories by definition challenge them, clashing with the stories that the larger community expects to hear. As a result, they often require a higher burden of proof in order to be both heard and believed. In the case of Angani, a sufficient number of rumors about vulture capitalist had spread throughout the community before the Angani Saga that at least that sub-set of Kenya's tech community were readily prepared to believe it.

In fact, as research has shown, the burden on social movements storytellers can be even greater still. As Polletta has persuasively argued, the very format of storytelling may make it *more prone to reproducing dominants understandings*, even when used by marginalized or insurgent groups (Polletta, 1998, p. 420) than other discursive approaches. Stories depend, she has argued, on "a limited stock of possible story lines" that exist in any given particular cultural community. There is agreement among narrative theorists, she continues, that "stories not conforming to a cultural stock of plots typically are either not stories or are unintelligible" (Polletta, 1998, p. 424). In other words, those attempting to change the status quo are often forced to work within dominant conceptualizations of how stories should be structured and told and by whom in order to get their stories heard, restricting the kinds of stories they can tell. Sociologists Brett Smith and Andrew C. Sparkes have shown how this can happen on an individual level to devastating effect in their study of a rugby player who suffered a paralyzing spinal cord injury (2013). After the injury, he became connected to dominant cultural narratives about recovery from such an injury, narratives that depict a hero who may be ill currently, but who will recover "one day". Yet because of his body's physical inability to "recover", the rugby player eventually rejected this dominant narrative and instead adopted one of despair and hopelessness. But, as Smith and Sparkes write, "to despair, to lose hope, are frowned upon as strategies for dealing with disease and cancer" (Sparkes & Smith, 2013, p. 218), leading many, including the player's wife, to turn away from him, perpetuating his feeling of hopelessness. On a larger scale, Polletta's own work examining the invocations of the memory of Martin Luther King Jr. in the American Congress has shown how the telling of stories about Dr. King by Congressmen on special occasions had the unintended effect of serving to *reproduce* and *reinforce* existing power structures in the legislature through confining stories of Dr. King to the symbolic during special occasions instead of the substantive work done during other Congressional sessions. Paradoxically, Polletta write, "the commemoration of dissent reproduces a view of Congress's policy deliberations as substantive rather than symbolic, since the symbolic work of commemoration takes place, and only takes place, on occasions reserved for it" (Polletta, 2009, p. 438). While many of the Congressmen had intended to invoke Dr. King as a way of being subversive and drawing attention to how unfinished his fight was, in the end their storytelling helped to sustain the dominant institution rather than subvert it.

Because of such pressures, social movement storytellers are often forced to find alternative methods of telling and disseminating their stories, like the case of the rumors discussed above. Such methods include adopting alternative storytelling platforms – like off-the-record discussions, protests, anonymous pamphlets or even social media – or alternative storytelling genres with alternative storytelling norms – like humor, science fiction, or fantasy. It

is little wonder that stories of vulture capitalists in Kenya started as rumors among friends or trusted allies and not as newspaper articles or public speeches. They were not stories that members of Kenya's CTI, so hopeful about the prospect of being the 'tech hub of Africa', or about the potential for growth, had previously been ready to hear. While many of these techniques have been employed in Kenya to tell counter-stories, I will focus on two that I found to be central to the work of building counter-narratives about who and what practices belong in Kenya's CTI: humor and social media.

Humor

There is a small but important body of literature about the role humor can play in affecting social change. Researchers have shown, for example, how humor has been used in political movements in Norway (Johansen, 1991), or to bring down authoritarian leaders like Slobodan Milosevic (Sorensen, 2008) or even as coping mechanism while imprisoned (Henman, 2001). It can be used to strengthen movements and enhance the sense of collective identity of its members or to encourage new members to join (Kutz-Flamenbaum, 2014). As Bernal has demonstrate in the case of Eritrean dissidents, humor can be a useful tool for minorities or those in less powerful positions because it "allows for an oblique engagement with power rather than a directly confrontational one and so is well suited as a 'weapon of the weak'" (Bernal, 2013, p. 306).

Kenyans have deployed humor frequently in their own political commentary, often drawing attention to the hypocrisy of their political leaders or the international community. The famed Tanzanian political cartoonist, Godfrey Mwampembwa, known as 'Gado', and known for his poignant and biting cartoons in Kenya, is a good example. Take a cartoon he published immediately after the March 2013 election in which Uhuru Kenyatta was elected president with his running mate William Ruto, both of whom were being tried for war crimes related to the post-election violence in 2008 (Mwampembwa, 2013). In it, he depicts Kenyatta and Ruto jovially playing football with ball chains labeled 'ICC' attached to their ankles, showing both their disregard for the international organization and the international organization's inability to hold them to account. Gado himself has been involved in other forms of humorous political commentary, including a satirical puppet show called "The XYZ Show" that uses puppets to ridicule the political establishment (BuniMedia, 2018). Similarly, another show, a 'mockmentary' ridiculing the NGO sector in Kenya, called "The Samaritans" raised money initially from a Kickstarter campaign to fund its programming depicting an ineffective NGO called "Aid for Aid" with an inept British leader (Xeinium Productions Limited, 2018). This proclivity for humor as political commentary has also become common among Kenyan commentators online. Take Ory Okolloh, a well-known blogger and activist and prolific tweeter, who has frequently criticized President Kenyatta through sarcastic Tweets mocking his decisions like: "selfies with students @ state house is cool. Working to find ways to resolve current crisis affecting students is not cool" or "sugar bailout is costly but necessary. Paying teachers is costly but apparently not necessary."

Humor is a particularly good tool for highlighting this kind of hypocrisy because, as Bernal explains, it operates by juxtaposing contradictory situations or statements or by exaggerating an original statement or proposition to reveal its absurdity" (Bernal, 2013, p. 304). In fact, one of the most prominent theories about humor, incongruity theory, emphasizes humor's ability to draw attention to *difference*. It is this that makes humor a particularly good tool for drawing attention to hype or to the gap between a story and reality. Parody and sarcasm are particularly effective genres of humor for this, genres that comedic political commentators, like Gado, have been very effective at deploying. Take for example a classic segment from an American political satire show called the Daily Show, hosted at the time by Jon Stewart, in which he draws attention to the absurd complexity of the American electoral process, branding it 'Indecision 2000'. Or another of Gado's cartoons where he depicts recently reelected President Uhuru Kenyatta walking along a red carpet accompanied by a vulture and a pig dressed in a suit,

proclaiming "Gentlemen, you did well with the elections, now let's print money…!" (Mwampembwa, 2018)

As these two examples may already make clear, a joke's ability to truly resonate relies on the identities and cultural situated-ness of both the audience and the teller. If the audience is not embedded in the cultural context that the joke references, it is likely to fall flat. In these two cases, at least a passing knowledge of the problems with the countries' respective elections is necessary in order to 'get' the joke. As humor scholar, Kutz-Flamenbaum wrote, "humor is a cultural product that relies upon shared norms and ideas. In order for a joke to make sense it needs to reference recognizable cultural symbols and ideas that are shared by both the joker and the audience" (Kutz-Flamenbaum, 2014, p. 296). Similarly, the jokes may have been interpreted differently had the identity of the tellers been changed. Had Gado's cartoon been created by a white foreigner, for example, it might have been interpreted as racist or stereotyping of Africans as corrupt. As Ridanpaa has written, "who the teller and the audience of a joke is can determine whether it acts as a tool for sustaining oppression or resisting it. Jokes told by the powerful, relying on stereotypes, for example, of minority groups can serve to sustain the status quo and legitimize the oppression of a minority group" (Ridanpää, 2014, p. 704).

Most importantly for our purposes here, humor is not only a tool to chip away at the legitimacy of a leader, but also at the legitimacy of dominant narratives, in particular through the *juxtaposition of reality with perceived inaccuracies in the narrative*. Humor, and in particular parody, can work as "narrative tools through which prevailing regional stereotypes and insulting preconceptions directed at ethnic minorities can be contested and rewritten" (Ridanpää, 2014, p. 704). Take a recent example: After the current American president, Donald Trump, was heard referring to African nations as "shithole countries" in early 2018, a group in Namibia produced a parody of a Namibian tourism video imploring viewers to "come to shithole Namibia. One of the best shithole countries out there" (Gondwana Collection Namibia, 2018). The video was a clear critique of the ignorance of prevailing negative narratives about Africa and of Donald Trump's own ignorance. Humor's ability to highlight the ridiculousness of inaccurate narratives by juxtaposing them against known reality also makes it an excellent tool for drawing attention to *hype*.

Like their counterparts critiquing the political establishment, Kenyans seeking to critique dominant practices around tech innovation have frequently used humor to make points that they might not otherwise have been able to make directly. Take even some of the examples given earlier in this chapter. When Evelyn referred to hackathons sarcastically as "cooking up ideas from out asses" or when Vincent referred to programmers in coworking spaces as "hot-desking battery chickens", both were using humor to articulate criticism about dominant practices in Kenya's technology sector, to point to how different the reality of the practice was from how that practices was generally portrayed.

Over the course of my fieldwork, I found humor to be a frequent tool of those, like Evelyn and Vincent, who were frustrated with the status quo or of those seeking to highlight the absurdity of dominant narratives. A particularly prominent example of the latter is the use of humor to highlight the inaccuracies of the dominant narratives about Africa and African, particularly with respect to their engagement with technology. Like the video proclaiming "come to shithole Namibia", humor has been used by those seeking to show how different the reality in Africa is from the way it has been represented. A classic example of this is the short piece written by Kenyan scholar Binyavanga Wainaina entitled "How to Write about Africa" advising prospective authors to, among other things, "never have a picture of a well-adjusted African on the cover of your book, or in it, unless that African has won a Nobel Prize," and to include in your description "The Starving African, who wanders the refugee camp nearly naked, and waits for the benevolence of the West" (B. Wainaina, 2012). In recent years, a few Kenyans have, in their blog posts, adopted Wainaina's sarcastic style to critique the narrow characterizations some have used when writing about the technology innovation is being practiced across Africa. Take

for example, a 2015 post on Medium called "On Writing about Tech in Africa", from Nanjira Sambuli, who describes herself as a "Technologist. Curious observer. Thinker. Worker bee. Kenyan"(Sambuli, 2018). Addressing herself to an audience that consumers news about technology innovation in Africa, she asks: "Read an article (on international media) lately about some tech startup or innovation in Africa? Have the words 'disrupt', 'revolutionise', or phrases like 'the next big thing' appeared? Have you found yourself believing there's a 'tech revolution' across the continent (country) of Africa?" (Sambuli, 2015). Unlike, Wainaina, some way into the post she adopts a more serious more direct tone.

> "All that aside," she writes, "my contention really is with the tech determinism that is created in framing a nascent endeavor as 'the next big thing(s)'. …Forward thinking is always welcome, but creating a false determinism, especially given the oft missing context of operational environments is, in my opinion, tainting the outlook on tech in Africa, by Africa, for Africa." (Sambuli, 2015)

After having used the humor at the beginning of the piece to highlight the absurdity of using Silicon Valley jargon like revolutionize and disrupt to talk about very early stage endeavors, she switches to the real point she wants to make – the real counter-narrative she hopes to build – about how overblown the dominant Africa Rising media narrative has become.

In 2016, another blogger and former employee of the iHub that I came to know very well, who writes goes by Ahntify online, wrote a similar piece entitled "How to Write about Tech in Kenya…and Africa" (ahntify, 2016), that was published on the iHub's blog, and that pokes fun at the overuse of the term 'Silicon Savannah,' the obsession with mobile phones, and representations of their use with a Maasai herding his cows while "hold up a phone in an attempt to access that ever elusive signal," and the infatuation with "hubs" like the iHub that should be the Western journalist's "first port of call after leaving the airport" (ahntify, 2016). A few months later, a Kenyan entrepreneur, Wiza Jalakasi, wrote a lengthier blog post about what his typical day as a technology entrepreneur in Nairobi was like. While most of the content was a serious representation of his life he titled it "Life Suck in Africa…my typical day in tech on the dark continent" pointing to the discrepancy between his life and the African life more often depicted in foreign coverage of the continent.

Each of these authors employed humor as a way in which to approach their chosen topic obliquely (Bernal, 2013), in order to avoid coming across as too confrontational. Through doing so, they were able to tell counter-stories drawing attention to the ridiculousness of the ways in which technology and its production have been characterized on the continent.

Social media

Historically, another method of getting a critique out there for those in more marginalized positions has been using alternative media or alternative dissemination platforms, like the internet. Where a dominant discourse is seen to be controlling mainstream media, social movements have long turned to alternative publications. In the United States for example, many strands of political thought that deviated from the norm have historically found homes in the alternative printed magazines like *The Nation* and *Mother Jones*. In more recent years, the internet has taken precedence as the dissident's medium of choice, allowing what many academics have described as a more democratized space for political discourse, giving platforms to those who previously struggled to be heard (Dahlberg, 2001; Loader & Mercea, 2011; M. Poster, 1997). In the last 10 years, academic excitement about this revolutionary power of the internet led to a plethora of research around the role of the internet, and social media in particular, in bringing about revolutions under authoritarian regimes, most notably around the Arab Spring (Heeks & Seo-Zindy, 2013; Tarrow, 2011; Tufekci & Wilson, 2012). But subsequent less

celebratory research began to question whether new media had really been the revolutionary linchpin that it was lauded as and instead argued that it merely enhanced what social movements were already doing in the 'real world' (Brunner, 2014). Even with this more modest view of the power of the internet, few question its role in disseminating dissenting stories and connecting those with dissenting opinions, be they neo-Nazis in the American Alt-Right (Elliott, 2018; Jakubowicz et al., 2017) or student protesters in South Africa's #FeesMustFall movement (Luescher, Loader, & Mugume, 2017) or broader national-level categories like Kenyans on Twitter (#KOT).

In the particular case of Kenya, researchers have found the internet to be an alternative site for the production of popular culture in Kenya (Ligaga, 2012) and for the expression of alternative political viewpoints (Tully & Ekdale, 2014). As the Kenyan literary scholar, Dina Ligaga, has explained, this came about because of how dominated Kenya's most influential mainstream media outlets have historically been by those in power. She writes:

> Public information was always controlled by those in whose interest it was to remain in the good books of the state. The state, for its part, depended on mainstream media to build its identity and kept a close watch on various activities. This arrangement quite obviously meant that the ordinary Kenyan was heavily policed and that anything that was deemed subversive or that had the potential to undermine the nation-state would be edited out of public discourse. (Ligaga 2012, p. 3-4)

As a result, the adoption of the internet by Kenyans "destabilized the information infrastructure that had been built around the nationstate" (Ligaga 2012, p. 4) and "provided space for politicians to be critiqued, ridiculed, and dismissed in a way not previously possible" (Ligaga 2012, p. 6-7).

Social media, and Twitter especially, have played an important role in the dissemination of alternative views in Kenya. In the early days, to distinguish themselves from other Twitter users across the globe the hashtag, #KOT (and its longer predecessor, #KenyansonTwitter) became popular connecting Kenyans and discussions about Kenya. Kenyans were such prolific tweeters that by 2013 they reportedly produced the third largest volume of geo-located tweets in all of Africa behind only South Africa and Egypt (Portland Communications, 2014), despite having a smaller population than both. And while Nigeria, with its population more than triple the size of Kenya, has overtaken both Kenya and South Africa (Portland Communications, 2016) on that list, Kenyan remain vociferous Tweeters. For example, Winnie, the blogger and activist from earlier, clocked over 13,000 tweets posted in 2015 alone.[16] Specific hashtags, often far narrower than #KOT, have become "spaces for Kenyans to express themselves politically, exchange alternative viewpoints, and share humorous takes on contemporary issues" (Tully & Ekdale, 2014, p. 70). Tully and Ekdales for example, found that specific hashtags like #SickAt50 and #MPigs were used as ways to voice critique of Kenyan politicans and the state of the nation while others like #SomeoneTellCNN and #TweetLikeaForeignJournalist were used to question and ridicule the inaccuracies in dominant foreign narratives and media representations of Kenya(Tully & Ekdale, 2014).

For members of Kenya's community of technology innovators seeking to challenge the dominant practices, the internet and social media may seem like a natural choice. And in many ways, it was. In fact, the birth of Kenya's modern CTI itself can be linked to this proclivity to use the internet to provide a space for alternative voices. The now iconic Kenyan platform Ushahidi (tellingly meaning 'testimony' in Kiswahili), for example, was created, as the organization states

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[16] Working with a quantitative colleague of mine at Annenberg, we scraped all of her tweets, including retweets, over the course of 2015.

on its website, to help people "raise their voices" during the post-election violence of 2008 and to "map reports of violence" that were otherwise being overlooked (Ushahidi, 2018a). Continuing to market its crowdmapping platform, Ushahidi's current tagline is "Read the Crowd. Don't just get the data. Get the whole story" (Ushahidi, 2018b). Similarly, Ma3Route, the startup Stephane represented in the beginning of this chapter, crowdsources its information about the condition of Nairobi's roads and the traffic in it not just on its app, but on Twitter. Many of the original founders of the iHub also got their start as bloggers, like Eric Hersman (who blogged as "WhiteAfrican") and Ory Okolloh (who blogged as "KenyanPundit"), disseminating views online that were often controversial by mainstream Kenyan media standards (as I will show in greater detail in Chapter 5).

Connections through social media and other internet-based groups were also instrumental in getting some of Kenya's earliest techies together. As one of the iHub's former CEO's, Josiah Mugambi has written, "the now burgeoning tech community in Kenya started in the late 1990s and early 2000s with the beginning of the Kenya Linux User Group. …Communication was frequent however, on a mailing list, with regular physical meetings augmenting the online interactions" (Mugambi, 2016). That group later grew into another virtual group called Skunkworks, which, again, circulated information and communication primarily through a very active mailing list and blogging platform, supplemented by in-person meetings.

Yet the central role of the internet and social media platforms in the formation of Kenya's community of technology innovators, poses a problem for those seeking to critique or challenge its received practices. Unlike in Kenyan national politics, the internet is a *primary* medium of communication for Kenya's CTI, not an 'alternative' one. In many ways, in addition to the in-person interactions in and around places like the iHub, it comprises the central medium of the Kenyan CTI's communicative ecology. And many of those using the internet to critique Kenyan political figures from the margins, are themselves mainstream figures in Kenya's technology scene.

Even so, I found many of those attempting to challenge the received practices in Kenya's CTI telling their counter-stories via blogging platforms and Twitter. For example, around 2015-2016, a Twitter conversation began to develop around an emergent hashtag, #BlackFoundersMatter, in an attempt to draw attention to the large number of foreign startup founders in Kenya's CTI. Like many of the most globally influential hashtags associated with social movements (e.g. #BringBackOurGirls, #SomeoneTellCNN, #BlackLivesMatter), #BlackFoundersMatter has the structure of a story, presenting the movement's argument within the hashtag itself in the form of a sentence (Yang, 2016) Following the #BlackFoundersMatter hashtag, as Yang demonstrated in the case of #BlackLivesMatter, the tweets employing it unfold temporally.

Often the conversations on Twitter that challenged the received practices in Kenya's CTI, grew through their interaction with related blog posts or off-line events. In the case of the Angani Saga, #Angani was used, predominantly by tweeters coming down on the side of the Kenyan entrepreneurs, as part of the movement to call out vulture capitalism. Many Twitterers used the hashtag not only to voice support for the founders they believed to have been maligned, but also to draw attention to related content from blog posts and the 'real world' that were often used as *evidence* of the posters argument. For example, one post from December 2015, just a month after the controversy began, included a photo of Mbwana Alliy, a Kenyan investor who was the founder and managing partner of one of the firms that invested in Angani. The photo and the accompanying caption imply that he was at an event where the Twitterer asked him difficult questions about the events. The caption reads "We've just put him on the spot regarding #Angani and other startup governance matters". Another post from May 2016, six months after the events, includes a photograph of a document as evidence. The document appears to be the agreement that was signed between the Angani founders and the investors during a meeting in October 2015, which, the poster claims, is evidence that the investors had agreed to compensate the outgoing

investors for their shares in the company, but had yet to do so. On a Twitter, a medium that was frequently a central discursive platform of the Kenyan CTI, these Twitterers worked to connect their views to apparent real-world events in order to add evidence to the counter-narrative they were hoping to build about the misdeeds of the Angani founders, and to make the case that discriminatory treatment of Kenyan founders was more than just rumor.

This tactic of connecting tweets to blogs and other documents to provide evidence for the construction of counter-narratives was used again to a far more intense degree when a new controversy erupted in 2017 around the alleged sexual misconduct of the sitting director of one of the founding companies of Kenya's CTI, Ushahidi. On July 20, 2017, after the scandal had already become public, Angela Kabari, the woman accusing Ushahidi's executive director, Daudi Were, posted a lengthy and extremely detailed blog post on Medium, a blogging platform popular in Kenya, giving evidence for her side of the story. Most notably, in the post she provided a link to a Google document called "Detailed Chronology of Events" in which she listed all of the events that had taken place between her, Were, and Ushahidi's board, from the alleged misconduct in January 2017 to her submission of the complaint to the extended time that it took Ushahidi's board to respond. The document includes links to all of the complaints she'd submitted, email conversations she'd had with the board and with Were's legal representatives, her letter of resignation, the board's inquiry report into the incident, and links to all the blog posts and news articles that had been written about the subject. It is exhaustive. In many ways, I believe the almost obsessive way in which Kabari provided evidence for her claim throughout her blog post was a direct response to the concerns around 'hype' in Kenya's CTI and an intentional move to avoid any such accusations about her claims.

In the end, the scandal around one of the founding companies of Kenya's CTI made significant waves within the community and spurred on a movement to end discrimination and abusive behavior in the community. By early July of that year, rumors about the incident had begun to circulate through the exclusive WhatsApp group of prominent members of Kenya's TCI. Two days afterwards, Ory Okolloh a prominent figure in the Kenyan CTI and one of the founders of Ushahidi who had left the company in 2010, wrote her own blog post, titled "No Sacred Cows", rebuking the lethargic response Ushahidi's board had taken to Kabari's complaints. In it she also signaled 'real-world' events that were taking place in the community to have a public and purposeful conversations about sexual misconduct and to create a new code of conduct for organizations and individuals within Kenya's CTI (Okolloh, 2017). Around the same time, the story began to gain traction in mainstream Kenyan news and international tech news. By July 22, Daudi Were had been dismissed from his post at Ushahidi. Four days later, a group of women in Kenya's CTI posted their own blog post on Medium called "The road ahead in building the Kenyan tech ecosystem: Perspectives from #WomenInTechKE," celebrating Kabari and condemning Were. In the post, they invoked the events as a call to action to reevaluate what kind of CTI Kenyans wanted to have going forward. "We believe," they wrote, "that these events offer us all important lessons to carry forward as we continue to collectively work on realizing the visions, hopes and aspirations of a thriving, diverse and inclusive Kenyan technology ecosystem" (Women in Tech Kenya, 2017).

My purpose in telling this story it to show the ways in which social media platforms are being used in Kenya to bring about changes to the ways in which technology innovation there is being practiced. Individuals leading these movements are still using the platforms that are central mediums of communication to the CTI to disseminate their counter-stories, but by closely connecting online posts with real world events and evidence, they are taking steps to avoid accusations of hype that have plagued Kenya's CTI. And through the combination of online content and hashtags as well as off-line discussions and actions they are working to build counter-narratives about Kenyan innovation practices and to bring about change in how technology innovation is practiced in Kenya.

Conclusion

In Chapter 3, I showed how some Kenyan entrepreneurs faced unique challenges in their work to become legitimate technology innovators and to be seen and accepted as members of a globally engaged practice around innovation. In this chapter, I hope to have shown what some have chosen to do in the face of such challenges. Like Ma3Route at the beginning of the chapter, some have chosen to reject certain parts of the GCTI's repertoire of practices. In the case of Ma3Rotue it was choosing to focus on local needs regardless of the company's scalability. For others, it was rejecting the GCTI's material culture like open plan office spaces, or its communicative ecology, like the centrality of storytelling and its proclivity for hype. While for others it was working to build a local culture of investing in startups to reduce their reliance on international investors.

But the practice of technology innovation in Kenya is neither locally isolated nor exclusively global. Kenyan entrepreneurs are engaged in a locally situated community of technology innovators unique to Kenya while at the same time they are negotiating their role in the global one. And while some entrepreneurs struggled to gain attention and a sense of meaning in the global community, they often found they were better able to engage in what matters in the Kenyan community.

In 1998 Wenger wrote: "The kind of coherence that transforms mutual engagement into a community of practice requires work. The work of 'community maintenance' is thus an intrinsic part of any practice" (Wenger, 1998, p. 74). For Wenger, that work, that constant joint negotiation is a part of what makes up a community; participating in that process is part of what helps the community's members to feel like they belong. Moreover, it is part of what makes up the community and helps it to evolve over time in a way that is responsive to the needs and values of its members. In his publication with Lave, they explain this in more detail and I believe it is useful to quote from it at length here:

> We must not forget that communities of practice are engaged in the generative process of *producing their own future*. Because of the contradictory nature of collective social practice and because learning processes are part of the working out of these contradictions in practice, social reproduction implies the renewed construction of resolution to underlying conflicts. In this regard, it is important to note that reproduction cycles are productive as well. They leave a historical trace of artifacts—physical, linguistic, and symbolic—and of social structures, which constitute and reconstitute the practice over time. [Emphasis added] (Lave & Wenger, 1991, p.57)

In this way, negotiations that emerge around community conflicts, like the ones around Angani and Ushahidi, can be important moments to spur on the reconstruction of the community going forward in line with the important values that have become apparent around moments of conflict. I hope to have made a convincing case in this chapter that the Kenyan community of technology innovators is undergoing an important phase of this negotiation process, moving from a fear of speaking out and a reliance on rumor to disseminate counter-stories, to the adoption of humor and social media to build important counter-narratives about the unacceptability of sexual misconduct or discriminatory investment practices in the community's mutually agreed repertoire of practices. Moreover, as I will show in greater detail, many of these ongoing debates about the future of the GCTI revolve around how engaged it should or should not be with innovators abroad and how beholden it should be to the globally accepted practices even when they do not appear to take into account the values and experiences of Kenyan innovators. In the following and final chapter, I hope to bring together many of the arguments I have made over the course of this dissertation and show in a very detailed way how they've played out in the context of a single organization: the iHub.

CHAPTER 5: THE IHUB CASE STUDY

On March 3, 2010, the iHub opened in Nairobi. It was a large open plan space on the top floor of a commercial building called, the Bishop Magua Centre, situated just off the busy Ngong Rd. in a moderately affluent neighborhood of Nairobi known as Kilimani. Three large walls of windows surrounded by a terracotta balcony gave the space a serene view out over the green neighborhood, the taller buildings of the central business district barely visible. Overhead hung a vaulted ceiling painted glossy white, supported by three gleaming pillars of bright yellow. The remaining windowless wall was painted a deep navy and sported the company's logo printed in large white font: *iHub_. Aside from the large mass of people who'd come for the launch, the space was otherwise empty. Over the following months, a large hand painted mural depicting a map of the neighborhood would gradually cover a remaining wall, and the space would be filled with an elevated platform to host events, white tables and bright green chairs at which people could work, a small coffee nook and couches where they could socialize, and a foosball table and beanbag chairs where they could relax.

Over time, the Bishop Magua Centre became the home of a plethora of other technology companies and for many symbolized the home of Kenya's community of technology innovators. While, as I discussed in Chapter 4, virtual platforms of communication had played an instrumental role in shaping the growth of this national-level community, the physical space provided the meeting group for the face-to-face communications that continue to shape how even innovators in Silicon Valley still make deals and build companies (Saxenian, 2007). In a blog post that preceded the opening, Josiah Mugambi, one of the iHub's founding members, and its CEO for much of my fieldwork, wrote the following:

> Skunkworks [a community of Kenyan techies that preceded the iHub] was
> conceived with the idea of bringing together Nairobi (and Kenyan) techies
> and really kicked off in early 2007. From the onset, we had the idea of having
> a central location where guys could come in and utilize fast internet, access
> local servers to test out their applications while bouncing off ideas with each
> other. The goal was to create an environment where (hopefully) cool world
> class products could be developed and sustained. There are many great
> developers around but many complain about access to bandwidth and servers.
> In addition to this, many business people looking for software are sometimes
> at a loss when it comes to tracking down good developers. The iHub will be
> the place for all these people. (Mugambi, 2010)

This idea of "bringing together Nairobi (and Kenyan) techies" was for many the start of technology innovation practices in Nairobi that resembled those in the larger global community of practice. While techies and entrepreneurs had certainly existed in Kenya well before, as Mugambi's post makes clear, the opening of the iHub coincided with growing attention towards building for-profit startups around technological solutions to Kenyan problems. As a result, as I will show, the iHub itself is closely intertwined with that community, frequently emphasizing its commitment to it, and reflecting on how best to serve it. In the early years, the mutually engaged way in which the iHub and its members operated and influenced one another would have resonated with the scholars who originally introduced the community of practice framework, Lave and Wenger (1991). For Lave and Wenger a sense of shared meaning-making even amidst conflict and disagreement was integral to the functioning of a healthy community of practice. But as time passed, the growth of that community beyond and outside of the iHub and the Bishop Magua Centre created new pressures on that community engagement.

My intention for this chapter is to use the case study of the iHub to build on the work done in the preceding chapters and further problematize the mutually constitutive relationship

between communities of practice, their members, and their community narratives. In the first section, I will draw attention to the role that the iHub played in constructing narratives that positioned Kenya as the tech hub of Africa and the iHub as the home of it. In the second section, I will turn to look at the ways in which those narratives and new emergent counter-narratives about the iHub in turn shaped the iHub and the perception many in Kenya's growing Community of Technology Innovation (CTI) had of it. Finally, in the last section of the chapter, I will show how the iHub's response to these changes positioned it in opposition to those in Chapter 4 who were working to make Kenya's CTI more distinct from the GCTI and more reflective of Kenyan values and problems, and in favor of moving it towards a more Silicon Valley style of innovation.

The iHub 1.0: Building the Narratives

> When we started saying in 2010: 'Kenya's the, you know, tech innovation center of Africa,' was it true? Eh, arguably, probably not. But it became true, because enough people believed in it and built around it. And said okay, yeah, that can be true. (Interview with a founder of the iHub, May 2016)

In all the conversations I've had or blog posts I've read, the stories about what the iHub was at the beginning and *why* it was founded are surprisingly consistent and echo Mugambi's original post: The iHub was created to be a physical place where Kenyan techies could come together, share ideas, and collaborate. That there is consistency in this iHub origin story is no coincidence. Many of the iHub's founders are well-known for being skilled storytellers. Ory Okolloh, Erik Hersman, and Juliana Rotich, three of iHub's most prominent founding members had all previously come to a certain level of fame within Kenya's existing technology community as a result of their blogs,[17] where since at least 2005, they've written about topics ranging from climate change and organic farming to domestic and international politics and of course tech news. They reported from technology conferences and gatherings they'd attended, reviewed the latest startups to emerge, and commented on the coverage of African technologists in international media. All three had previously been involved in one way or another with the earlier success of Ushahidi, and all three were invited to become fellows at TED, each speaking at a TED conference in 2007, 2009, and 2013 respectively. They were no strangers to constructing an image through digital storytelling.

In the first few years of the iHub's existence, as I will show, its founders drew on these skills to construct the iHub on a discursive level by building two interconnected narratives around it: 1) That Kenya was becoming the tech hub of Africa, and 2) that the iHub was at the center of that hub. For any country outside of Silicon Valley, getting attention for being a center of innovation is a steep hill to climb. For a sub-Saharan African country burdened by generations of a Failed Continent Narrative, it can seem even more unrealistic. But in order to attract the new entrepreneurs and investors that they believed would be necessary to strengthen the existing technology community in Kenya, I will show how the founders of the iHub decided to adopt the role of the techno-visionary storyteller common in Silicon Valley in order to persuade both domestic and international audiences that Kenyans could be the heroes of their own home-grown stories of technology innovation, and to gain legitimacy for the iHub as a real member of the GCTI. They wanted not only to convince more established members of the GCTI that Kenyan innovators should be taken seriously, but also to show Kenyans themselves that they had the means and the potential. I will begin by showing how these two narratives evolved in the

[17] Ory Okolloh blogged as Kenyan Pundit, Erik Hersman blogged as White Africa, and Juliana Rotich blogged as Afromusing

international media, next I will outline the communications strategies that the iHub team used, including adopting the role of the techno-visionary storyteller, and then I will demonstrate how – as in the construction of the Anyone Anywhere Narrative – they attempted to use 'real world' examples and events to reinforce the media stories they told. Taken together, the communication strategy adopted by the iHub team embodies the storytelling practices at the core of the GCTI, embodying the quintessential techno-visionary who tells stories of a future that has not yet come to pass.

Media narratives

To begin, I want to give a sense of the narratives about technology innovation in Kenya that emerged over time as they presented in the international media. In order to do that, I conducted archival searches of the coverage related to technology innovation in Kenya in 19 major international media outlets,[18] including *Forbes*, BBC and *The New York Times*. In them, I found 103 articles published on the subject between 2010 and 2017. While the audience that mattered for the iHub was both domestic and international, for simplicity sake I have chosen to focus here on just the international coverage. Similar stories were written in domestic Kenyan news outlets like The Daily Nation and The Standard, but they were largely only read by Kenyan audiences, while both Kenyan and international audiences read many of the international news outlets included in my search.

The first thing that emerges from the media coverage is an increase – at first gradual, and then more dramatic – in stories about technology innovation in Kenya, following the successes of the mobile payment platform, M-Pesa (launched in 2007), the crowd-mapping non-profit, Ushahidi (launched in 2008), and the opening of the iHub in 2010. While I found just 3 articles related to technology innovation in Kenya in 2010 and 5 in 2011, that number spiked to 15 and 22 in 2012 and 2013 respectively. Looking more closely at the example of just one publication – *The Guardian* – before the launch of the iHub, I found just 7 articles in total related to technology innovation in Kenya between 2002 and February 2010, while I found that number in 2015 alone. Of the articles published before the opening of the iHub, the majority (6) were about broader trends around people using or building some kind of technology in Africa, in which Kenya was invoked only as one of many examples. The remaining article was a profile of M-Pesa and how it had grown in Kenya. Intriguingly, of the seven Guardian articles published even before the opening of the iHub, Erik Hersman, a white Kenyan who become one of the founders of the iHub, was referenced as a key source in two, talking in one about how important the underwater fiber optic cables would be for mobile development in Africa, and in another his technology news website, AfriGadget is cited as the "best place" to start looking into "Africa's do-it-yourself development culture". None of the 7 referred to Kenya as any kind of "technology hub" (K. Anderson, 2009).

In fact, in all the articles I collected from all 19 sources, the first ever instance I found of Kenya being described as any kind of hub or center of technology innovation was actually in a quote from Erik Hersman himself. In a December 2010 article in the BBC about a larger and older Kenyan technology company called Craft Silicon, Hersman was quoted saying the following: "We are getting to the point now, that if you want to be involved in tech in East Africa then you have to come to Nairobi" (Fildes, 2010). While I cannot say that this instance was the first in *any* media outlet to describe Nairobi this way, there was a notable increase in such references in the years that followed, beginning particularly in 2012. In June 2012, *The Sunday*

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[18] I looked at only major international news, and limited my search to these few: Tech Crunch, Financial Times, Sunday Times, the Guardian, NPR, Newsweek, New York Times, Mashable Entrepreneur, Inc, Bloomberg, Forbes, 60 minutes, Quartz, Christian Science Monitor, The Observer, Washington Post, BBC, & CNN

Times (UK) (Victoria, 2013) described Africa as "the fastest growing technology market in the world" and Kenya as "reaping the lion's share of the boom"; in October 2012 *The Guardian* declared that "if there is such a thing as an African version of California's Silicon Valley, the country that is arguably leading the race to the future is Kenya" (D. Smith, 2012); and in December 2012, NPR (US) aired a show describing Nairobi as "a growing tech hub for the African continent" (Warner, 2012). Starting in 2013, Nairobi even began to appear on lists of rising startup hubs around the world to watch in news outlets like *Entrepreneur* (Pullen, 2013), *Mashable* (Munford, 2013b), and CNN (Shadbolt, 2014). And while some of these lists focused on startup hubs in emerging markets, in others, Nairobi made the list as the sole African city alongside GCTI heavyweights like Berlin and Tel Aviv. And of all the 103 articles I collected pertaining to technology innovation in Kenya from 2010 to 2017, all but six characterized the situation favorably. They described Nairobi's startup scene as "on the rise" "improving" and "worth paying attention to" and Kenyan startups as worthy of praise or at least a closer look by investors. A narrative was beginning to emerge in which the city previously known as 'Nairobery' was becoming known instead as the 'Silicon Savannah'.

Along with this came an increase in coverage about the iHub itself. Of the 74 articles in my search about technology innovation in Kenya that were published between 2010 and 2015, 59 of them, or almost 80%, mentioned the iHub. Two years after its launch there was a notable spike in the number of articles in my 19 sources that referenced the iHub, rising from 2 each in 2010 and 2011 to 14 in 2012 and 19 in 2013. In articles like those cited above that celebrated Nairobi as a startup hub, I found that the iHub was frequently cited as an example of why. For example, the 2012 Guardian article above, described the iHub somewhat modestly as "a part of Kenya's booming tech industry" (D. Smith, 2012), while the NPR broadcast that same year described members of the iHub as "trying to rethink geek culture" (Warner, 2012). Other articles characterized it as no less than "Kenya's unofficial tech headquarters" (Munford, 2013a) and a "model for innovation hubs in Africa" (Sengeh, 2013) that was being replicated in "places like Nigeria and Ghana" (Bright, 2013).

The iHub's founders or managers, particularly Erik Hersman, were themselves very visible in this coverage. In the 59 articles that mentioned the iHub between 2010 and 2015, 34 (57%) included citations from either Hersman or other leaders of the iHub like Mugambi, Rotich, or Colaço, They were shown giving tours of the space (Africa Business Report, 2010), modestly brushing aside questions about being one of the "people helping to shape a new image of Africa" (Carnwath, 2012), showing off new projects they were working on (Chonghaile, 2012) or talking about how good African "problems" are for inspiring innovation (Burg, 2014).

Hersman alone was cited in 22 articles. He appears so frequently in international media coverage about technology innovation in Kenya (first in connection to his blog, then Ushahidi, then the iHub, and a range of other organizations in which he was involved) that one would be forgiven for thinking that he was in some way leading it. *The Observer*, for example, described Hersman in a September 2013 article as "one of the most effective evangelists for the technological future of his adopted country". He even guest authored a July 2012 post for the BBC titled "From Kenya to Madagascar: The African tech-hub boom". Furthermore, Hersman's identity as a white man with American citizenship who sounded American but had grew up to American missionary parents in Kenya and Sudan meant that he fit in with the dominant Identity Narrative of the GCTI, making him the kind of storyteller that the GCTI was accustomed to listening to.

In his July 2012 article for the BBC he described how as founders of the iHub they "sit at the center of Kenya's technology community, where our role is to serve as a connection point and support the phenomenal hi-tech growth in the country". Such stories about "phenomenal hi-tech growth" in Kenya and about the organization at the heart of Kenya's "technology community" are typical of his and other iHub leaders' appearances in international media. In fact, across their wide array of media appearances, the stories they told were remarkably consistent: a locally-

generated technological boom in Nairobi, and a small community center at the heart of it. The repetition of such stories combined with Hersman's hybrid identity helped to build two interlocking narratives that foreign members of the GCTI might actually pay attention to. The frequent appearance of iHubbers in the international media and the consistency of their stories similarly help to reveal a purposeful involvement in the process of constructing those narratives.

Strategies

Communication strategies

> So you wanna know why the iHub is so well-known and so big? It's because we're good at communication. We had no skillset beyond that to use. That's what we were good at. And that's what built Ushahidi; that's what built the iHub – our ability to communicate. …We were bloggers. We knew how to talk. That's all. We knew how to communicate with people. Whether it's on stage, whether it's in writing, whether it's in proposals. If you can communicate you can raise money. If you can communicate you can get people excited about things, and you can lead teams and you can, you know, build partnerships. All those things. (Interview with a founder of the iHub, May 2016)

This is an excerpt from an interview I conducted with one of the iHub founders in 2016. It and many other conversations I had during my fieldwork indicate a keen awareness of the role that the iHub was playing in narrative construction around the iHub and Kenya. As this founder tells it, they drew on their existing skillset of communication and storytelling to draw others into the iHub, be they prospective funders, prospective members, or those eager to replicate the iHub's success. In many ways, the media presence – that exciting and sometimes blinding spotlight – has been ever present at the iHub. As one foreign investor said to me, "when I first got here, you couldn't go 50 yards without hitting a cameraman". While that was likely hyperbolic, even three years after the founding when I first arrived at the iHub, visitors interviewing the iHub's staff, members, and entrepreneurs, going on tours, recording events, or photographing "techies" were all regular, if not daily occurrences. In addition to engaging directly with the international media as we saw above, the iHub team adopted a number of other communication strategies that brought the iHub and Kenya directly in the spotlight, including personal blogging, Tweeting, developing the iHub's own blog and official online content.

Many of the founding members continued to blog after the opening of the iHub. During the launch, many involved blogged frequently – about the community meetings and conferences that had inspired the iHub, about the construction process for the community space, and about the launch party itself. After the launch, they continued to write, this time about media appearances they'd done, the TED talks they'd given, the BBC articles they'd written. They wrote advice columns from their visits abroad ("you can either be an afro-pessimist or afro-optimist. Either way you'd better be hustling" [Rotich, 2012b]) and retrospectives about "what the iHub has done" (Hersman, 2013) (an exhaustive and exhausting list of all the events they held, entrepreneurs that met their cofounders and new iHub initiatives during the first three years). They even wrote expressly about narratives and the hype cycles around new technological products (Rotich, 2012a).

They also went to work developing the iHub's own blog, with board members, management, and staff all writing posts about events they'd hosted or a new partnership with IBM or a training they were running, or spotlighting an up-and-coming entrepreneur. After the iHub's launch party, for example, countless photographs went up on the iHub blog along with links to at least four other local bloggers who had covered the event. The iHub team put so much time into the company's blog that in three separate years they received the award for "best

corporate blog" at the prestigious Bloggers Association of Kenya awards (2014, 2016, & 2017). This was supplemented by the organization's YouTube page. Their earliest YouTube video featured the iHub's founders and members explaining what the iHub was and constructing the space, including footage of people installing internet cables, building the coffee shop, and painting the mural that adorns the wall. Later, along with the regular newsletters that went out to all of the iHub's members, the YouTube channel became a key platform for disseminating videos of anniversary celebrations, interviews with successful entrepreneurs, and 'fireside chats' with guest speakers who came to visit the iHub, including, within the first year, Marissa Meyer, Vint Cerf, and Bob Collymore. The years after the launch of the iHub also coincided with an increase in activity by Kenyans on Twitter, a platform that the iHub Board Members like Ory Okolloh took to with ease, and the iHub staff members checked and updated daily both for the iHub's official account and for their own personal ones.

Physical space

As I tried to show in some of the previous chapters, persuading audiences to buy into new narratives takes more than storytelling, no matter how widely dispersed online; if it is not echoed in reality, the strength of the narrative can wane. In additional to the online communication techniques described above, practice in and around the iHub evolved – sometimes led purposefully by the iHub, sometimes organically by others – to embody the stories the iHubbers had been telling. First and foremost, among those practices was the relationship to the physical space.

Providing a physical space for people interested in technology in Kenya to congregate, was, as most iHubbers tell it, the original purpose of the iHub – an "Open Space for technologists, investors, tech companies and hackers in Nairobi", as their original website says. In my discussions, iHubbers frequently talked about how important it had been for them to have a physical space where people could meet in person. One of the managers I interviewed in 2016, for example, spoke passionately about his views of the importance of in-person interaction. "In order to have a thriving community," he argued, "you need to have both offline and online engagement." Another explained that while they could "always get connected to each other online through email, Whatsap, Facebook or whatever…you need physical spaces to find each other in person too." Musing a bit on why this might be, he added "I think that's maybe even more important in places like Kenya where trust is built on face-to-face connections. That's really why we built the iHub." For the iHub, in-person interactions helped to build a sense of community locally among Kenya's pre-existing community of techies, and also served to reinforce the media narratives they had constructed internationally.

Having a physical space meant that members could not only meet peers and future colleagues, but they could also attend the many events that the iHub held in its space. In the first year alone, organized events in the iHub space included a "creatives meetup" where artists could come and collaborate with techies, a Microsoft 'Open Door' event, where members could hear about Microsoft's latest technology, a legal session on the importance of confidentiality agreements and the role of IP law for startups, and weekly meetups for mobile developers. Through such frequently held events, initial members of the iHub got exposure not just to programming techniques and legal advice, but to the whole world of the GCTI face to face. With speakers like Marissa Meyer, then with Google, who came in 2011, followed in later years by Joi Ito, the Director of MIT's Media Lab (2014); Renaud Visage, CTO and co-founder of Eventbrite (2014); and John Scully, who served for a time as the controversial CEO of Apple (2015); the iHub members got face to face exposure to the members of the GCTI and heard them speak about their work. As I showed in Chapter 2, this kind of in-person connection and storytelling plays a part in enhancing the sense of community for transnationally dispersed communities.

Moreover, providing access to the space for free meant that anyone with the means to get to the Bishop Magua Centre could conceivably come in and use the space, thereby increasing its exposure to a local audience. It meant that anyone with an email account could join their mailing list, and that anyone could come to the events they held. Over my time at the iHub, I spoke to many members who said emphatically that they would not have been able to come if the space had not been free.

Having a physical *freely accessible* space also made it a natural landing ground for international journalists looking for new companies to write about. Quickly, as one founder recounted to me, it was "easy to become best friends with all the BBC and *The Guardian* and CNN and *Time* when you run the iHub. You're the biggest target to hit." It also made it a natural landing spot for other international actors who were curious about what was going on in the technology world in Kenya. Of all the foreigners, I interacted with in Kenya's tech sector over the course of my fieldwork, everyone talked about stopping by the iHub – at least initially – to "see what all the fuss was about", as one investor explained. "Like it or not," as one of the iHub's founders said, "the iHub is where people come. So, if you want to connect to people in the market, investors, media, you'll end up coming to the iHub at some point."

As time went on, the iHub and companies affiliated with it began to expand into more of the Bishop Magua building. In addition to the main community space on the 4th floor, the Ushahidi office was located on the 1st floor and the iHub soon opened a staff office on the 2nd floor. Later, the m:lab, an offshoot of the iHub that was to operate like a more structured incubator, opened on the 3rd floor. Later still, Hersman's new hardware company BRCK opened on the 1st floor and a hardware coworking space linked to the iHub, Gearbox, opened on the 2nd floor. The building also quickly attracted others. Soon after the iHub opened, another coworking space, Nailab, opened, just across the hall, while a few floors down many other technology companies that wanted to be near the traffic at the iHub opened shop as well, from GSMA to Frontline SMS or Akirachix. As startups that began in the iHub coworking space began to grow, like M-Farm and Kopo Kopo, they eventually opened their own offices in the building too. During my interactions with other building tenants, I was frequently told directly that they had opened their office there because they wanted to be near the iHub. At the time of my first visit in 2013 there were at least 16 different companies somehow related to Kenya technology sector that had opened in the Bishop Magua Building. This enhanced the iHub's media narrative about being at the *center* of Kenya's technology community. The iHub became so closely associated with the center of Kenya's CTI and the Bishop Magua building in particular, that people frequently referred to the building as a whole as the iHub. During my stay, for example, I saw multiple tweets posted during events in other offices in the building that were tagged as being "at the iHub". And in countless conversations I had in Nairobi outside of the tech community I found myself repeatedly clarifying that, in fact, no the iHub is not actually the Bishop Magua building, and no Ushahidi and the iHub are not the exact same company, though, yes, they are related and share some of the same founders.

Different audiences

While emerging from a pre-existing locally-situated community of techies, the iHub also, through the narratives it constructed and the plethora of international visitors it attracted, operated at multiple levels and spoke to multiple diverse audiences, some representing the GCTI, others part of the growing community of technology innovators unique to Kenya. With such a wide reach, it is inevitable that the audiences the iHub was speaking to would interpret its messages differently. Being experienced communicators, the iHub team were often keenly aware of their audience diversity – Kenyan IT students who want to be entrepreneurs, regional governments interested to see whether the iHub model would be worth copying, international investors looking to see

whether Kenya was worth considering for investment, and so on, often tailoring some of their message to reflect particular audience interests.

Kenyan & regional audiences

For a Kenyan audience, for example, the goal for the iHub was to attract new members – to inspire Kenyans to become technology entrepreneurs and to persuade them that the iHub was the right place to pursue that goal. In those initial years, the iHub conveyed this in particular through an emphasis on stories about the importance of "community," – be it the immediate community of techies at the iHub, or the broader communities of Kenyan or African innovators – and a strategy of local and regional outreach reinforced with a practice.

Focus on community

The earliest iterations of the iHub's website, the one that describes it as "Open Space for technologists, investors, tech companies and hackers in Nairobi", also includes the byline: "iHub: technology, innovation, community". As much as technology innovation seemed to be at the core of what its founders were trying to do, so did the 'community' – supporting it, building it, listening to it. As the opening excerpt from Mugambi's early blog post may make clear, the original idea was to *support* the community, and to help it to grow and professionalize by providing a physical space. As another of the founding members explained to me in an interview, "That's what the iHub was built on, a group of people who were looking for the whole tech community in Nairobi to get better."

In fact, the 'community' seems to have been so integral to the iHub in those early years, that many claimed, in discussions I had with them, that the iHub would not have existed had there not already been a nascent technology community in Nairobi. As one entrepreneur who was around when the iHub was founded said to me, "Something like the iHub doesn't work if there's no existing community. You see that in many countries that have tried to copy it and failed. But here in Kenya, there was already a community, that's why the iHub worked initially".

When you speak with iHub founding members, they will readily acknowledge how important this early community was to the iHub's growth. For example, in a chapter he wrote for Ermacora and Bullivant's 2016 book on the importance of open source software around the globe, Mugambi describes in detail those early years of Nairobi's technology community and its role in shaping the iHub. In the 90s and early 2000s, he explains, well before the iHub opened, Kenya's technology enthusiasts – primarily, he says, people from the ISP industry and software companies – would share mailing lists, and gather for in-person meetings and small community-driven conferences on things like Linux and other kinds of open source software. It was not, he recalls, until one of these small conferences in 2008 that "the idea behind the iHub was first born". It would be a place where the interactions they'd been having "could take place, but on a continuous basis" (Mugambi, 2016).

iHubbers similarly talk about how important listening to the community was for the iHub's original mission. Take for example, this excerpt from an interview I conducted with another of the iHub's founding members in June 2016:

> We brought the community in from the beginning. Even at the very
> beginning, I was 1 of 5 people to vote on anything. There was an advisory
> board who are known people, who are trusted by other people in the
> community, who would be a proxy for big decisions. And they knew that
> there was a real voice there. And the thing is, we even brought in the
> community constantly – to help design and engineer and come up with new
> ways to do this and that. If you truly have a place that's community oriented,
> like the iHub has always been, and still is, and will be in the future, then

you're not gonna ever hurt for ideas. You're always going to be relevant and
be the right space for people.

Some of the practices the iHub engaged in also served to reinforce the importance of community. Frequent networking events, programming trainings, or regular discussion groups like the Entrepreneurs' Forum, Mobile Mondays, or Wireless Wednesdays, helped to reinforce to members that the iHub was an active buzzing community and that they belonged. iHubbers also frequently left the iHub space and ran events like the "Kids' Hacker Camp" or university campus visits to "inspire students to go into tech entrepreneurship", as one of the iHub's staff member told me.

This emphasis on community was also reiterated in the iHub's media messaging, particularly in blogs. Take this excerpt from a blog written by Erik Hersman for the iHub's blog to celebrate the organization's one year anniversary in 2011. "You helped us build and design the iHub layout, the logo and have defined it's use. Its success is due to how the community has owned it and made it what it is. In a large part, the team of Jessica, Tosh, Joshua and myself only served as foundation providers, where you built the house on top" (Hersman, 2011).

By grounding the organization in the local community, and drawing attention to it in their communication strategy, the iHub was setting itself apart from other organizations, like international NGOs and big international corporates in particular, that came in from the outside to help and didn't understand the context. iHubbers would often emphasize how connected they were to the community and how important that was for relevant innovation. Hersman, for example, often took particular pains to emphasize his and the organization's commitment to the community. In a 2013 video interview with Duarte, he explained the origins of the iHub in the following way. "So it's got a little bit of a history. First and foremost I'm the cofounder of Ushahidi and so we come from Kenya and I grew up in Kenya so that's home and we're a big part of that tech community" (Duarte, 2012). Hersman and others, particularly Rotich would often emphasize in the public appearances how important it was to be in Kenya and understand Kenya when designing technology for a Kenyan market, setting themselves apart even from Google and Facebook as an organization better able to make technology that understand local needs.

A Movement

A perhaps unintentional side effect of such a strong emphasis on the local community and its identity as a grassroots rather than a top-down entity was the iHub's eventual characterization as leading a kind of "movement". By 2016, some media coverage – domestic, regional and international – referred to the iHub or Kenya in this way. For example, the former permanent secretary of ICT, and a close ally of the iHub, Bitange Ndemo, wrote in his column in a major Kenyan publication, *The Nation,* that year that "the tech revolution in Kenya may have started well before the iHub was founded in 2010, but no other space in Kenya has embodied that *movement* so well" (Ndemo, 2016). Similarly, a Zimbabwean online publication, BDlive declared that "the origin of Africa's tech *movement*" could be "traced back to Kenya, which was home to several major technological innovations between 2007 and 2010." And even *Tech Crunch* published an article in which the iHub was described as having "helped spur Africa's tech incubator *movement*" (Bright, 2016).

While no one I spoke with at the iHub ever described using the language of a "movement" as part of their intentional communication strategy, they did acknowledge that what evolved around the iHub did feel like a movement. For example, one of the original members of the iHub explained it in this way in a discussion we had in December 2016:

Kamal [the CEO at the time of the interview] describes the iHub as a social
movement, which, actually when I think more about it, is quite accurate. That
is what it was. In fact, even before the iHub the social movement aspect was
there, a movement of people in technology who directly meet together and

hopefully create companies. …The iHub itself was a social movement, or at least it became an essential part of the last seven years of that movement.

To him, the iHub was in the center of a social movement supporting Kenyans designing their own technology and building their own companies around that.

Intentionally or not, some of the actions of those at the iHub further reinforced and even embodied its role as leading a kind of movement to grow technology production on the continent. In particular, the work they did to train others, in Kenya and in other African countries served this function. They would often travel to other places on the continent to help others in following iHub's model and setting up their own technology hubs. One of the iHub's Board Members, for example, told me about his own involvement with newer hubs in both Kenya and further afield:

> I spend a lot of time with the guys who started Lake Hub [a hub in Kisumu, Western Kenya] and Swahili Box [a hub in Mombasa, Coastal Kenya] and sit on their advisory boards of a lot of the guys across the continent, CCHub in Nigeria or BongoHive in Zambia who are doing the same thing…You can probably name 10 different hubs across the continent that we spent hours with on the phone or in person, or they visited us and stayed here for two weeks to figure out how to set up their own place.

Even in 2016, the iHub's staff members were still doing this kind of work, training Kenyan county-level governments or others in more remote regions with an aptitude for IT, in how to design an effective community space. iHubbers also often appeared on panels at major local, regional, and international conferences – like the local and regional Internet Governance Forum Conferences – positioning the organization as a sort of orator for the movement. For the broader GCTI, the iHub's role in helping to expand the growth of technology entrepreneurship on the continent also meant that the iHub was playing the important function of help the GCTI to expand even further.

International audience

For an international audience, the primary goal for the iHub was to build a reputation for Kenya and itself as a site worthy of investment or other kinds of funding, and draw attention to this amidst all the other noise and hype that populates GCTI media.

Providing physical access

As for Kenyan audiences, in person interactions were important for reinforcing media narratives to an international audience. Take for example the 2011 visit from Marissa Mayer. Her visit exposed her, albeit briefly and perhaps even superficially, to the on the ground activities at the iHub, adding depth and detail to the story she may have previously heard. Her presence, and the presence of others like her, may also have served as markers that the iHub and Kenya were important new sites of innovation for broader international audiences. Why would Marissa Mayer go to Kenya if there was nothing there? Why, in particular, would she go to the iHub, if it wasn't the best place in Nairobi to get a sense of the community? Such questions became louder as other high-profile figures came to visit Kenya and the iHub, like even Secretary General Ban Ki-Moon and Facebook Founder Mark Zuckerberg.

Early on, the iHub also adopted a culture of giving tours to anyone who came by and requested one, increasing the number of people who could say they'd seen the iHub. As one of the iHub's staff members told me in 2016, "back in the day everyone used to give tours. Two people would be assigned to work from the fourth floor (the main community space) for a week and would be responsible for giving tours that week. Even Erik did it back then." When I first arrived in 2013, I was similarly given a tour by the then community manager who showed me

around the iHub community space, as well as to their other offshoots of the iHub in the building, including Ushahidi, the m:lab and iHub Research's office. By the time I left at the end of 2016, that tour had extended to include BRCK and Gearbox. In my own time in the iHub, I have witnessed countless people on tours of the space, from members of the Gates Foundation or the World Bank to representatives of the Somali or Ugandan governments, even to Mark Zuckerberg. On more than one occasion I was even asked to give such tours myself to newcomers ("she knows her way around"). In fact, tours became such a frequent occurrence that the iHub staff members would often complain to me about feeling like "monkeys in a zoo" when the tours would stop by their office.

      Furthermore, such visitors could in turn go back to the US or wherever they had come from and retell the story about the iHub and the technology innovators they had met themselves. And many of the most high-profile visitors did just that. During Ki-Moon's visit to the iHub in 2014 he spoke on the record about how impressed he was with what he saw. "I am very happy to visit this Ushahidi/the iHub this morning," he said. "Today is my last day in Kenya. I wanted to come here and witness myself. I am feeling that I am seeing the future of Kenya, the future of many women, and the future of Africa." A year later, Obama came to Kenya to attend the Global Entrepreneurship Summit (held for the first time in an African country) and while he wasn't able to visit the iHub due to security concerns ("it's Obama," one iHubber explained to me, "If he'd come the whole of Kilimani would have shut down") he spoke at the Summit praising Kenya's leadership on the continent around technology. "Young people like you are harnessing technology to change the way Africa is doing business…and the country that's hosting us today is setting an important example – Kenya is leading the way". Another year after that, when Mark Zuckerberg came and toured the iHub, he posted to his personal Facebook page about how "inspiring" it had been "to see how engineers here are using mobile money to build businesses and help their community." By getting such significant international figureheads to visit and then speak publicly about the iHub and/or the growth of technology innovation in Kenya, they were able to add alternative, apparently more authoritative, storytellers reinforcing the narratives about the iHub and Kenya that the iHub itself had been constructing.

      Fitting into dominant narratives

      One reason I believe that stories about Kenya being a tech hub and about the iHub being at the center of it and at the head of a 'movement' took hold in the early twenty-tens is because they fit in with what people wanted to hear at the time. As narrative scholar Francesca Poletta has written, audiences have an easier time absorbing stories if they fit within an expected narrative framework (Polletta, 2009). This, she demonstrates, is true in terms of the content of a story as well as its format, its heroes and its storytellers. The creation of the iHub occurred at unique moment. In terms of narrative content, the old narrative about a failed continent was being replaced by a new one about a "Rising Africa", while the old narrative about Silicon Valley being the best place to practice technology innovation were similarly being supplemented (though not replaced) by a new narrative about how Anyone Anywhere could build the next unicorn.

      Scholars (Melanie Bunce et al., 2016; Nothias, 2014; Ojo, 2014) have shown how the tone of the media representation of Africa began to be more positive in the early twenty-tens. The most iconic moment in this transformation was when in 2011 *The Economist* published a now infamous cover with a child running with a rainbow-colored kite in the shape of Africa with the words 'Africa Rising' blazoned on the cover. Similarly, in Chapter 2 I demonstrated how the Anyone Anywhere Narrative was taking hold in the minds of techies all around the world. The African manifestation of this was itself retold by members of the iHub, like Juliana Rotich when she gave her TED talk telling a story about Kenyans drawing on the unique context around them to design technology that she believed someone in Silicon Valley would not be able to do. Rotich also added illustration to expansion in the GCTI around who could tell and star in compelling stories about successful technology innovation. So when Rotich and other iHubbers began to tell

the story about Kenya being a technology hub for the continent it resonated with a moment in which many Africans as well as those abroad wanted to be Afro-optimists rather than Afro-pessimists, a moment in which they wanted to believe the uplifting stories they heard featuring African protagonists told by African storytellers. Stories about the children of Kenyan farmers designing a mobile phone app to improve farmers' access to information (mFarm), or about a Nigerian made e-commerce website taking off for the continent (Jumia), or about Nigerians training a new generation of programmers (Andela), or a Kenyan IT student building a recycled affordable 3D printer (AB3D), or even about a community hub that allowed people to come together free of charge to build up such projects. And after the successes of Ushahidi and M-Pesa audiences were willing to believe that Kenya might be the center of this new Africa.

Again, I found members of the iHub's founding team to be keenly aware of the interaction between their stories and these larger narratives. One in particular, as the following interview excerpt demonstrates, echoes the sentiments of narrative scholars like Polletta:

> A lot of communication is fitting into existing narratives or defining new ones. But it's easier to sculpt and flow. It's easier to sculpt a narrative if you're already moving with the flow of a narrative. So, a lot of what was already happening – tech was becoming a bigger thing in Africa. We were building something really interesting that was bringing more of those tech people together. Therefore, if you're looking for a story on the Africa Rising space, on the technology side, where do you go to find the stories? …when you run the iHub, you're the biggest target to hit. And so, of course, we did that.

This excerpt is very revealing of the iHub's early media strategy. Not only were they purposefully crafting narratives about Kenya being the tech hub of Africa, but they were doing it in a way and at a time that resonated with audiences that were now willing to believe stories about promising African innovators. At a time in which narratives about a Rising Africa and about how Anyone Anywhere could be a startup entrepreneur, coupled with the apparent growth of a movement around designing and producing technology for Africans in Africa, the iHub hit a very sweet spot with its storytelling strategy.

The relationship between the iHub's purposeful communication strategy and the reality on the ground is a complicated one. Elsewhere, I have made the case that the way technology in Kenya was being built and designed and the narratives about that practice are mutually constitutive, influencing and shaping one another. I believe that to be the case with the iHub. The iHub team constructed media narratives about the importance of the work going on in Kenya's CTI and in the iHub in particular, but in order to reflect reality and to create it. It is clear that many in the iHub team believed that their work around narrative construction did play some part in drawing people in. Take this revealing excerpt from an interview I conducted with one of the founders:

> So when we started saying in 2010, Kenya's the, you know, tech innovation center of Africa, was that true? Eeeeeh, arguably, probably not. But it became true, because enough people believed in it and built around it. And said okay yeah that can be true. This is the biggest lesson I learned, when you're building something, most people can't envision it, so you have to build that future for them. That reality can become true it's just that it's not necessarily true at the beginning.

This founder made his belief clear that the work they did to construct a narrative about Kenya being the tech hub of Africa, at least in part, enabled it to happen, that by reiterating a story about how great Kenyans were at technology innovation in a believable way, they were able

to help actualize it. This excerpt also belies a view of storytelling very much in line with dominant beliefs about entrepreneurial storytelling in the GCTI, a belief that in order to be successful, entrepreneurs needed to excel at telling believable stories about a reality that did not yet exist, but that could be reached through the adoption of their particular product. Over the next few years after the iHub opened, through the mutual construction of narratives and practice, the iHub did become, for some, what its media narrative claimed it was, a gathering place where techies could find others like them and build cool new products. For many others, it also became a symbol of Kenya's growing community of practice around technology innovation.

The iHub 1.5: Building Counter-Narratives

Soon, everyone remotely interested in technology in Kenya was talking about the iHub. The iHub members told their friends on campus; event attendees told their coworkers; and entrepreneurs told their nieces and nephews up country who were thinking about going into IT all about this weird new space off Ngong Rd where you could meet other cool people who wanted to build things too. Foreign speakers told their investor friends; visiting Harvard grads told their Harvard friends; and foreign journalists told everyone about this open space on the fourth floor of a funny office building that was becoming Kenya's unofficial tech headquarters and maybe even a promising place to find investment opportunities.

A few years after the launch of the iHub, the tone of some of the conversations about the iHub among members of Kenya' technology innovation community began to shift. Disgruntled members told their friends over glasses of koinange or bottles of Tusker; fly-by investors told their buddies back home over dinner; and struggling entrepreneurs told other entrepreneurs who told aspiring entrepreneurs about how the once cool iHub was really just the hyped-up place that everyone knew it was all along. Even as just one person coming in and out of Kenya, in and out of the iHub, I have heard more varied takes on the iHub than there were people to speak to. Everyone had an opinion. Frequently more than one. They had opinions about the space, about the culture, about the people, about how much money it was or was not making and how much of an impact it was or was not having. Below are a few of the countless things I heard and saw people say about the iHub. I heard them in person, in interviews, in speeches, in whispers, or while bragging. I saw them written in blogs, on Twitter, on Slack, on WhatsApp, and even once typed discretely onto my computer so no one else could see or hear it.

It's such a cool space. I love the view. I love the energy. I love the culture of how you can just experiment every day! It's an incubator. It's an accelerator. It's the whole building. It's just a glorified coffee shop, right? It's like a mall for the tech sector, right? It's just for drinking coffee and bourgeoisie shit. For high school project. For downloading videos to watch over the weekend. For meeting new people. It's all expats or people from rich families. It's all two guys and a laptop, no one's working on real companies up there. The space is bright. Energetic. Accessible. Rundown. Unwelcoming. Needs a coat of paint.

It has an open access ethos. A real relaxed culture. A real elitist group. A cult of personality. I don't feel welcome. I don't get anything done. I don't want to leave. I have nowhere else I can work. It's grounded in the community. Turning its back on the community. Too focused on the community. Too focused on money. Too dependent on donor money. Doesn't know how to make money. Rolling in money. Sitting on a pot of cash. Rich. Unsustainable. Broke.

There are no companies that have gone to the iHub and grown to success. What kind of disruption have they brought? What kind of tech has ever come out of there? What have they really built? We got funding because of the iHub. I met my cofounder at the iHub. I got my start at the iHub. None of you would be here today if it weren't for the iHub. People forget what the iHub did for them. People forget that the iHub isn't perfect. That it can't be everything. That

everyone is there. That no one is there anymore. People don't want to admit that it doesn't have any industry connections. That it's too focused on apps. That its Wi-Fi isn't all that. That it's over.

"We're the iHub," one staff member said to me once. "We're sort of famous."

As I endeavored to show in the first portion of this chapter, this fame – the fame that drew attention to the iHub like laughter in a quiet room – was, in many ways, of the iHub's own making, and fit into larger GCTI narratives about how anyone anywhere could be a successful technology entrepreneurs. Like many other storytellers of these narratives and like GCTI techno-visionaries, the iHub's stories were unabashedly optimistic, foretelling a bright future ahead for Kenyan innovators. Yet, like the broader Anyone Anywhere Narrative, iHub's techno-optimistic vision of the future created unrealistic expectations for some, expectations that led many to feel frustrated and disappointed at the very different reality with which they were confronted (as in Chapter 3) and eventually to reject the stories and the storyteller as merely 'hype' (as in Chapter 4).

By the time I started my extended fieldwork in January 2016, it was obvious that fame had become a mixed blessing for the iHub. Many of the criticisms above had begun to take hold and the critical stories people told about the iHub began to construct new counter-narratives critical of its place in Kenya's community of technology innovators. The most stinging and sticky of these revolved around two central critiques: 1) That the iHub was really all hype and no substance; and 2) That it was more focused on – and useful for – international visitors than it was on the local Kenyan community of innovators that had helped to create it. In this section, I will expand upon these two counter-narratives and draw on some of my own observations in and around the building to explore what they meant for the iHub. I will make the case that the initial narratives that the iHub had played a central role in creating eventually evolved to restrict and constrain their creator, drawing it into the center of a new narrative battle that would transform the iHub from the symbol of a grassroots movement around African innovation, to a symbol against which a new grassroots movement would rail.

The iHub is all hype

> I have lots of friends in the tech sector and sometimes I would ask them 'ati ('say' in Kiswahili), why don't you come and launch your project at iHub?' And their feedback is that iHub is a hype piece. 'What good startup came from iHub?' they would ask. So there is this perception that it is over-hyped, that it's more talk and less work. I hear this all the time when I go talk to people who know the iHub but don't work from here. (Interview with an employee of the iHub, March 2016)

In chapter 4, I talked about how pervasive accusations of 'hype' were in and around Kenya's technology sector in 2016. I often found the iHub to be at the center of such critique. Like the other accusations of hype I covered in Chapter 4, those leveled at the iHub focus on the discrepancy between the story that it had told and what people believed was really happening in that 4th floor corworking space. Many such accusations, like in the interview excerpt above, focused on the lack of successful startups that had 'come out' of the iHub. In fact, in one of my very first conversations with an entrepreneur outside of the iHub after my return to Nairobi in January 2016, I was told flatly that "there's no technology coming out of the iHub." Over and over again I heard this refrain. "What good startup came from the iHub?" "What kind of disruption have they brought into the industry or innovation space?" "You have no companies that have gone to the iHub and grown to success".

Other accusations about the problem with the reality behind the iHub story focused on the amateurish level of the startups that worked there (and sometimes the organization itself) and how

inconsequential the iHub had become to 'serious' entrepreneurs. I met entrepreneurs who described the startups at the iHub as "high school projects" and pointed to the "huge gaps" between them and the "guys running successful companies like Ghafla! and Hellofoods." In one very scathing critique, a data storage entrepreneur talked about how little the iHub team itself actually knew about building companies, describing them as "inexperienced investors", who had "never built a real company," were "operating in a silo," and were "disconnected from serious businesses in Kenya" – like 'enterprise' technology companies. Some tempered their critique by saying that the iHub may have been useful in the beginning, but they and other more established entrepreneurs had "developed way beyond the iHub". They accused it of continuing to focus on "idea stage" startups, instead of evolving with the sector and providing more useful services for more advanced startups. As one fintech entrepreneur said during a discussion forum on Kenya's tech sector, "I don't need networking anymore. I have WhatsApp, I have my own connections. What I need is support services, accounting, and legal".

I found this line of criticism – boiled down to the belief that the iHub wasn't good enough, or wasn't as good as it claimed to be – to be a source of immense frustration for many of the iHub employees I came to know. Frequently in conversations, the staff would complain about the unrealistic or misguided expectations they believed people held about the iHub and how difficult it made their work as a result. One talked about the problems with the expectations that the iHub should be building more companies: "How many huge companies have come out? Ok, not many. But if you want to talk about smaller companies there's a ton, mFarm, Kopokopo, etc. …People think that we're supposed to be building these huge businesses – it's literally, that's not what we do." Another, over a lunch together, expressed similar frustration to me with the misconception that the iHub is an incubator. "iHub was never an incubator," she said. "It was always a 'pre-incubator', a space to generate ideas". A third said simply "that iHub has a lota lota lota money. That's the number one misconception." For at least one employee, all these misplaced expectations about the iHub were at fault for the constant barrage of critiques she felt they got, that caused problems and distracted them from the work she felt they needed to do.

> Everyone has all these expectations and opinions about what we should do. It's difficult when it's a blank script that's always adding up. Anyone will come on to the timeline and say iHub should be doing this. …People need to be clear on what iHub does," she said. "So people don't just say 'iHub does this,' and us guys are like 'no!' That's why there's always a blame game. And we're tired of these conversations.

It is somewhat of a coincidence that I happened to come to Kenya to do my primary fieldwork in 2016, a year in which the counter-narratives critiquing the iHub seemed to mount and its defenders seemed to be slipping away or drowned out. For the iHub staff members working through this time, they often seemed to struggle under the weight of the iHub's heavy reputation, not because they were somehow inferior to the staff at the beginning, but because the expectations for the iHub had climbed so high and so diverse. As the head of a visiting startup competition said to me in July 2016, "I've spent a week here and I think at some point everyone has had something to say bashing the iHub. …People want the iHub to be everything: a coffee shop, an investor, an accelerator, a date, someone to marry". This statement, while clearly hyperbolic, gets at how wide-ranging people's expectations were about what the iHub was or should be. One of the iHub's employees really got at the root of this issue when she said: "People think iHub is perfect…We forget that iHub is still run by individuals, by normal people who sometimes don't know what the fuck [whispered] they're doing." I found this to be true in my own observations. People had superhuman expectations of the iHub. It should be producing globally relevant startups. It should be self-sustainable. It should continue to provide access for

free. It should continue to be there for, and relevant to, members of the Kenyan CTI, whether they're just starting out or just receiving their first round of Series A capital.

In the reality as I perceived it, the iHub was still many things in 2016, but it was not everything. The 4th floor space was still accessible for free. But they often held sponsored events that were not always directly relevant to those working in the space and were often scheduled at prime work times throughout the day, forcing members to cram into a corner and turn up the volume on their headphones if they wanted to continue working. They tried to target more advanced startups with events around legal and accounting, like people had requested, but such events seemed sparsely attended. They began to focus more on their incubation work, even halfway through 2016 integrating m:lab – the actual incubator – back into the iHub and making it a prime focus of their work. It also still operated as a focal point of the tech community to some, but the community had expanded significantly and while you might have been able to fit everyone in the community in the iHub in 2010, you certainly no longer could in 2016. They had even built up their services branch, hoping to provide specific services that startup entrepreneurs said they needed – coding consulting, programming and business management training, a design laboratory, and research services. But I still found people saying that more talented programming support or more targeted developer training programs could be found elsewhere. And finally, it still sat physically in an important place, a neighborhood with a lot of tech companies in a building with even more of them, and still did attract a number of international visitors, including, most notably, Mark Zuckerberg in 2016. But the iHub's physical space had begun to deteriorate particularly in comparison to the often-brand-new spaces of many of its competitors, something that the iHub staff were keenly aware of. The following, for example, is a very telling excerpt from a conversation among employees on one of the iHub's private Slack channels about how they were reluctant to invite a prospective client in for fear of the impression the space gave.

> Person 1 @10:52am: look around you, your office [referring to the staff office on the 2nd floor] kwanza ['first']. Does that look marketable? 😋😂😂😂
>
> Person 2 @10:53am: He can see the 4th floor. You know when it's full of people
>
> Person 1 @ 10:53am: When we revamp our shit, perhaps we can make a case for why we should be part of the Brank Kenya spiel.
>
> And tattered bean bags? Hai please. If anyone thinks the 4th floor can still wow people, you be lost in the sauce and the game (to quote Zola).
>
> Person 3 @ 11:01am: That's so true. I hope the 4th floor will also get hiyo ['that'] revamping…
>
> The entrance says it all, worn-our floor, old tables…
>
> Person 2 @ 11:08am: That's why I said full of people, the people are distractions (😖)

The staff members that I came to know, including those in the Slack conversation above, often felt embarrassed about the state of the iHub space in 2016. It wasn't just other coworking spaces that shined in comparison, but even 'friends' of the iHub, like Gearbox and BRCK and much newer, cleaner, and hipper office spaces.

In short, the reality at the iHub was…complicated. Over time, organizations evolve and turn into something that they were not to begin with. Over time, narratives and reality as it is

experience co-evolve, influencing one another. In the case of the iHub, the organization seemed too often to evolve in order to try to meet the expectations of the Kenyan CTI from which it had come, expectations that, as the Kenyan CTI had grown and expanded, had expanded as well, expecting the iHub to be everything for everyone with an interest in technology startups in Kenya. From the beginning, the organization had branded itself as "from the community" and committed to the local community's needs. As I have shown elsewhere, real engagement in a community of practice involves joint negotiation about the practices of that community. Because of the iHub's commitment to its community in practice and in rhetoric, it amplified members exepctations that it would continue to have a say in the iHub and its operations. Moreover, in the iHub's case, those expectations were, I argue, a direct result of the narrative-building work the iHub team had done since its inception.

Furthermore, the very public role the iHub had played in this narrative-building also amplified the accusations leveled at it for being over-hyped. Not only did it not meet expectations, but, the argument went, it didn't meet expectations *because* it was *too focused on its image* and not on the real work. In this vein, I heard the iHub described as "all talk," "more talk, less work," "money hungry," "image focused," "too image conscious," and focused on "big catchy things rather than helping or improving the greater good." As one quite disgruntled entrepreneur said, "running a company, it's not a blog post."

As I showed in the case of the construction of a counter-narrative calling out sexual misconduct at one of the Kenyan CTI's flagship companies, Ushahidi, practice is often invoked to legitimize a story, to demonstrate that it's grounded in truth, that it is somehow 'real' and not a fantasy. And for a while, that is precisely what was happening at the iHub. There was Ushahidi, there was some new promising startups like mFarm and Kopokopo. And in the beginning the iHub drew on such examples to support the narratives they were building, to demonstrate that what they were doing was 'real'. But eventually, six years later, 'real world' events were being used instead as part of the construction of a counter-narrative about the iHub as being all hype. This time, mFarm and Kopokopo and others became examples of startups that hadn't grown as much as everyone expected. Their struggles, the lack of Kenyan 'unicorns', even the history of iHubbers as bloggers all seemed to be drawn in as evidence of practices that proved the iHub was not what it had claimed to be. Practice, this time, was being used to de-legitimize the iHub's narratives and its claim to being at the heart of Kenya's CTI.

The iHub is too international

One of the underlying themes from the counter-narrative about the iHub being all hype revolved around the community, namely the perceived discrepancy between the iHub's rhetorical commitment to the community that had helped to create it, and its commitment in practice. To many, the direction in which the iHub had evolved was decidedly more internationally focused than locally invested. For example, at a public event I attended at another of Nairobi's coworking spaces in July 2016, a conversation about the future of Kenya's CTI evolved, as they often did, into a targeted conversation about the iHub. While some of the critiques echoed those above, others focused on the disproportionate number of foreigners in the space. One fintech entrepreneur present talked at length about this.

> It has an open access ethos, but it's not very open. …People I know take the bus to iHub, but it's hard to get the bus fair and it's hard to spend all that time in Ngong Rd traffic. Is it worth it? To me? No. Most of the people there, they were from very rich families or they were expats trying to see what was going on. There weren't any people like me.

Other discussions I had echoed this. One entrepreneur who runs tech-centric trainings for people in Kibera, for example, talked to me about how many of the students he worked with

wanted to become entrepreneurs but didn't go to the iHub, because they didn't feel comfortable there. Similarly, one of the iHub's staff members told me about how part of the reason his tech friends no longer came to the iHub was because it was all "bourgeoisie shit". Even one of the foreign entrepreneurs I met had picked up on the expat reputation of the iHub. He told me about how he'd opted to launch his company out of the Nailab (the competing coworking space across the hall) because he said "Nailab felt more Kenyan." "At Nailab," he explained "I was sitting next to Kenyans building companies, whereas the iHub seemed very American, no offense".

To some, the perception that the iHub was filled with foreigners (including me, it should be noted) was symbolic of its betrayal of the local Kenyan CTI that it had come from and that it was supposed to benefit. I found that this view was held even by some in and around the Bishop Magua Centre. One of the founders of a tech company that resided in the building, for example, talked to me in 2016 about how in the early years, she felt the iHub had been instrumental in bringing the community together, hosting events and things and really being engaged, but that recently it seemed to be more interested in getting foreign money than in supporting the community. I even found myself in the center of this when the iHub staff advised me to disguise my iHub affiliations when I went to talk to people elsewhere to avoid being perceived as "just another foreigner at the iHub".

In my observations, the iHub's approach to the community seemed…again, complicated. Yes, there had been a lot of foreigners working from the 4th floor when I first visited in 2013, but in 2016 the space felt decidedly more 'Kenyan' with at most only 2 or 3 ex-pats in the space at any one time. There were still events held for the most immediate members in the community – the green members who worked there daily – like mock pitch sessions where they could practice or one-on-one mentoring sessions. But as I mentioned above, there were also countless events run by foreign NGOs or companies – like hackathons, or panel discussions about technology and government accountability – that, while interesting to me, were not always directly relevant to the green members. But I also found that some staff members went to great lengths to support the green members. One, for example, had launched a program called "night shift" where for a few days a week he would stay at the iHub through the night keeping it open for people who needed to get projects done on a deadline. Once, on a Friday night in February 2016 after a group outing, I even saw this individual head back to the Bishop Magua Centre to open the space for members who were desperate to finish a project. Tellingly, when I asked him later why he'd gone back so late even on a night off, he responded that it was a way for him to help the iHub "meet the expectations of the community".

By contrast, another staff member at the iHub found these expectations unrealistic and stifling, particular in the context of the financial difficulties that had gradually taken over the iHub.

> People keep saying the iHub isn't doing enough for the community. But it's not practical. The community isn't even structured like a service that we can charge for. And people think that we get money from this black hole that we keep on digging. I don't think they understand what it takes to maintain that space. …From our side the community is where we kind of give back. And if you think about it, we really wouldn't focus on that if our existence is on the line. People need to appreciate that. And with the funding problems we've been having, we need to figure out if the community is something that we will continue to put front and center.

This staff member was far from the only one with such sentiments. Even some of the new leaders who were brought in to 'save' the iHub financially in 2016 believed that they needed to de-prioritize the community because it didn't bring in much revenue, something that seemed untenable for a financially struggling organization. The role of the community in the iHub's

mission became such a point of contention that at least one staff member chose to resign believing that new management would move away from its community origins and would begin charging for access to the space. The staff member in question told me about how his primary concern was the "green members" who come and work on their startups from the 4th floor space on a regular basis. To him, these green members really depended on the iHub.

> If the iHub collapsed, it would be a real struggle for them. Many of them cannot afford the fees at coworking spaces in other parts of the city. …The community is really at the core of what iHub represented at the very beginning. But it has lost that. I see many of the community members are disappointed in what iHub has become. Now the iHub ignores the community because it has not been a main avenue for profit generation.

In the end, the strength of the narratives that the iHub helped to create in the first place, helping them to reach not just Kenyan but international audiences, by 2016 caused problems for its claim to local relevance and commitment. All the international visitors, like Marissa Mayer, who had helped it to amplify the iHub's narratives abroad, as well as all the stories about other African countries trying to replicate the iHub, undeniably turned it into a first port of call for many foreigners, myself included, coming to Kenya with an interest in tech. The interaction of the narratives it constructed and the reality that evolved around it created an image of an entity that had one foot in and one foot outside of Kenya, an entity that may have been physically based in Kenya but was fully facing the outside world, at odds, to many, with the organization's rhetorical commitment to local techies.

The perceptions of the iHub as more invested in the global community than the local community were compounded by the organization's close connection with Erik Hersman. For good or bad, as I demonstrated in the first section of this chapter, Hersman was at the forefront of the media coverage of both the iHub and Kenya's technology sector. As even people who worked for the iHub acknowledged, over time Hersman's position in the spotlight led to a reputation that he and the iHub were inseparable, even when he went off to found BRCK. One of the iHub's long-term staff members described for me the problem with this tangled reputation. "The fact that the iHub is Erik and Erik is the iHub was probably one of the contributing factors to the problems we had. So, if people had difficulty with Erik, they would have difficulty with the iHub, which shouldn't have been like that. It should be…they should be very distinct entities."

As long as no one had a problem with Hersman, the strong reputational connection between him and the iHub was not problematic. By 2016 however, in part due to his involvement in the Angani Saga, in part due to the dominant role he played in Kenya's CTI as a founder of the iHub and a key shaper of the community narratives, and in part due to his hybrid identity, Hersman had become a target for many frustrated at the perception of investor bias and elitism in Kenya's CTI. In such a climate, the inextricability of the reputations of Hersman and the iHub became decidedly more problematic for the iHub adding fuel to the fire, evidence to the new narratives critics were building about the iHub being more interested in foreign investors than local entrepreneurs, more concerned about its international reputation than its local one, more concerned about legitimacy in the global GCTI than the Kenyan one.

In the case of both of these lines of criticism – that the iHub is all hype and that it is too elitist and too international – existing narratives that the iHub had built in its early years came back to haunt it. Initially helping it grow Kenya's tech sector and the iHub's place within it, these narratives later became evidence used by critics to signify its failings, particularly the inefficacy of its work and the hypocrisy of its founder. Furthermore, the storytelling approach the iHub adopted, as well as the identity of its most visible storyteller, eventually ended up also being used as further evidence to build counter-narratives about its failings. That leaders at the iHub had initially put so much effort into narrative creation became used as evidence of how the iHub's

priorities focused more on image than on substance. And that the primary spokesperson in that process of narrative creation had been a man with complicated identity politics meant that the iHub's reputational fate and his were intertwined.

The iHub 2.0: Dueling Loyalties

> The iHub's mission is to catalyze the growth of the Kenyan tech ecosystem, and so it remains. However, the Kenyan tech ecosystem of today is not the one we had in 2010. We have more tech spaces that have grown up, including Startup Garage, Nailab, Growth Hub, The Nest, Pawa 254, Swahili Box, Lake Hub and others. There are more options for co-working, many more investors at all levels, and multiple incubation opportunities around just Nairobi, and more across the country. What then should the iHub do? What should it be if it is still to fulfill its mission? (Hersman, 2016)

When I returned to Kenya to continue my fieldwork in January 2016, I found a technology sector that had changed considerably, and an iHub that seemed lost, unsure of how it should fit into a new environment that it had, in part, helped to build. As Hersman wrote in the blog post excerpt above, the sector around the iHub had changed. Not only were there countless new coworking spaces like the ones he listed, but there were many more advanced startups with more diverse needs than before. For example, by 2016, M-Kopa Solar, a company that provides pay-as-you go solar power energy, had acquired $52 million in venture capital funding, and a small handful of entrepreneurs had successfully exited their companies, including Hilda Moraa, who sold her fintech startup, WezaTele, to an African financial services group for US $1.7 million in 2015 and got her start at the iHub. Investment in African startups was on the rise. According to a report from a San Francisco-based venture capital firm, Partech Venture, investment in technology startups in Africa totaled US$366 million in 2016, with Kenya ranked the third most desirable investment destination after South Africa and Nigeria, and accounting for US$92.7 million of that (Kazeem, 2017). But also, as I showed in the previous chapter, important new debates were beginning to take over what practices should and should not shape the Kenyan community of technology innovators going forward. Is startup innovation crucial for the future of Kenyan growth or is it being fetishized as a catchall solution to Kenya's problems? Is the purpose of designing and building technology in Kenya to solve Kenyan problems and stay focused on local needs or to solve global problems and reshape global views of what Africans can do? Was it really a 'Kenyan' innovation if the entrepreneur leading it or the investors funding it were American? And what should be the future role of international actors in the sector anyway?

By January 2016, Nairobi's technology community had grown far beyond fitting into the iHub space, and to many, as we saw above, had outgrown it entirely. Thanks to its prominence in the spotlight and the complicated storyteller role that Hersman himself has played, the iHub was also squarely in the middle of many of these national-level community debates and had become a symbol, as I showed in the previous section, of some of the problems with Kenya's tech sector. As I wrote in my fieldnotes in January 2016 "the iHub as it currently is feels overshadowed by the iHub people believe that it is".

What then, as Hersman asked in the blog post, should the iHub do? "What should it be if it is to still fulfill its mission?" – a mission, as he described it, "to catalyze the growth of the Kenyan tech ecosystem." According to at least one manager at the iHub (or 'team lead' as they were sometimes called), these were not new questions for the iHub. In a February 2016 conversation, she explained that they were questions that the iHub had revisited every year since its inception. To me, that sounded like a good thing for a company to do, a way for it to reevaluate if it was on the right track. But to her it was frustrating. "Every year," she said, "there

are conversations and meeting and reports sent around, but it rarely materializes." She explained that this time seemed different only in that the leadership seemed to want to take a very "community-driven democratic approach" to running the iHub, meaning, she felt, that this process of musing over what the iHub is, was taking longer than usual and was more taxing on the rest of the staff. One of the board members I spoke with corroborated this, explaining that the board had purposefully taken a hands-off approach to allow the iHub to be what the staff wanted it to be in early 2016. "We've purposefully stayed in the background," he explained to me in July. "Whether that's good or bad, all of the changes etc have come from the iHub staff."

However, unlike previous years these questions about what the iHub should be became more urgent in 2016, a year that would ultimately see many big changes, including *new investors, a new CEO, and the announcement of a move to a new building*. In this final section, I will show how these changes generated heated internal debates that reflected many of the debates being had in the Kenyan CTI more broadly. I will make the case that the iHub's unique position as a kind of hybrid entity at the crossroads of two communities – the Kenyan CTI and the GCTI – made its choices more difficult because it meant that in order for the iHub to answer the question "what should the iHub do?" it needed to first answer in which community it most cared about belong. Furthermore, I will argue that taken together the changes the iHub ultimately made in 2016 signified a new path for the iHub more closely aligned with the values and received practice of the GCTI than with the nascent Kenyan community that it had come from.

New investors

The first big change of 2016 was new investment, announced in the March 11 blog post above that written by Hersman. Despite the organization's high-profile status, in recent months the iHub had been struggling to cover its costs. Some of the funding sources that they had previously relied on, like grants, were no longer as prolific as they had previously been. As one of the iHub managers explained to me, "grants were drying up all over the place…we realized you can't rely on grants forever". And the paid-for services that they had ramped up were not yet making up the difference. Explaining the move in his post, Hersman wrote: "First and foremost, we recognize the need to make sure that we are 100% self-funded." In other words, they needed to reevaluate their business model so they could sustain their business from the work they were doing, rather than relying on external funding like grants. In a large staff meeting on the same day the blog post was published, the management at the iHub explained the justification for the changes to a bemused staff. One manager chose to explain the transition metaphorically: "The iHub has been very sick. It was really really bad. The patient is not in the ICU, but now the recovery will be a lot of work." Another spoke more specifically: "We had a really shitty time over the last 9 months. But it's like any organization; you go through troughs. But going forward we need to make sure we're sustainable. We need to work like a well-oiled machine."

Taken at face value, this decision seems quite straightforward. An organization that had been struggling financially, took funding and was reevaluating its business model to become more efficient and more profitable. What's more, taking investment, including foreign investment, had become a very common occurrence among Kenyan startups. But the iHub was a different kind of entity. Throughout its entire existence – and as a direct result of its communication strategy – the iHub had been, and had been seen as, a community-focused non-profit. For such an organization, this move seemed like quite a striking shift. In an interview with me, one of the iHub's managers explained the change in direction as the iHub trying to find a "more sustainable" way to continue to have the social impact it had always had, rather than a shift entirely away from the social. Intriguingly, to do this he referenced a TED talk from a Harvard Business School professor, Michael Porter.

> Look at Michael Porter's shared value thesis. He doesn't talk about impact.
> His mindset is really on the business side. Take a look at his TED talk. It

captures really how businesses should not just think in terms of making money *or* social, but how can I do *both*? From the point of view of development – and yes, I think we're in the development game – the most sustainable way of doing development is to take a business approach.

In this explanation, I found someone trying to resolve conflicting pressures on a unique organization. Like any organization, the iHub needed to find a way of sustaining itself, but unlike other organizations it had become a symbol of a growing social movement around designing and building technology in Africa. This symbolic role meant that the iHub faced greater challenges in persuading the local community that in adopting a more for-profit business model it was not abandoning its social purpose. The invocation of the shared value thesis above shows an attempt to walk this very fine line. In a second interview at the end of the year, the same manager spoke more explicitly about the impact of the iHub's unique place as a social movement:

It's true, the iHub has been a kind of social movement. And if you're a social movement, you pretty much operate as a non-profit, like Ushahidi. It's good, but it's not easy. But you need to be ruthless to sustain an organization, and to do that you need a business mind. Running a social movement versus running a business are two different things. And maybe you can have them both, but we needed to be a business for a while.

Among the staff, I found trepidation and confusion about what the new investment would mean for them and for the organization. Despite the above manager's attempt to walk the line, I found some of the staff concerned that the move would mean they would lose their focus on having a social impact. "It's really confused about where we're going. We're a private entity now. But I don't know if we're owned by those new investors. Someone said they bought us! So, I guess they get to decide if we're social or profit focused from now on." This concern ultimately revolved less around whether the iHub would be more focused on social impact or profit generation, and more around who ultimately got to decide the direction the iHub would take, who got to call the shots, who, as Wenger might describe, was really engaged and had a say in the things that matter. In the past, as an organization that had focused so much on listening to the community of innovators around it, such decisions had historically been made, or at least informed by, the local Kenyan CTI, the staff included. If new investors had "bought" the iHub as this staff member feared, then they would ultimately get to decide something over which the community had historically had significant influence.

Over the course of 2016, I witnessed many attempts to make the members of the Kenyan CTI – particularly the most immediate green members – feel included in the decision-making process of the iHub. For example, in June 2016 the iHub staff held an event called "iHub: The Next Chapter – Getting Involved" where they offered the community a chance to influence how the iHub would evolve. Speaking for the staff, then CEO Mugambi said "This forum is a way for everyone to get *engaged* and involved in shaping that path at the iHub because the iHub is a unique organization."

Further complicating this move was the identity of the new principal investor, Miguel Granier. While Hersman's March 11 blog post had mentioned three other investors, all Kenyan - Bitange Ndemo, Beck Wanjiku, and Ken Mwenda –Granier, a foreigner, was the most controversial. In the staff meeting announcing the new investors on March 11, Granier, a Boston native and a young confident looking man with a beard and an American accent smiled a lot and spoke about his motivation for investing. He had been a "fan" of the iHub since 2012, he explained, and he wanted to help it build companies that he could, in turn, invest in. Many of the iHub staff seemed to be cautious of his involvement, perhaps because he had previously been an investor in Angani. Already associated with the Angani Saga through their relationship to

Hersman, some iHub staff worried that by bringing in a foreigner associated with Angani, they would be validating concerns that the iHub was seeking foreign funding at the expense of the needs of the local Kenyan CTI. Furthermore, with concerns that the iHub was courting international funding at the expense of the local community, Granier's identity seemed to hand over the decision-making power about the future of the iHub to no just a foreign investor, but to one who already had a problematic reputation among members of Kenyan's CTI.

New CEO

On June 6, 2016, after three years as the iHub's CEO and one of its founding members, Josiah Mugambi, announced in a new blog post that the iHub was looking for his replacement.

> One of the key roles that we are looking to hire for is for a seasoned Chief Executive Officer that can support me and the team as we grow towards our ambitious new goals. We are looking for an experienced executive with a proven track record building tech-oriented companies, including business development and fundraising (Mugambu, 2016)

Continuing to appeal to both the iHub's international and local community audiences, Mugambi further wrote that "This person will provide strong leadership by working with global customers, investors, and donors while demonstrating a passion for innovation and innovators." The management was keenly aware of the pressure on the iHub to find someone not only with experience running a more for-profit business for the new direction that they were going, but also who understood the iHub's community roots. As one of the managers at the iHub explained to me in a July 2016 interview, they wanted someone with strong experience building companies, but who also "understands the culture of the iHub." Demonstrating an awareness of recent criticism about the iHub's commitment to the local community, he also added that they had a "strong preference for a Kenyan."

In the end, the new CEO, Kamal Bhattacharya, announced publicly in a blog post he authored on August 26, 2016, was not Kenyan. He was born in India, grew up in Germany where he'd done his PhD in Physics, and spent most of his career working for IBM, for which he'd moved to Kenya a few years prior to help IBM set up its first Research Lab in Africa in Nairobi. He certainly had the for-profit technology company experience that the iHub had been looking for and that fit the new direction the investors had signaled. When I first met Bhattacharya, he gave the impression of an individual with a structured corporate mindset keen to help the iHub – one of the organizations that, he said, had led IBM to choose Nairobi for its first African Lab – improve and sustain itself. In his first appearance in front of the iHub staff on August 12, he wore a blue checkered shirt, a grey jacket with shoulder patches, and jeans, quite different from the jeans and a t-shirt Silicon Valley uniform popular among the likes of Zuckerberg. While he struck me as quite no-nonsense in his leadership style, he also had a very calm and even calming demeanor when he spoke.

After the announcement of his appointment, right away, as anticipated, some of the staff expressed apprehension about his identity. In an informal chat we had over lunch, one pointed to the debate taking place in the broader Kenyan CTI as cause for his concern. He explained that he believed in the previous year and a half that the "tide has really turned against ex-pats running companies," and that this "Africa for Africans mentality" was "becoming popular in our tech community". As an example, he pointed me to the Twitter hashtag #BlackFoundersMatter that I discussed in Chapter 4. One way or the other, he believed that Bhattacharya's appointment could "really influence perceptions of the iHub". A few weeks later I asked him and one of his colleagues if his concern about the new CEO had changed over time. He answered that his initial skepticism of an outsider coming into the iHub hadn't gone away. Both he and his colleague agreed that it felt suspiciously like he was trying to turn the iHub into "a more international

company". In particular, they were both wary of his desire to "bring in experts", which to them was "code for bringing in foreigners".

By contrast a number of staff members I spoke with seemed excited about the new appointment. After being uncertain about the new direction that the iHub would take, many seemed relieved to have a new CEO who spoke frankly about his plans for the iHub with a clearer direction than before. Not everyone seemed to care whether or not he was Kenyan. Team leaders, in particular, seemed to speak about him favorably. One, for example, talked to me in November about how important his new networks would be for the future of the iHub.

> One of the things that excites me about having Kamal on board is that he comes in with this whole new group of people that we didn't have access to before or that we didn't consider talking to. …So if you mix in this new network that he comes in with, with some of our old networks, most of whom are actually still relevant, then we have a whole new world to play around with.

Another, in December, spoke about Bhattacharya's extensive experience and his objectivity, and how important that was for dealing with the many varied stakeholders from the iHub's community.

> The fact that he is older than most of them [the members of the iHub community]. He is mature. He has worked at a very senior level and he is able to be objective. He is able to spend time chatting with all these guys… but then is able to still make objective clear decisions about the iHub. He is able to detach the person from the profession, which people unfortunately can't most of the time.

As Bhattacharya took time to assess the iHub and develop a plan for where it should go, the relationship between the iHub and the community around it became a topic of much debate within the organization. In his first blog post for the iHub, Bhattacharya made his own stance clear. Instead of an abstract notion of "community" that the iHub should support, he argued that they instead needed to clarify what they meant by the term – to him, instead of focusing on the iHub's "community" it should see them as "customers". "The essence in our shift," he wrote, "is from serving a somewhat abstract community to serving customers that make up our community." Through the tone he took in the rest of the post, it was clear both that the decision he'd made wasn't up for debate and also that he recognized that the topic of "community" was of great importance to many people around the iHub. He even opened the post citing all the ways in which the iHub was important to, and connected with, different communities, locally, regionally, and internationally.

> The iHub has played a significant role in creating and defining the tech community in Kenya. It has become a guiding light to many regions on the continent and beyond. The iHub serves as the first point of entry to those who want to reach out into the local community, tap into local knowledge, or just hang out for a while with like-minded people.

But who were the customers that Bhattacharya was talking about? Were they local, regional, or international? Were they entrepreneurs or investor, or even innovators outside of the startup model? As he rightly pointed out in the post, the community around the iHub had changed significantly in the six years it had existed, and was no longer a small group of techies experimenting with open source software that it had been at its inception. "The mission embedded in the mantra of technology, innovation, community," Bhattacharya wrote, "never changed at its core. What changed is the community". In staff meetings, Bhattacharya made it

clear that the community they should focus on going forward should be those that could pay. At the same time, the iHub's public relations material continued to emphasize the "community". Though the "technology, innovation, community" mantra had been replaced with the new and more corporate "Connect. Build. Invent.", the organization's new website, continued to emphasize community. It described the iHub, for example, first and foremost, as an organization that "serve[s] the tech *community* [emphasis added], by connecting organizations and people, building market relevant solutions and being ahead of the curve of innovation."

Among the staff, I found many divergent opinions about *which* community they should focus on going forward. One manager, for example, talked to me in December about how well-known the iHub was internationally and how they really needed to focus more on their local community.

> More people knew about the iHub outside of Kenya than inside. …it should be the other way around. You've got something that's really about supporting entrepreneurs in Kenya first and then across the continent. It should be known very well locally, then it can be known internationally. But, I mean, now you have to live with the fact that it's a global name.

By contrast, Bhattacharya often emphasized the need to focus *beyond* Kenya. In a speech he gave to conference on ICT4 Social Innovation co-organized by the iHub, he explained that his "main goal" for the iHub was "to set out our new strategy to make it more relevant not just for Kenya but also for the sub-Saharan and ideally African region. For others, the community that mattered was far narrower – just the "green members".

Over the course of 2016 however, I observed some consensus emerging around the view that the iHub's focus should be on the portion of the community that was "building serious businesses". While this sentiment echoed Bhattacharya's emphasis on thinking of the community as customers, I heard a version of this expressed even before Bhattacharya's appointment. For example, while announcing the new investment to the staff in March, one of the managers explained that the new goal should be to "make sure there's more serious guys on the 4th floor," and to "make sure there's a clearer line for their growth". In July, another manager explained to me in an interview that the iHub needed to "focus on helping companies scale". When I asked him why, he explained that this focus would be of benefit to "everyone". "If they've scaled they'd be more able to pay for services from the rest of the iHub and the funders would be happy because part of what they're hoping to do is build more companies so they can invest in them." For one of the team leads, this focus was good because it would lead to increasing the iHub's visibility among "more established companies in the country". "Now," she explained "people who are interested or who know about the iHub are younger," but with their new focus, she believed that could change.

For many, this emphasis on "serious businesses" was less practical, less about whether companies could pay, and more philosophical, more focused on the attitude of the entrepreneurs. Were they serious about building products and businesses or were they just using the space to download movies? In November, one of the managers summed up this view to me in one of our interviews:

> The people that I hope we still are able to serve are the guys who honest to God truly just want, or need, to come in everyday just breaking their brains for turning their ideas into that solution that everyone needs. For them the iHub isn't just a place to be, it's actually, 'this is my livelihood and am trying to make this thing work because I really believe in it and am hoping I can eventually reach that breaking point where I can scale it.

For all of its history, access to the 4th floor space had been free, and to many on staff, this desire to help the people who were serious about building companies necessarily meant that access to the 4th floor space needed to stay free. Throughout 2016, I found many of the iHub's staff members emphasizing how important this was to them, but I also gradually saw the language with which it was discussed shift. In June, for example, in a presentation made by the staff to the green members, one of the team leads emphasized their commitment to keeping the space free. It was important, he explained, to keep the space free, "to make sure that anyone can still come in". By July, however, one of the managers explained in a one-on-one interview that they now wanted to keep the 4th floor space "*pretty much* free", but, he added, they would rebrand it as "sponsored" instead of "free," because "people have expectations of entitlement when something is free. …This way, the green members will know it does take money to maintain the space." By September, under Bhattacharya, the new plan was to charge for the space, but provide a few sponsorship opportunities where *serious* entrepreneurs who couldn't afford access could individually be sponsored. I spoke at length about this topic with one of the iHub managers in November. She had at first been very resistant to the changes Bhattacharya was proposing to the community. By November, she seemed to see the need for the changes in practice, but also still seemed conflicted about them in spirit.

> I think the point where I switched was when I began to understand what the benefit of the changes were to the community. Initially I was on the defensive and immediately the question would come into my mind "where does this leave our community? Where does this leave our members? So, now there is a payment model, where does that leave the guys who can't even afford lunch? You know? But we aren't a bottomless money barrel. We can't afford to let people have the iHub for the day and do whatever they want and not charge for it. Those were really sweet things the iHub did. And I wish we could still continue to do that as before, but we need to be sustainable and I need to remove myself from the situation where, you know, I want to just do nice stuff for nice people.

Providing access to the space for free was, I believe for many at the iHub, a sort of code for prioritizing the *local* over the global community. Foreign visitors could most likely easily afford any cost that the iHub implemented. But the earliest entrepreneurs, the IT students looking for ideas or looking to learn about startups or programming, or the serious entrepreneurs who hadn't yet generated revenue would all potentially find it more difficult. This move to begin charging for the space drew attention back to the question that had first appeared with the new investors: Is the iHub giving up its social function in favor of sustainability? In his first blog post, Bhattacharya was keen to preempt any concerns on the matter. After his statement about treating the "community" like "customers", he immediately addressed the question of the organization's social obligation: "This should not be misconstrued as a transition from doing good to making money. Commercial viability is essential for the iHub to continue to do good and the better we will do commercially, the more we can reinvest into our people and the community we serve." Here, he echoed one of the iHub managers' earlier invocations of Michael Porter's shared value thesis: The best way for the iHub to "continue to do good", he argued, was for it to become more sustainable and more efficient. They were not, he assured the audience, turning away from do-gooding altogether.

New Location

On February 4, 2017, in a blog post called 'iHub Relocating to Senteu Plaza", the iHub formally announced the decision to move out of the Bishop Magua Centre (Ombati, 2017). More so even that bringing on new investors, changing the business model, or hiring a new CEO, moving from

the building in which Kenya's startup community had grown in and around the iHub seemed to confirm speculations that the iHub was withdrawing from its commitment to that community.

The decision to move had been made months before this announcement and progress in this direction had started in earnest in September 2016 while I was still conducting my fieldwork. When the rumors about the move began circulating around the iHub, many people express their frustration to me about the decision. One entrepreneur, who had had notable success abroad with his CRM software, lamented the move and expressed to me his concern that the very early stage entrepreneurs who couldn't afford to move would suffer the most. Another, who ran a technology startup that had opened in the Bishop Magua Building after the iHub, saw it as a sign that the new CEO didn't "care about the community". While the new leadership at the iHub had expressed their desire to have companies like hers move with them, she explained that the cost associated with such a move – costs like ending the lease in the old building, constructing and furnishing an entirely new office, and the higher cost of rent – all made the move prohibitively expensive for her company. Yet others actually seemed pleased that the iHub would be moving and saw it as a sign of progress not just for the organization but for the community it was meant to serve. For one entrepreneur, for example, the move would be a way for the community to "move beyond the restrictions of this tired old building".

In the blog post announcing the move, on the February 4, 2017, the iHub employed language about its continued commitment to the community as a way of addressing some of the critiques that had been spreading as rumors within the Bishop Magua Centre.

> We look at this new location as the start of another chapter of iHub 2.0. The move to the new space is driven by the need for iHub to expand its services and be able to reach and serve a bigger community. The new office will have plenty of space for entrepreneurs to work from, meeting rooms and event space. The new space will enable iHub to increase the capacity for the community as well as services that it will offer…We want you our community to be part of this move! (Ombati, 2017)

Within the organization it was clear that they were trying to walk the line between finding a way to make the organization financially self-sufficient and continuing to support a locally-situated but increasingly diverse community. Language employed like "you our community" attempts to highlight how inextricable the iHub is from the community and how continually committed they are to it. Nonetheless, the move, only added to the impression already brought on by a new investor, a new CEO, and a new for-profit business model: That the iHub was symbolically turning away from its local community roots.

Conclusion

In the end, many of the very same debates that we saw in the broader KCTI in Chapter 4 were reflected in the internal debates that I observed at the iHub. What should the iHub be? Who should it be for? What should its core values be? Probably more so than any other technology related entity in Nairobi, the iHub sits very publicly and at times problematically, at the crossroads of multiple communities of practice, from the immediate one that uses its space on a daily basis, to the wider Kenyan community as well as the global one. And while each of these communities revolve around the same core practice of technology innovation, they differ in their values and stakeholders and commitments.

In the first portion of this chapter, I show how the iHub and those that founded it used their expertise with storytelling to construct interlocking narratives about Kenya as a tech hub of Africa and the iHub as the center of it, and used their commitment in practice and in rhetoric to the local community to emphasize the organization's local authority and to invoke a sense of

belonging and community ownership in the entrepreneurs and programmers who came to use its space.

In the second portion, I showed how the international acclaim the iHub received in part through these narratives eventually became problematic, leading to the creation of a narrative battle about what the iHub was and should be. Particularly prominent counter-narratives that emerged focused on the iHub being over-hyped and too elitist or international. For many in Kenya's CTI, the iHub became seen as too focused on legitimacy in the GCTI, not sufficiently Kenyan, not sufficiently committed to the Kenyan CTI, and more interested in international praise and attention than affecting any real change in Kenya. Over the course of five years, the iHub had gone from being a prominent shaper of the narrative about its own organization and about Kenya and its community of innovators, to being overwhelmed by counter-narratives questioning its local commitment. By bringing on new investors and a new CEO, implementing a new business model, and physically moving out of Bishop Magua Centre, the iHub was symbolically re-exerting itself in this narrative debate.

Looking at the case of the iHub is an excellent way in which to understand how actors on the GCTI periphery are coping with being caught between multiple communities of practice, and multiple, often conflicting legitimacy burdens, and the choices they're making when in the end they can't be everything to everyone forever. In the case of the iHub, those who wanted to focus on financial self-sustainability and to provide services for more established technology innovators in both the global and the Kenyan CTIs won out over those who wanted it to continue to be the support for those fledgling entrepreneurs that it had helped to support at the very beginning.

In Chapter 4, I showed how a group of Kenyan innovators were working – through both practice and narrative – to push the Kenyan innovation community in a direction that diverged from prescribed Silicon Valley practices and better reflected Kenyan values and priorities. By implementing the recent changes that it did, the iHub seemed to be staking out an *opposing* position for itself in this broader narrative debate, one that pushed Kenya's innovation community *closer* to the global one rather than further from it. Yet, while the iHub has long held a close connection to innovators outside of Kenya, its original manifestation – as a non-profit community space at the front of a social movement – notably *differed* from most of the normal practices in the GCTI. For an organization that was frequently seen as an example of how innovators in Africa were designing and building technology in a different and locally relevant way, the symbolism of this transformation should not be underestimated.

CONCLUSION

It's June 2016m and I'm sitting on a couch in the open-plan coworking space of the iHub on the 4th floor of the Bishop Magua Building. The couch is blue, almost a faded denim color with a square chocolate brown table in front of it. To my right is a small coffee bar with white tiles and a yellow-green wall, called Pete's Coffee. Today the space feels buzzing and warm. The sun is finally out after a few days of English style cloud cover and the room is surrounded by full-length windows, filling the space with light and energy after the rain. Around the space sit about 25 different individuals, most working at laptops with headphones on and coffee cups or water bottles nearby, while others are engaged in discussions with their neighbors. Some I know to be entrepreneurs working on small startups, others are freelance developers working on code for contracts, others are students participating in ongoing coding bootcamps, while a handful are employees at the iHub. I've been away for a week doing some data collection in Mombasa so my time quickly fills up catching up with colleagues and friends. A British man running a small technology NGO comes to tell me about his recent work trip to South Sudan helping a group there figure out how to use a new SMS program to report conflict. One of the iHub's communication officers gives me an update on how their communication strategy has changed in the week I've been away. I send him links to some YouTube videos I think might help with their new strategy. A freelance blogger I know asks about some photographs that I owe him for a piece he's doing on Safaricom in the tech space. The space's community manager chats with me about the stresses involved in organizing a startup competition, DLD Tel Aviv Innovation Festival, that's scheduled to take place the next day. And one of the entrepreneurs who regularly works in the space comes by to ask my "non-developer" opinion about the new user interface for a music application he'd been developing.

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It has been five years since I first visited the iHub and started this ethnographic process. And over the course of that time, I have had many days like the one described above. Most days there were filled with constant conversations and face-to-face interactions with the iHub's staff, with the entrepreneurs that they hosted, and with many of the Kenyan and international visitors who passed through the space. Some days were more active, like when the space was taken over by startup competitions, like the DLD Tel Aviv one mentioned above, or by a TED cocktail event to recruit new fellows. Some were much quieter and were spent simply working on my laptop on a particular project, often related to the iHub's communication strategy, while seated next to the iHub's staff. But regardless of how busy, every day served as a reminder of how the day-to-day lived experiences of the people around me were not just locally-grounded in the physical space in Nairobi in which we were situated, and in the geographically located communities in which they belonged, but were also intricately engaged with "multiple elsewheres" (Mbembé & Nuttall, 2004), in other parts of Kenya, Africa, and across the globe. Even from my first visit to the iHub, it was readily apparent that it was a physical space full of "flows, of flux, of translocation, with multiple nexuses of entry and exit points" (Mbembé & Nuttall, 2004, p. 351).

Mbembé and Nuttall wrote in a 2004 special edition of *Public Culture* that both the popular and academic representations of Africa continued to describe the continent as "apart from the world" (Mbembé & Nuttall, 2004, p. 348). The field of ethnography certainly shares some of the blame for this with its historic conceptualizations of bounded isolated African fieldsites distinct and apart from the world that the researchers inhabited, combined with the reluctance many of us have about generalizing beyond the unique fieldsites that we study (Ferguson, 2006). Quite the contrary, as Mbembé and Nuttall have argued, Africa, and particularly its cities, have long been "embeddedness in multiple elsewhere" (Mbembé & Nuttall, 2004, p. 348), and continue to be "places of experimentation for engagement, the terms of which are not exclusively fixed or determined in advance" (Simone, 2001).

With technological advancement and the pace of economic and cultural engagement from such elsewheres increasing, urban studies scholars like AbdouMaliq Simone have shown how Africans, like people elsewhere, are even more closely interconnected with people and ideas from around the world than before (Simone, 2004, 2010). Ethnographers too have explored more frequently in the last 10 years the multiple "elsewhere" in Africa and their connections to the globe through the production of media content (S. Avle, 2011) and in their use of the internet (Jenna Burrell, 2012), how those connections complicate the processes of meaning making and identity construction among urban Africans (Comaroff & Comaroff, 2001). But to date, I believe there has still be insufficient research into how Africans negotiate these complicated processes through their participation in the *production* of new technologies, the very platforms through which we experience and engage with one another online. The African theorist Herman Wasserman recently wrote that "historical narratives about the internet have tended to foreground the development of technology itself rather than the experiences of its users" (Wasserman, 2017, p.129). The development of new histories and understandings of the internet needs to include not only the experiences of the users, but also the experiences and subjectivities of the producers, from those writing the latest data mining algorithms at Facebook to those developing a new privacy enhancing application in Mombasa. And while a wealth of new research is emerging that looks at technology producers, particularly in the field of Human Computer Interaction, we need more research in this area. Especially with how interconnected and often hierarchical I found work in the Global Community of Technology Innovators (GCTI) to be, we need more research that looks at the experiences of designers, programmers, engineers, and entrepreneurs in diverse contexts like Kenya or from diverse socio-cultural and economic backgrounds. Such research could be crucial for helping to understand the quality of access that diverse individuals have or don't have to participate in the important technological development processes shaping everything from how we communicate to how we send money.

It is my hope that this dissertation has taken a small step in this direction and shown how a group of Kenyan innovators at the iHub are negotiating their engagement with an imagined community of technology innovators around the world. Through a rich communicative ecology of in-person visits and shared online platforms, YouTube videos and TED talks, news articles, entrepreneur biographies, and media narratives, members of the iHub are connected to the practices, stories, and values of their counterparts abroad. Through physical spaces like the iHub, they are adopting elements of material culture that have become "transnationally legible emblems of innovation" (Irani. 2015, p. 801), recognizable to anyone building or hoping to build a startup around the world. Moreover, through the concurrent migration to and touring of people through the iHub and other sites of innovation in Nairobi, and of Kenyan entrepreneurs through similar spaces abroad, they are connected in person as well as virtually and symbolically. Some of the people I knew at the iHub had studied abroad and returned to start companies in Kenya, like Avle's 'glocal' entrepreneurs in Ghana (S. Avle, 2011), others had traveled abroad for startup competitions or had been invited to give talks or appear on panels at conferences at MIT Media Lab, South by Southwest, and to entrepreneurs' clubs in Hong Kong. Others had never left Nairobi but worked for large Western companies like Google or IBM or with American entrepreneurs, Chinese investors, or South African engineers, or met Ugandan entrepreneurs at startup competitions or Dutch investors at networking events.

But while the iHub's communication strategists would likely characterize these international connections and collaborations as necessarily positive, I hope to have shown in this dissertation how a more critical lens, using a theoretical framework that integrates narrative theory with the communities of practice framework, sheds light on the hierarchies of power and legitimacy embedded in many of the narratives and much of this transnational work that can often influence Africans' ability to be taken seriously as workers on an international stage.

In Chapter 2, I showed how the development of the Anyone Anywhere Narrative and its resonance with pre-existing identity narratives among Kenyans helped to influence many

Kenyans to try their luck at becoming tech entrepreneurs. While that narrative became adapted and retold locally to become the Kenyans Can! Narrative, conveying a belief that Kenyans were particularly well-suited for life as tech entrepreneurs, it could equally be applied in other cultural contexts that identify with some of the practices in the GCTI. In short, it could easily become something akin to a We Can Here! Narrative in many varied contexts.

But in Chapter 3, I used the lived experiences of the Kenyan innovators I worked with to demonstrate some of the very real *limitations* Kenyans face in becoming technology entrepreneurs and gaining legitimacy as members of the GCTI, limitations which mean that *everyone everywhere* doesn't always have the same chance of success or access to membership in the GCTI. In the case of Kenyan innovators, some of those limitations came in the form of geography. Even in a global community in which many individuals travel frequently and pitches and ideas can be communicated online, sometimes face-to-face engagement is still necessary for gaining access to the full repertoire of practices necessary to gain expertise and membership in a community of practice, even a global one. For others, narratives also created barriers. Narratives about members' identity (like the Dominant Identity Narrative that often portrays the lone white male genius who drops out of university as the archetypal GCTI member) as well as broader narratives outside of the community (like Africa Rising or the Failed Continent Narratives) not only create a model for new members, but also create barriers for them, as these narratives can influence the expectations of gatekeepers like investors whose perceptions of what makes a successful entrepreneur are, often unconsciously, shaped by such narratives. Time and time again, I spoke with frustrated Kenyan entrepreneurs who believed that they were being pigeonholed by investors as "social" rather than "serious" entrepreneurs. And while many of them cared deeply about social issues like access to education or healthcare, their frustration came from the perception that they were not the ones setting the terms of what social impact was important or from the belief that they were somehow being treated differently from their entrepreneurial counterparts elsewhere in the world.

Moreover, my conversations with investors indicated that there is some basis for their concerns. Many investors in Kenya readily acknowledged that in choosing to come to Africa to look for startups, they were at least in part motivated by a desire to have a "social impact" and were looking for startups that could do so. And while this clearly comes from a well-meaning place and a desire to "do good", it is still an approach that sees Africa as a continent in need of help from the "more fortunate" outside, rather than a continent building and shaping its own technological future. Furthermore, while many investors I spoke with were well aware of the potential for racial power imbalances and worked very hard not to judge entrepreneurs based on skin tone or nationality, the most recent data indicates that the majority of startups based in Kenya that were successful at receiving investment from venture capitalists had at least one white foreigner involved in the management team, if not serving as the founder or CEO. Many investors, and even other members of Kenya's own Community of Technology Innovators (CTI), attribute this to other factors, including communication style during the pitches or to a lack of experience. Kenya's own CTI is indeed very young, but there are also not as many opportunities in it in which to gain experience in building a "serious" startup as there would be in London or Berlin. Part of this, I believe, is directly related to the self-selection of the investors who come to Kenya. As of the time of this writing, those looking for the niche kind of startup working on "social innovation" seemed to still be more likely to come to Kenya looking for investments than those not interested in social entrepreneurship. If other "serious" investors do not begin to see Africa as a place worth visiting for businesses beyond those in social fields like waste management or health, it will continue to be difficult for Kenyan entrepreneurs to gain access to the practices necessary and to build up the expertise necessary to become serious entrepreneurs and respected members of the GCTI. This is not to say that social entrepreneurship is a bad thing or investors looking for startups with a social impact are in and of themselves problematic, rather it is to say that it will be problematic if foreign social impact investors continue to dominate the

investment landscape in Kenya's CTI. More diverse investors from abroad, as well as the growth of a Kenyan and African investor pool could go some way to rectifying this.

Together, narratives in and around the GCTI reinforce pre-existing hierarchies of legitimacy within the community that disadvantage African innovators. As such, it is not impossible for Africans to gain legitimacy and become respected community members, but they do face roadblocks that should be further scrutinized.

In Chapter 4, I built on these findings and used my narratives-enriched communities of practice framework to analyze what happens when a discrepancy emerges between dominant community narratives like the Kenyans Can Narrative and the reality experienced by Kenyan innovators. In the case of the GCTI, when many Kenyans found membership in the GCTI and international legitimacy difficult to obtain and also found it difficult to shape community level practices in the GCTI, it is not surprising that many began to reorient towards Kenya's own CTI and gradually turned away from the global. At the national level, many found a community of practice in which they had greater influence and legitimacy, and in which they were better able to shape the terms of membership and the community's accepted practices.

The narrative/communities of practice framework also helps to understand how individuals and organizations in Kenya worked to shape the accepted practices in Kenya's CTI. In 2016, I believe that this national level community of practice was actively undergoing an important phase of re-negotiation and reconstruction. While in its early years, many of its innovation practices had mimicked those of Silicon Valley, by 2016 there was a movement to change the community's practices to better reflect the needs and values of the Kenyans in the community. In addition to choices made by individual members to reject practices like the pressure to scale globally, inflated valuations, and the fetishization of open-plan spaces, members of this movement endeavored to change practices at the community level by employing storytelling and narrative construction. By first using more subversive communication techniques like rumor and humor for telling counter-stories about exploitative practices in the community, they were eventually able to build on real world scandals like those at Angani and Ushahidi to construct counter-narratives about how sexual misconduct and discriminatory investment practices should be excluded from the community's repertoire of accepted practices. I also make the case that the development of these counter-narratives represents a movement to disentangle the Kenyan CTI from the Global Community and to generate a debate about how to practice technology innovation in Kenya in a way that is reflective of Kenyan needs and values and not just subject to the pressure to conform to existing global norms of practice.

Of all the members of Kenya's CTI, one of those that struggled the most during the narrative reconstruction of Kenya's CTI was the iHub. In fact, I would contend that it is impossible to fully understand the iHub's fate and its role in Kenya's CTI without the narrative/communities of practice framework.

As perhaps the entity that had played the most active part in shaping the narrative about Kenya as a "tech hub" of Africa, drawing international media attention and investor money, the iHub was in many ways intimately invested in Kenya's involvement in the GCTI. Acting as a gatekeeper for international members of the GCTI wishing to visit Kenya, the iHub also shaped which members and in turn the kinds of innovation practices Kenyans had access to; for many individual entrepreneurs, the iHub was also instrumental in helping them connect with investors and gain their own legitimacy in the GCTI. But with many of the iHub's most visible members having acted as storytellers reshaping the Anyone Anywhere Narrative for the Kenyan context, the iHub's reputation became closely linked with that narrative's fate. In the end, when that narrative came into question as many Kenyan entrepreneurs began to voice their frustrations with their experiences with international investors, the iHub's own reputation and legitimacy in Kenya's CTI also began to suffer. For many in Kenya, the iHub had become more interested in belonging to the GCTI than the Kenyan CTI, leading to the growth of counter-narratives about it being over-hyped, too elitist, and too international. Over the course of five years, the iHub went

from being a prominent shaper of the narratives about its own organization and about Kenya's CTI, to being overwhelmed by counter-narratives questioning its commitment to the local community and therefore its legitimacy within it. By bringing on new investors and a new CEO, implementing a new business model, and physically moving out of the Bishop Magua Centre, the iHub was symbolically re-exerting itself in this ongoing narrative debate. Given its connections to the GCTI, it is no wonder that it staked out a position in this debate in favor of moving the Kenyan community closer to the global one. But by the end of 2016, the iHub's power within Kenya's CTI and its ability to shape the community's narratives and its accepted practices had been greatly diminished.

Theoretical Contribution

I began this dissertation by taking a grounded theory approach and building a theoretical framework to explain the data that I collected during my ethnographic fieldwork at the iHub in Nairobi. I used Lave and Wenger's communities of practice theory (Lave & Wenger, 1991) and integrated narrative theory into it. In doing so, I hope to have 1) strengthened communities of practice theory by expanding upon one of its under-researched elements and 2) contributed to communications research by helping to theorize how narratives can influence legitimacy in international labor practices, and most importantly.

Communities of practice

Much of communities of practice research has frequently been criticized for misinterpreting the theory as prescriptive, believing that communities of practice could and ought to be created to help improve knowledge sharing and a sense of belonging among community members (Contu & Willmott, 2003; Henderson, 2015; Lave, 2008). But this instrumentalist approach, taking a community of practice as an *aspirational* entity to be fostered and encouraged rather than a previously existing social entity to be understood – ignored the richest, most analytically useful, parts of the original theory (Amin & Roberts, 2008; Contu & Willmott, 2003; Roberts, 2006). In particular, it overlooks the inherently conflictual nature of a community built around practice rather than around identity or geography. Instead, in building my own theoretical framework, I have attempted to return to the original analytical purpose of communities of practice theory, and have brought front and center the potential for conflict as well as the hierarchies of legitimacy and power embedded in work in a community of diverse participants.

In 2014, in an interview with Omidvar and Kislov, Wenger acknowledged some of the theoretical weaknesses of their framework and called for more empirical work with which to refine the theory (Omidvar & Kislov, 2014). By bringing rich empirical data from my research with Kenyan technology innovators in and around the iHub I hope to have helped to do so in this dissertation. By looking at a context that is both culturally different from many of the Western corporate contexts in which communities of practice theory has been applied, and by studying a community of practice that is far larger and more diverse than most of those previously studied, the inherent potential for conflict in communities of practice becomes difficult to ignore and allows for its role to be more fully theorized. For example, while practices in a community of practice may be set in place through a process of "joint-negotiation" among members as Wenger laid out (Wenger, 1998), I believe my research shows that not all members have an equal ability to participate in those negotiation. New members, particularly new members who do not fit the Dominant Identity Narrative or the historic mold of what a 'successful member' looks and sounds like may find it particularly difficult not only to participate in negotiations about the future of the community, but also to have a say over their own future role within it.

Some scholars have suggested that communities of practice theory has been applied to communities that are too broad, arguing that to stretch it beyond face-to-face communities

renders the theory useless (Henderson, 2015). However, I hope that I have shown in the preceding pages why I believe this perspective has become outdated, particularly in a community with a communicative ecology defined by rapid, even instantaneous exchange of information and knowledge. Money coming from investors in the United States helps an entrepreneur build a startup in Kenya while money withheld by an investor in the Netherlands may restrict the ability of a Nigerian startup to grow. Peer groups form online between coders in Europe and Hong Kong, startups built in Estonia expand into market in Africa leading to the creation of home grown startups to compete, and Indian programmers perform virtual work for software companies in Beijing and London. In this Global Community, it is not just ideas that travel rapidly, but money as well.

Those around the globe involved in the design and production of new technologies often work at the forefront of rapid changes in communication technologies that make the modern information economy possible. As such, they may be more interconnected than other practices around the world, but they are increasingly not alone. So many interactions around other practices like gaming, law, policymaking, and even knitting are increasingly conducted transnationally and online, while members often come to rely on one another through joint collaborations. While it may be too early to apply the communities of practice framework to the study of other globally interconnected practices, I believe it will likely soon become relevant. As such, there is a need for more research that helps theorize about how communities of practice behave, and what membership in them looks like, as they change and stretch around the globe. In particular, research looking more explicitly at the political, economic, or legal implications of these changes would further contribute to the strengthening of the theory in a global context, as well as research building on my own incorporating the role of narratives and storytelling.

The primary way in which I hope that the present study has helped to strengthen the relevance of communities of practice theory in a global context is through the integration of narrative theory. While there has been some excellent research conducted looking at the micro-level of communication in communities of practice, like jargon and accents, from linguistics scholars in particular (C. A. Cutler, 1999; B. Davies, 2005; Eckert, 1989), other aspects of the communicative ecologies of communities of practice have been under-theorized. Integrating narrative theory, and highlighting the role that individual stories and larger community narratives play, helps to enrich communities of practice theory by giving us a more complete picture of how such communities are formed, attract new members, change, and are challenged, how members' sense of meaning and legitimacy are constructed, and how both old and new members negotiate their legitimacy in multiple communities of practice simultaneously. Throughout this dissertation I have shown how narratives interact with communities of practice in the following ways: 1) Narratives, like the Anyone Anywhere Narrative, can encourage outsiders to join a community of practice by integrating new heroes, settings, and storytellers into the community's narratives; 2) a community's Dominant Identity Narratives can reinforce expectations about how members should behave or what they should look or sound like, becoming particularly problematic as communities grow and become more heterogeneous; 3) aspiring members, like the iHub, can skillfully use stories to shape a narrative identity for themselves that helps them to gain community legitimacy; 4) broader cultural narratives that seemingly have little to do with a community of practice, like the Africa Rising Narrative, can influence an individual's legitimacy within a community of practice; and 5) a community of practice and its narratives can be co-constructed, though there is often a hierarchy of power that influences who has more influence over this process.

Communications

It is also my hope that this dissertation has contributed theoretically to my home discipline of communications. Within communications, research looking at the role of storytelling and

narratives is extensive, spreading from the study of rhetoric (Fisher, 1984; Foss, 2017) and political communications (McComas & Shanahan, 1999; Mumby, 1993) to culture studies and global communications (Archetti, 2013; Kraidy & Murphy, 2008). In a global context, it has been used to examine connections among diaspora communities and how they retain a sense of connection and identity (Heyd, 2014; Hua, 2013; O'Neill, 2008), and in research looking at how dominant cultural ideas are transmitted through media (e.g. Schiller, 1976),[19] particular through particularly pervasive content like Hollywood films (Olson, 1999). And while there is a rich body of research looking at power imbalances in transnational labor (Irani et al., 2010; W. R. Poster, 2007; W. R. Poster & Prasad, 2005) I have found it to be rare for narrative theory to be incorporated into the study of transnational communities centered around practice rather than identity.

By bringing communities of practice theory into communications, I hope that my research has helped to provide some much-needed structure to theories about transnational communication among diverse participants working together. In particular, by conceptualizing transnational practices around technology innovation work as a *community of practice*, I believe that my theoretical framework can help communication scholars build new theories about why and how narratives from one corner of the globe can have such an impact elsewhere, and to foreground the power imbalances involved in how new narratives are constructed in an international non-geographically confined setting. Conceptualizing it as a community of practice may, for example, help researchers foreground the relationship between the power and influence of international narratives and the desire many people experience for membership and legitimacy in global communities of practice. Future research looking in greater detail at how particularly influential narratives are constructed and evolve in an international setting could help to further strengthen this area of research.

Global communications scholars looking specifically at Africa have done important work studying how problematic narratives like the Failed Continent Narrative and even the Africa Rising Narrative are created with their roots in historic colonial pathways, and how they can lead to the perpetuation of negative stereotypes (e.g. Bunce, Franks, & Paterson, 2016). For these researchers, my hope is that the integration of communities of practice theory may support future research looking at the implications of these narratives for African involvement in international labor. A critical interpretation of communities of practice theory helps to show not just how African workers are pigeonholed as a result of these dominant narratives, but also helps to foreground the very tangible implications of this in terms of their work, their ability to get funding, to build networks, and to be seen as legitimate, equally competent workers on an international stage.

Global practices and global engagement

Techno-visionary storytellers like Mark Zuckerberg, readily talk about how the technologies they're building are bringing the world closer together. Facebook's new manifesto, "Building Global Community", released in February 2017 is a perfect example of this (2017). Using particularly McLuhan-esque language, Zuckerberg writes in the manifesto about how "our greatest opportunities are now global" from "spreading prosperity and freedom" to "lifting people out of poverty, and accelerating science," and he positions Facebook decidedly on the side of bringing us closer together and building a global community" (Zuckerberg, 2017). In response to the nay-sayers leading "movements for withdrawing from global connection" (Zuckerberg, 2017), he acknowledges that more work needs to be done to answer questions like "whether we can make a global community that works for everyone, and whether the path ahead is to connect more

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[19] For an early example of this see Herbert Schiller's work, Communication and Cultural Domination

or reverse course" (Zuckerberg, 2017), though it is clear where he stands on this debate. Over the course of the manifesto he acknowledges that, "sitting here in California, we're not best positioned to identify the cultural norms around the world" (Zuckerberg, 2017). As a result, he recommends "a system where we can all contribute to setting the standards" and "a new process for citizens worldwide to participate in community governance" (Zuckerberg, 2017). In other words, he believes that building a more closely connected global community is necessary and that getting people in diverse parts of the world involved is an essential part of making that community more reflective of and responsive to the varied needs and values of people around the world.

Though Zuckerberg has yet to show how these new processes of community governance would happen in practice for his global community of everyone, I suggest that those involved in building startups around the world should first use that same argument to reflect on and assess the ways in which their own *communities of practice* are evolving or should be. In the stories of the future told by the techno-visionaries, anyone anywhere can build the latest technological advancements that can in turn be used anywhere in the world. But in practice, many of these 'peripheral' participants have little influence on the Global Community's practices and as a result can feel ostracized and disconnected from it. Consequently, many turn away and choose instead to focus more on constructing a national (or even a regional) community of practice that better reflects their values and in which they are better able to influence the terms of the joint enterprise around which participants are involved. But with how internationally connected I found placed like the iHub to be and with the expansion of internet access to even rural communities in Kenya, fully rejecting the GCTI may not be possible for Kenyan innovators. Even if the Kenyan government were to decide to ban all foreign investors and entrepreneurs from Kenya (not entirely out of the realm of possibility with the current level of disapproval of expat NGO workers in the country), and unless they took the extreme step of shutting down the internet or building virtual firewalls in the manner of the Chinese, the intractable nature of the hyper-connected communicative ecology around the practice would ensure that ideas, values, and practices, would continue to flow from abroad into Kenya and back out again. I believe that if the practice of designing and building new technologies is really globalizing, then it is crucial for those involved to pay attention to the diverse experiences of African innovators like Faith and Sam and Paul in Chapter 3 and to learn from the complex processes of negotiating meaning and acceptable practices through the construction of narratives and counter-narratives that has been taking place in national-level innovation communities like the one in Kenya.

In an endeavor to continue to foreground the lived experiences and perspectives of the Kenyan innovators that I worked with, I want to draw this dissertation to a close with a quote from one freelancer and blogger I came to know quite well during my time in Nairobi. In it, I believe he conveys better than I could the fundamental ways in which the complex array of transnational connections, overlapping practices, storytelling, and community memberships are shaping the ways in which Kenyan innovators are conceptualizing and constructing their own technological futures.

> The representation of Africa is something that matters to me. I kind of feel…if you ask me right now, one of the biggest challenges is the issue of pride and confidence and identity. For me, once people figure that out, I think most of the things people think are problems won't really be problems anymore. Social media did that. There's a lot of conversations happening across borders between African nations. It's easier now to work with somebody you've never met in Botswana. I know more about what happens in other countries. Right now, Africans are more comfortable with their countries, with who they are and where they come from, but not with how things *are*. That makes them believe more in themselves. People are building

stuff, having conversations and collaborations. So, for me, of course if those things work, then it's good, it's great. But for me, the fact that people are *believing* in themselves to do it, that's what matters. Maybe I think this because of the space I am in where people are starting to see building startups as an option. But I believe the tech sector has played a role in creating the confidence.

BIBLIOGRAPHY

A.A. (2018). What Is A.A.? [Organization]. Retrieved March 17, 2018, from
       https://www.aa.org/pages/en_US/what-is-aa

Acumen. (2017, October 20). Acumen [Company]. Retrieved October 20, 2017, from
       https://acumen.org/

Adegbola, O., Skarda-Mitchell, J., & Gearhart, S. (2018). Everything's negative about Nigeria: A
       study of US media reporting on Nigeria. *Global Media and Communication*,
       1742766518760086.

Africa Business Report. (2010, August 20). Kenya looks to technology-based future. Retrieved
       March 20, 2018, from http://www.bbc.com/news/av/business-11037013/kenya-prepares-
       the-way-for-a-technology-based-future

Agmon, T., & Sjögre, S. (2016). The Future of VC Funds: The Effects of Technology and
       Globalization. In *Venture Capital and the Inventive Process* (pp. 107–113). Springer.

Agutu, N. (2016, April 6). Kenyans 4th most active Twitter users in Africa, politics among hot
       topics. *The Star, Kenya*. Retrieved from http://www.the-
       star.co.ke/news/2016/04/06/kenyans-4th-most-active-twitter-users-in-africa-politics-
       among-hot_c1326926

ahntify. (2016, June 29). How to Write About Tech in Kenya...and Africa. Retrieved October 20,
       2017, from http://ahntify.com/how-to-write-about-tech-in-kenya-and-africa/

Al, U., Erdogan, P. L., Tonta, Y., & Ucak, N. (2010). *Technological Convergence and Social
       Networks in Information Management*. Springer. Retrieved from
       http://link.springer.com/content/pdf/10.1007/978-3-642-16032-5.pdf

Amin, A., & Roberts, J. (2008). Knowing in action: Beyond communities of practice. *Research
       Policy*, *37*(2), 353–369.

Analo, T. (2015, September 2). Is Nairobi no longer the innovation hub of Africa? - The East
       African. *The EastAfrican*. Retrieved from http://www.theeastafrican.co.ke/news/Is-
       Nairobi-no-longer-the-innovation-hub-of-Africa/2558-2854354-ungimv/index.html

Anderson, B. (2006). *Imagined communities: Reflections on the origin and spread of nationalism*.
       Verso Books.

Anderson, J., & Rainie, L. (2012). Millennials will benefit and suffer due to their hyperconnected
       lives. *Washington DC, Pew Research Center*, 18–19.

Anderson, K. (2009, August 19). All the fun of the technology fair. *The Guardian*. Retrieved
       from https://www.theguardian.com/technology/2009/aug/19/africa-technology-maker-
       faire-conference

Aneesh, A. (2006). *Virtual migration: The programming of globalization*. Duke University Press.
       Retrieved from
       https://books.google.com/books?hl=en&lr=&id=aGoqsWfCXO8C&oi=fnd&pg=PA1&d
       q=aneesh+virtual+migration&ots=58CoYjKLir&sig=pDGJpwVpTd5kaNRfXouH99lEO
       yU

Appadurai, A. (1996). *Modernity at large: cultural dimensions of globalization*. Minneapolis,
       Minn: University of Minnesota Press.

Archetti, C. (2013). Narrative wars: understanding terrorism in the era of global
       interconnectedness. *Forging the World: Strategic Narratives and International Relations*.

Ardichvili, A., Maurer, M., Li, W., Wentling, T., & Stuedemann, R. (2006). Cultural influences
       on knowledge sharing through online communities of practice. *Journal of Knowledge
       Management*, *10*(1), 94–107.

Arieff, A. (2016, July 9). Opinion | Solving All the Wrong Problems. *The New York Times*.
       Retrieved from https://www.nytimes.com/2016/07/10/opinion/sunday/solving-all-the-
       wrong-problems.html

Aronson, E., & Mills, J. (1959). The effect of severity of initiation on liking for a group. *The Journal of Abnormal and Social Psychology*, *59*(2), 177.

Ashe, M. (1988). Zig-Zag stitching and the seamless web: Thoughts on reproduction and the law. *Nova L. Rev.*, *13*, 355.

Avle, S. (2011). Global flows, media and developing democracies: The Ghanaian case. *Journal of African Media Studies*, *3*(1), 7–23.

Avle, S. A. (2014). *Media, Technology, and the Global Technoclass: Case studies from Ghana*. University of Michigan. Retrieved from http://deepblue.lib.umich.edu/handle/2027.42/110431

Avnimelech, G., & Teubal, M. (2006). Creating venture capital industries that co-evolve with high tech: Insights from an extended industry life cycle perspective of the Israeli experience. *Research Policy*, *35*(10), 1477–1498.

Back, M. (2011). Legitimate peripheral participation and language learning: Two Quichua learners in a transnational community. *Language Learning*, *61*(4), 1039–1057.

Balsamo, A. (2011). *Designing culture: The technological imagination at work*. Duke University Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=_BsQudpHXn4C&oi=fnd&pg=PR5&dq =blasamo+designing+culture&ots=AqIh45-gIy&sig=U61jYZV6CgFYhYf9Ta4MIdjwryI

Barberá, P., Jost, J. T., Nagler, J., Tucker, J. A., & Bonneau, R. (2015). Tweeting from left to right: Is online political communication more than an echo chamber? *Psychological Science*, *26*(10), 1531–1542.

Batchelor, K. E. (2012). In a flash: The digital age's influence over literacy. *Cult Pop Culture: From the Fringe to the Mainstream*, 77–88.

Bell, G. (2006). No more SMS from Jesus: ubicomp, religion and techno-spiritual practices. In *International Conference on Ubiquitous Computing* (pp. 141–158). Springer.

Bennett, J. (2017, September 8). Ellen Pao Is Not Done Fighting. *The New York Times*. Retrieved from https://www.nytimes.com/2017/09/08/style/ellen-pao-gender-discrimination-silicon-valley-reset.html

Berger, P. L., & Luckmann, T. (1991). *The social construction of reality: A treatise in the sociology of knowledge*. Penguin Uk.

Bernal, V. (2013). Please forget democracy and justice: Eritrean politics and the powers of humor. *American Ethnologist*, *40*(2), 300–309.

Bhorat, H., Kharas, H., & Pita, A. (2017, November 22). Africa's expanding middle class. Retrieved March 18, 2018, from https://www.brookings.edu/podcast-episode/africas-expanding-middle-class/

Bijker, W. E., Hughes, T. P., & Pinch, T. (1987). *The social construction of technological systems: New directions in the sociology and history of technology*. MIT press. Retrieved from https://books.google.com/books?hl=en&lr=&id=B_Tas3u48f8C&oi=fnd&pg=PR5&dq= bijker+social+construction+of+technology+systems&ots=VsmzPyzOnZ&sig=kfCWgQ-XEZguMhQC8vvzFPbvRyk

Bondebjerg, I. (2016). Transnational Europe: TV-drama, co-production networks and mediated cultural encounters. *Palgrave Communications*, *2*, 16034.

Bradford, C. (2007). *Unsettling narratives: postcolonial readings of children's literature*. Wilfrid Laurier Univ. Press.

Bram, U. (2015, August 5). Why your internet connection is slow wherever you are in Africa [News]. Retrieved March 19, 2018, from https://qz.com/472028/why-your-internet-connection-is-slow-wherever-you-are-in-africa/

Bright, J. (2013, January 25). App-rica Kenya's mobile-phone revolution. *Newsweek Global*.

Bright, J. (2016, September 3). Mark Zuckerberg's Africa tour tracks tech's growing interests on the continent. Retrieved October 11, 2016, from http://social.techcrunch.com/2016/09/03/1379717/

Bright, J., & Hruby, A. (2015, July 23). The rise of Silicon Savannah And Africa's Tech Movement. *Tech Crunch*. Retrieved from http://techcrunch.com/2015/07/23/the-rise-of-silicon-savannah-and-africas-tech-movement/

Broussard, M. (2015, July 8). What Good Is a Hackathon, Really? - The Atlantic. *The Atlantic*. Retrieved from https://www.theatlantic.com/technology/archive/2015/07/the-secret-lives-of-hackathon-junkies/397895/

Bruner, J. (1991). The narrative construction of reality. *Critical Inquiry*, *18*(1), 1–21.

Brunner, E. (2014). Asking (new) media questions: Thinking beyond the Twitter revolution. *Explorations in Media Ecology*, *13*(3–4), 269–283.

Bucholtz, M. (1999). "Why be normal?": Language and identity practices in a community of nerd girls. *Language in Society*, *28*(2), 203–223.

Bunce, Mel. (2015). International news and the image of Africa: new storytellers, new narratives. *Images of Africa: Creation, Negotiation and Subversion*, 42–62.

Bunce, Melanie, Franks, S., & Paterson, C. (2016). *Africa's Media Image in the 21st Century: From the" Heart of Darkness" to" Africa Rising"*. Routledge.

BuniMedia. (2018). The XYZ Show | Bunimedia. Retrieved March 20, 2018, from http://bunimedia.com/portfolio/the-xyz-show/

Burg, N. (2014, January 30). CitiVoice: Meet The Tech Entrepreneur Bringing The Digital Revolution To Africa. *Forbes*. Retrieved from https://www.forbes.com/sites/citi/2014/01/30/meet-the-tech-entrepreneur-bringing-the-digital-revolution-to-africa/#56d847026aa0

Burrell, J. (2009). The Field Site as a Network: A Strategy for Locating Ethnographic Research. *Field Methods*, *21*(2), 181–199. https://doi.org/10.1177/1525822X08329699

Burrell, Jenna. (2012). *Invisible users: Youth in the Internet cafés of urban Ghana*. Mit Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=dPfn7O2RRbcC&oi=fnd&pg=PR7&dq=burrell+invisible+users&ots=Ws6f_GO0Nk&sig=Z9Sa5RmqbuXGSeKwFeYHIs91g8o

Buss, A. H., & Portnoy, N. W. (1967). Pain tolerance and group identification. *Journal of Personality and Social Psychology*, *6*(1), 106.

Cain, C. (1991). Personal Stories: Identity acquisition and self-understanding in Alcoholics Anonymous. *Ethos*, *19*(2), 210–253.

Campbell, J. (2015, November 4). Kenya's Silicon Savannah Spurs Tech in Sub-Saharan Africa. Retrieved March 9, 2018, from https://www.cfr.org/blog/kenyas-silicon-savannah-spurs-tech-sub-saharan-africa

Candea, M. (2007). Arbitrary locations: in defence of the bounded field-site. *Journal of the Royal Anthropological Institute*, *13*(1), 167–184.

Carew, R. (2015, April 1). Chinese Taxi-Hailing App's Valuation Soars to $8.75 Billion. *Wall Street Journal*. Retrieved from http://www.wsj.com/articles/valuation-rises-for-chinese-taxi-hailing-app-didi-dache-kuaidi-dache-1427807299

Carnwath, A. (2012, August 25). New Africa: the Kenyan internet nerd reshaping a nation | Technology | The Guardian. *The Guardian*. Retrieved from https://www.theguardian.com/technology/2012/aug/26/new-africa-kenya-activist-internet

Carruthers, S. L. (2004). Media constructions of "African savagery" and "Western humanitarianism" in the 1990s. *Reporting War: Journalism in Wartime*, 155.

Carsten, P. (2016, August 11). Didi's Cheng Wei: Chinese patriot who tamed Uber. *Reuters*. Retrieved from https://www.reuters.com/article/us-uber-china-m-a-didichuxing-cheng/didis-cheng-wei-chinese-patriot-who-tamed-uber-idUSKCN10M2LS

Cayla, J., & Eckhardt, G. M. (2008). Asian brands and the shaping of a transnational imagined community. *Journal of Consumer Research*, *35*(2), 216–230.

CB Insights. (2017a). The Complete List of Unicorn Companies. Retrieved June 1, 2017, from http://instapage.cbinsights.com/research-unicorn-companies

CB Insights. (2017b, September 19). The International Unicorn Club: 106 Private Companies Outside The US Valued At $1B+. Retrieved March 9, 2018, from /research/startup-unicorns-international-map/

CB Insights. (2018). The Complete List of Unicorn Companies. Retrieved March 9, 2018, from http://instapage.cbinsights.com/research-unicorn-companies

Chan, A. S. (2014). *Networking Peripheries: Technological Futures and the Myth of Digital Universalism*. MIT Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=0c_MAgAAQBAJ&oi=fnd&pg=PR7&dq=Anita+Chan+%E2%80%9CNetworking+Peripheries%E2%80%9D&ots=aiyoHzN0sg&sig=VBerzVkY_6KOnLAg899pa2TjrN0

Charmaz, K., & Belgrave, L. L. (2007). Grounded theory. *The Blackwell Encyclopedia of Sociology*.

Chokkattu, J., & Crook, J. (2014, August 14). A Brief History Of Uber | TechCrunch [News]. Retrieved March 13, 2018, from https://techcrunch.com/gallery/a-brief-history-of-uber/

Chonghaile, C. N. (2012, October 22). Kenya's techies take on mission impossible: ending Nairobi's traffic anarchy. Retrieved March 20, 2018, from http://www.theguardian.com/world/2012/oct/22/nairobi-smart-traffic-light-congestion

Clarke, D., Partridge, L., & Petersen, L. (2017). Using Technology to Build Engagement in a Global Scholarship of Teaching and Learning (SoTL) Community of Practice. In *Implementing Communities of Practice in Higher Education* (pp. 81–106). Springer.

Clemente, D. (2017, May 22). Why American Workers Now Dress So Casually. *The Atlantic*. Retrieved from https://www.theatlantic.com/business/archive/2017/05/history-of-business-casual/526014/

Clifford, J., & Marcus, G. E. (1986). *Writing culture: The poetics and politics of ethnography*. Univ of California Press.

Coffey, A. (1999). *The ethnographic self: Fieldwork and the representation of identity*. Sage.

Cohan, P. (2013, June 11). Four Reasons Google Bought Waze. *Forbes*. Retrieved from https://www.forbes.com/sites/petercohan/2013/06/11/four-reasons-for-google-to-buy-waze/#5db637b0726f

Coleman, G. (2014). *Hacker, hoaxer, whistleblower, spy: The many faces of anonymous*. Verso Books. Retrieved from https://books.google.com/books?hl=en&lr=&id=9MpNBAAAQBAJ&oi=fnd&pg=PT19&dq=hackers,+hoaxers,+whistleblowers,+spy&ots=foiAPJbhHK&sig=MaV2dRGvO7gcYfcZjbBlRyChgZ4

Coleman, S. (1996). Words as things language, aesthetics and the objectification of protestant evangelicalism. *Journal of Material Culture*, *1*(1), 107–128.

Collins, K. (2016, October 12). Programmers really hate open floor plans [News]. Retrieved March 19, 2018, from https://qz.com/806583/programmers-hate-open-floor-plans/

Comaroff, J., & Comaroff, J. L. (2001). *Millennial capitalism and the culture of neoliberalism*. Duke University Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=MiPCsn2nRGsC&oi=fnd&pg=PA1&dq=comaroff+millennial+capitalism&ots=OZZoVPhWsh&sig=81K0Eftsv0eBtpqL12W3mJORHUA

Comaroff, J., & Comaroff, J. L. (2002). Alien-nation: zombies, immigrants, and millennial capitalism. *The South Atlantic Quarterly*, *101*(4), 779–805.

Communications Authority of Kenya. (2017). *First Quarter Sector Statistics Report for the Financial Year 2017-2018 (July - September 2017)*. Communications Authority of

Kenya. Retrieved from http://www.ca.go.ke/images/downloads/STATISTICS/Sector%20Statistics%20Report%20Q1%20%202017-18.pdf

Contu, A., & Willmott, H. (2003). Re-embedding situatedness: The importance of power relations in learning theory. *Organization Science*, *14*(3), 283–296.

Cossou, E. (2011, May 23). Kenya to lead technology revolution [News]. Retrieved March 18, 2018, from http://www.bbc.com/news/av/business-13503220/kenya-to-lead-technology-revolution

Court, A. (2015, February 10). What makes Nairobi Africa's "most intelligent" city. Retrieved March 9, 2018, from https://www.cnn.com/2015/02/10/africa/nairobi-africa-intelligent-city/index.html

Cremades, A. (2016). *The art of startup fundraising: pitching investors, negotiating the deal, and everything else entrepreneurs need to know*. John Wiley & Sons.

Cutler, C. A. (1999). Yorkville crossing: White teens, hip hop and African American English. *Journal of Sociolinguistics*, *3*(4), 428–442.

Cutler, K.-M. (2014, January 4). Silicon Valley Lost, And Found. Retrieved March 28, 2017, from http://social.techcrunch.com/2014/01/04/silicon-valley-lost-and-found/

Dahlberg, L. (2001). The Internet and democratic discourse: Exploring the prospects of online deliberative forums extending the public sphere. *Information, Communication & Society*, *4*(4), 615–633.

Davenport, T. H., & Beck, J. C. (2001). *The attention economy: Understanding the new currency of business*. Harvard Business Press.

Davies, B. (2005). Communities of practice: Legitimacy not choice. *Journal of Sociolinguistics*, *9*(4), 557–581.

Davies, C. A. (2008). *Reflexive ethnography: A guide to researching selves and others*. Routledge.

Davison, R. M., Ou, C. X., Martinsons, M. G., Zhao, A. Y., & Du, R. (2014). The communicative ecology of Web 2.0 at work: Social networking in the workspace. *Journal of the Association for Information Science and Technology*, *65*(10), 2035–2047.

De Kock, L. (1993). Civilising barbarians: missionary narrative and African textual response in nineteenth-century South Africa.

De Reu, M. (2017, October). How to fix your sucky startup storytelling [News]. Retrieved March 9, 2018, from https://thenextweb.com/contributors/2017/09/30/fix-sucky-startup-storytelling/

Deahl, D. (2018, March 7). Oculus Rift headsets have stopped working because of an expired certificate. *The Verge*. Retrieved from https://www.theverge.com/2018/3/7/17092084/oculus-rift-headsets-stopped-working-expired-certificate

Delgado, R. (1989). Storytelling for oppositionists and others: A plea for narrative. *Michigan Law Review*, *87*(8), 2411–2441.

Demers, E. A., & Yemen, G. (2015). Introduction to Consolidation Accounting: Google's Acquisition of Waze.

Dimond, J. P., Dye, M., LaRose, D., & Bruckman, A. S. (2013). Hollaback!: the role of storytelling online in a social movement organization. In *Proceedings of the 2013 conference on Computer supported cooperative work* (pp. 477–490). ACM.

Dolby, N., & Cornbleth, C. (2001). Social identities in transnational times. *Discourse: Studies in the Cultural Politics of Education*, *22*(3), 293–296.

Donkin, C. (2017, January 25). M-Pesa continues to dominate Kenyan market. Retrieved March 18, 2018, from https://www.mobileworldlive.com/money/analysis-money/m-pesa-continues-to-dominate-kenyan-market/

Dorian, N. C. (1982). Defining the Speech Community. *Sociolinguistic Variation in Speech Communities*, 25–33.

Du Boucher, V. (2016, August 5). A few things we learned about tech hubs in Africa and Asia | Mobile for Development [Crporate blog]. Retrieved March 9, 2018, from https://www.gsma.com/mobilefordevelopment/programme/ecosystem-accelerator/things-learned-tech-hubs-africa-asia

Duale, A. The Information Communication Technology Practitioners Bill, 2016, Pub. L. No. 18 (2016). Retrieved from http://kenyalaw.org/kl/fileadmin/pdfdownloads/bills/2016/InformationCommunicationTechnologyPractitioners_Bill_2016.pdf

Duarte. (2012). *Erik Hersman Interview with Michael Duarte*. Duarte. Retrieved from http://www.duarte.com/blog/interview-erik-hersman-ted-fellow-founder-of-ihub/

Duneier, M., & Carter, O. (1999). *Sidewalk*. Macmillan. Retrieved from https://books.google.com/books?hl=en&lr=&id=CCN-17p__eUC&oi=fnd&pg=PP3&dq=sidewalk&ots=Jyfdd7Zaj1&sig=fMMqYoVjYoZZdIOL5uU-pVjwTqo

Eckert, P. (1989). *Jocks and burnouts: Social categories and identity in the high school*. Teachers College Press.

Elliott, A. B. (2018). Internet medievalism and the White Middle Ages. *History Compass*.

Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing ethnographic fieldnotes*. University of Chicago Press.

English-Lueck, J. A. (2002). *Cultures@ Silicon Valley*. Stanford University Press Stanford, CA. Retrieved from http://ww.svcp.org/pdfs/Cultures%20at%20Silicon%20Valley%20introduction.pdf

Evans, M., & Handley, A. (2015). *Storytelling for Startups: How Fast-Growing Companies Can Embrace the Power of Story-Driven Marketing* (1 edition). Mark Evans.

Facebook. (2018). Frequently Asked Questions [Company]. Retrieved March 15, 2018, from https://investor.fb.com/resources/default.aspx

Fair, J. E. (1993). War, famine, and poverty: Race in the construction of Africa's media image. *Journal of Communication Inquiry*, *17*(2), 5–22.

Fanon, F. (1965). *The wretched of the earth* (Vol. 390). Grove Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=ZcSaJteZwA0C&oi=fnd&pg=PA5&dq=the+wretched+of+the+earth&ots=ZhdlGfHrfs&sig=R2aNRcnpIC4Yez8HXBlx714cesY

Feenberg, A. (1991). Critical theory of technology. Retrieved from http://philpapers.org/rec/FEECTO

Feld, B. (2012). *Startup communities: Building an entrepreneurial ecosystem in your city*. John Wiley & Sons.

Fengler, W. (2012, July 16). How Kenya became a world leader for mobile money [Text]. Retrieved March 18, 2018, from http://blogs.worldbank.org/africacan/how-kenya-became-a-world-leader-for-mobile-money

Ferguson, J. (2006). *Global shadows: Africa in the neoliberal world order*. Duke University Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=qJUUA_MwMA4C&oi=fnd&pg=PP9&dq=global+shadows&ots=owD8K818o7&sig=cYASDpWHji6URszxKfczPKtZVvc

Fildes, J. (2010, December 2). Kenya's hi-tech ambitions. *BBC News*. Retrieved from http://www.bbc.com/news/technology-11880594

Fisher, W. R. (1984). Narration as a human communication paradigm: The case of public moral argument. *Communications Monographs*, *51*(1), 1–22.

Foley, D. E. (2002). Critical ethnography: The reflexive turn. *International Journal of Qualitative Studies in Education*, *15*(4), 469–490.

Forbes. (2018, March 17). Cheng Wei. *Forbes*. Retrieved from
  https://www.forbes.com/profile/cheng-wei/

Foss, S. K. (2017). *Rhetorical criticism: Exploration and practice*. Waveland Press.

Foster, C., & Heeks, R. (2013). Conceptualising inclusive innovation: Modifying systems of
  innovation frameworks to understand diffusion of new technology to low-income
  consumers. *European Journal of Development Research*, *25*(3), 333–355.

Frankel, T. C. (2015, November 30). What these photos of Facebook's new headquarters say
  about the future of work. *Washington Post*. Retrieved from
  https://www.washingtonpost.com/news/the-switch/wp/2015/11/30/what-these-photos-of-
  facebooks-new-headquarters-say-about-the-future-of-work/

Freund, S. (2016, August 15). A Short History Of Uber In China: Was It A Failure? Retrieved
  March 17, 2018, from https://www.forbes.com/sites/shlomofreund/2016/08/15/a-short-
  history-of-uber-in-china-was-it-a-failure/

Friederici, N. (2016). *Innovation hubs in Africa: Assemblers of technology entrepreneurs* (PhD
  Thesis).

Friederici, N., Ojanperä, S., & Graham, M. (2017). The impact of connectivity in Africa: Grand
  visions and the mirage of inclusive digital development. *The Electronic Journal of
  Information Systems in Developing Countries*, *79*(1), 1–20.

Gallo, C. (2015, October 8). Steve Jobs: The World's Greatest Business Storyteller. *Forbes*.
  Retrieved from https://www.forbes.com/sites/carminegallo/2015/10/08/steve-jobs-the-
  worlds-greatest-business-storyteller/

Gapusan, J. (2017, November 20). The Hackathon is Over. Now What? Retrieved March 19,
  2018, from https://hypepotamus.com/community/hackathon-over-now-what/

Geertz, C. (1973). Thick description: Toward an interpretive theory of culture. *Readings in the
  Philosophy of Social Science*, 213–231.

Gieryn, T. F. (1994). *Shaping technology/building society: Studies in sociotechnical change*.
  JSTOR.

Giggs, B. (2011, October 6). Steve Jobs praised as Apple's visionary, creative genius [News].
  Retrieved March 15, 2018, from https://www.cnn.com/2011/10/06/us/obit-steve-
  jobs/index.html

Gillespie, T. (2014). The relevance of algorithms. *Media Technologies: Essays on
  Communication, Materiality, and Society*, *167*.

Golomb, V. (2018). *Accelerated Startup: Everything You Need to Know to Make Your Startup
  Dreams Come True From Idea to Product to Company*. (H. J. Kamps, Ed.) (1st edition).
  Time Traveller, Inc.

Gondwana Collection Namibia. (2018). *Trump - "S**thole Countries" - shithole statement by
  Namibia*. Retrieved from https://www.youtube.com/watch?v=XCz66YlNbPQ

Goodwin, I., Griffin, C., Lyons, A., McCreanor, T., & Moewaka Barnes, H. (2016). Precarious
  popularity: Facebook drinking photos, the attention economy, and the regime of the
  branded self. *Social Media+ Society*, *2*(1), 2056305116628889.

Goody, J. (1980). *Technology, tradition, and the state in Africa*. CUP Archive. Retrieved from
  https://books.google.com/books?hl=en&lr=&id=3D84AAAAIAAJ&oi=fnd&pg=PP10&
  dq=technology+africa+goodey&ots=5AZtmIodfX&sig=R87J6lNoyYnzbYeUNonBCkvy
  37A

Google for Entrepreneurs. (2012). *Introducing Google for Entrepreneurs*. Retrieved from
  https://www.youtube.com/watch?v=NcXiF4DZ8Hg&feature=youtu.be

Gorbis, M. (2015, July 22). Innovation Is Happening Faster Than We Can Adapt. *The New York
  Times*. Retrieved from https://www.nytimes.com/roomfordebate/2015/07/22/is-silicon-
  valley-saving-the-world-or-just-making-money/innovation-is-happening-faster-than-we-
  can-adapt

Green, J. (2016, February 9). Kenyan startup Ma3route: one to watch | Startups | Techworld. Retrieved March 19, 2018, from https://www.techworld.com/startups/kenyan-startup-ma3route-one-watch-3634759/

Grunwald, A. (2018). The Spreading of Techno-visionary Futures. In *Diffusive Spreading in Nature, Technology and Society* (pp. 295–309). Springer.

GSMA. (2014). *Digital Entrepreneurship in Kenya, 2014*. GSMA, USAID, Omidyar Network. Retrieved from https://www.gsma.com/mobilefordevelopment/programme/ecosystem-accelerator/digital-entrepreneurship-in-kenya-2014-2/

Gumperz, J. J. (1997). On the interactional bases of speech community membership. *AMSTERDAM STUDIES IN THE THEORY AND HISTORY OF LINGUISTIC SCIENCE SERIES 4*, 183–206.

Haemmig, M. (2003). The globalization of venture capital. In *Private Equity Investments* (pp. 67–88). Springer.

Haines, J. K. (2014). Accelerating Cultural Capital: Reproducing Silicon Valley Culture in Global Ecosystems. In *Proceedings of the 5th ACM International Conference on Collaboration Across Boundaries: Culture, Distance & Technology* (pp. 3–3). New York, NY, USA: ACM. https://doi.org/10.1145/2631488.2631489

Harrison, G. (2013). *Neoliberal Africa: The impact of global social engineering.* Zed Books Ltd.

Hartmans, A., & McAlone, N. (2016, August 1). The history of Uber - Business Insider. Retrieved March 13, 2018, from http://www.businessinsider.com/ubers-history

Harvey, D. (2000). *Spaces of hope* (Vol. 7). Univ of California Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=W00VHZg3u2MC&oi=fnd&pg=PR7&dq=david+harvey+spaces+of+hope&ots=7TkoQIJKx5&sig=rQyoAr2-RVwHt1VTVfjWS-EPmTI

Heeks, R., & Seo-Zindy, R. (2013). ICTs and Social Movements under Authoritarian Regimes: An Actor-Network Perspective. In *UKAIS* (p. 14). Retrieved from https://pdfs.semanticscholar.org/7a05/0eeb6ffa9a786f756f4e0bc3a50b9b859626.pdf

Helland, C. (2007). Diaspora on the electronic frontier: Developing virtual connections with sacred homelands. *Journal of Computer-Mediated Communication*, *12*(3), 956–976.

Henderson, M. (2015). The (mis) use of community of practice: delusion, confusion, and instrumentalism in educational technology research. In *Critical perspectives on technology and education* (pp. 127–140). Springer.

Henman, L. D. (2001). *Humor as a coping mechanism: Lessons from POWs*. Walter de Gruyter.

Henry, E. Y., Dana, L.-P., & Murphy, P. J. (2018). Telling their own stories: Māori entrepreneurship in the mainstream screen industry. *Entrepreneurship & Regional Development*, *30*(1–2), 118–145. https://doi.org/10.1080/08985626.2017.1388445

Herman, D. (2011). *Basic elements of narrative*. John Wiley & Sons. Retrieved from https://books.google.com/books?hl=en&lr=&id=HrAqO8phLCkC&oi=fnd&pg=PT8&dq=Basic+Elements+of+Narrative&ots=nSAZs-fjeo&sig=NGR9FGBEb1mWZCDREXxHrzMmCRI

Hersman. (2015, November 23). Startup Governance in Silicon Savannah. Retrieved March 19, 2018, from http://whiteafrican.com/2015/11/23/startup-governance-in-silicon-savannah/

Hersman, E. (2011, November 3). iHub, One Year Later | *iHub_ [Corporate blog]. Retrieved March 21, 2018, from https://web.archive.org/web/20120514183307/http://www.ihub.co.ke/blog/2011/03/ihub-one-year-later/

Hersman, E. (2013, October 15). 3.5 years later, what has the iHub done? | WhiteAfrican [Blog]. Retrieved March 21, 2018, from http://whiteafrican.com/2013/10/15/3-5-years-later-what-the-ihub-has-done/

Hersman, E. (2016, March 11). iHub: The Next Chapter [Corporate blog]. Retrieved March 21, 2018, from https://ihub.co.ke/blogs/26994/ihub-the-next-chapter

Heyd, T. (2014). Doing race and ethnicity in a digital community: Lexical labels and narratives of belonging in a Nigerian web forum. *Discourse, Context & Media*, *4*, 38–47.

Higbey, T. (2013, July 1). (2) Tomas Higbey's answer to What are the best stories about people randomly (or non-randomly) meeting Steve Jobs? - Quora [Discussion Forum]. Retrieved March 14, 2018, from https://www.quora.com/What-are-the-best-stories-about-people-randomly-or-non-randomly-meeting-Steve-Jobs/answer/Tomas-Higbey

Himbara, D. (1994). *Kenyan capitalists, the state, and development*. East African Publishers. Retrieved from https://books.google.com/books?hl=en&lr=&id=iWJKVgTa_r4C&oi=fnd&pg=PR7&dq=Kenyan+Capitalists,+the+State+and+Development.%22&ots=KiMNaFafNC&sig=Q6lmYgwqemRpfMCO6BvC6FwchMc

Hinchliffe, Emma. (2017, August 16). Team of rivals: The startups Uber competes against around the world. *Mashable*. Retrieved from https://mashable.com/2017/08/16/uber-global-rivals-didi/#MDvSE9BePgqS

Horwitz, J. (2017, August 8). Uber has expanded to the Middle East. *Quartz*. Retrieved from https://qz.com/1048802/with-its-investment-in-careem-didi-chuxings-proxy-war-with-uber-has-expanded-to-the-middle-east/

Howard, C. (2017). Forbes 30 Under 30. Retrieved May 30, 2017, from https://www.forbes.com/30-under-30-2016/#61804093afbd

Hua, A. (2013). Black diaspora feminism and writing: memories, storytelling, and the narrative world as sites of resistance. *African and Black Diaspora: An International Journal*, *6*(1), 30–42.

Huang, L., Frideger, M., & Pearce, J. L. (2013). Political skill: Explaining the effects of nonnative accent on managerial hiring and entrepreneurial investment decisions. *Journal of Applied Psychology*, *98*(6), 1005.

Hughes, K. (2014). 'Work/place'media: Locating laboring audiences. *Media, Culture & Society*, *36*(5), 644–660.

Humphreys, K. (2000). Community narratives and personal stories in Alcoholics Anonymous. *Journal of Community Psychology*, *28*(5), 495–506.

iAfrikan. (2015, November 23). Evidence Suggests Erik Hersman & Riyaz Bachani Orchestrated The Ousting Of Angani Founders. Retrieved March 19, 2018, from https://www.iafrikan.com/2015/11/23/angani-saga-2015/

iHub. (2011, January 7). *iHub_ Nairobi [Internet archive]. Retrieved March 9, 2018, from https://web.archive.org/web/20110107035034/http://www.ihub.co.ke:80/pages/home.php#close

Irani, L. (2015). Hackathons and the Making of Entrepreneurial Citizenship. *Science, Technology, & Human Values*, *40*(5), 799–824. https://doi.org/10.1177/0162243915578486

Irani, L., Vertesi, J., Dourish, P., Philip, K., & Grinter, R. E. (2010). Postcolonial computing: a lens on design and development. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1311–1320). ACM.

Jackson Jr, J. L. (2010). On ethnographic sincerity. *Current Anthropology*, *51*(S2), S279–S287.

Jackson, T. (2014, December 18). Total investment in African startups more than doubles in 2014. Retrieved March 9, 2018, from http://disrupt-africa.com/2014/12/total-investment-african-startups-doubles-2014/

Jackson, T. (2015a, April 8). Kenya's Angani launches cloud services. Retrieved March 19, 2018, from http://disrupt-africa.com/2015/04/kenyas-angani-launches-cloud-services/

Jackson, T. (2015b, May 15). Kenya's Weza Tele acquired by AFB for $1.7m. Retrieved March 18, 2018, from http://disrupt-africa.com/2015/05/kenyas-weza-tele-acquired-by-afb-for-1-7m/

Jackson, T. (2016, March 9). Kenya's Ma3Route raises $25k pre-seed round. Retrieved March 19, 2018, from http://disrupt-africa.com/2016/03/kenyas-ma3route-raises-25k-pre-seed-round/

Jakubowicz, A., Dunn, K., Mason, G., Paradies, Y., Bliuc, A.-M., Bahfen, N., … Connelly, K. (2017). Racism and the Affordances of the Internet. In *Cyber Racism and Community Resilience* (pp. 95–145). Springer.

Jamieson, K. H., & Cappella, J. N. (2008). *Echo chamber: Rush Limbaugh and the conservative media establishment*. Oxford University Press.

Jazbec, C. (2017, November 14). How Africa's Tech Generation Is Changing the Continent. Retrieved March 19, 2018, from https://www.nationalgeographic.com/magazine/2017/12/africa-technology-revolution/

Johansen, J. (1991). Humor as a political force, or how to open the eyes of ordinary people in social democratic countries. *Philosophy and Social Action*, *17*(3–4), 23–32.

Kanze, D., Huang, L., Conley, M. A., & Higgins, E. T. (2017). Male and female entrepreneurs get asked different questions by VCs–and it affects how much funding they get. *Harvard Business Review, June*, *27*. Retrieved from https://www8.gsb.columbia.edu/cbs-directory/sites/cbs-directory/files/publications/H03QHY-PDF-ENG.PDF

Kariuki, P. (2014, May 6). Riyaz Bachani Joins Angani's Founding Team as Chief Operating Officer – Angani.co. Retrieved March 19, 2018, from http://www.angani.co/blog/riyaz-bachani-joins-anganis-founding-team-as-chief-operating-officer-5/

Kariuki, P. (2015, February 11). Angani Closes Seed Round with Leading East African Investors to Localize Cloud Services – Angani.co. Retrieved March 19, 2018, from http://www.angani.co/blog/angani-closes-seed-round-with-leading-east-african-investors-to-localize-cloud-services/

Kazeem, Y. (2017, March 3). Startups raised more money in Africa than we thought during 2016 [News]. Retrieved March 21, 2018, from https://qz.com/921982/african-startups-raised-over-366-million-in-2016-a-new-report-says/

Kazeem, Y. (2018, February 21). Startup venture funding jumped more than 50% in Africa last year to a record high. *Quartz*. Retrieved from https://qz.com/1211233/how-much-did-african-startups-raise-in-2017-partech-disrupt-africa/

Kenney, M. (2017). Explaining the Growth and Globalization of Silicon Valley: The Past and Today.

Kenney, M., & Florida, R. (2000). Venture capital in Silicon Valley: Fueling new firm formation. *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region*, *98123*.

Kim, L. (2016, March 8). 50 Quotes From Elon Musk About Innovation and Success | Inc.com [News]. Retrieved March 13, 2018, from https://www.inc.com/larry-kim/50-innovation-amp;-success-quotes-from-spacex-founder-elon-musk.html

Kim, Q. (n.d.). *Silicon Valley has a dress code? You better believe it*. Retrieved from http://www.marketplace.org/2014/01/28/tech/silicon-valley-has-dress-code-you-better-believe-it

Kirkpatrick, G. (2008). *Technology and social power*. Palgrave Macmillan.

Kitchin, R. (2017). Thinking critically about and researching algorithms. *Information, Communication & Society*, *20*(1), 14–29.

Kitchin, R., & Dodge, M. (2011). *Code/space: Software and everyday life*. Mit Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=ZHez2BXgIeQC&oi=fnd&pg=PP1&dq=Rob+Kitchen+and+Martin+Dodge+%E2%80%93+Code/Space,+Software+and+Everyday+Life&ots=oQ4eK-29Pv&sig=ugEbQ66RayRg_ukK13nOkfi3pyo

Klaebe, H. G., & Foth, M. (2006). Capturing community memory with oral history and new media: The Sharing Stories Project.

Knappert, J. (1970). *Myths & Legends of the Swahili*. Nairobi: Heinemann Educational Books.

Kopp, R., & Ganz, S. (2016). *Valley Speak: Deciphering the Jargon of Silicon Valley*. Genetius Publishing. Retrieved from https://www.amazon.com/Valley-Speak-Deciphering-Jargon-Silicon-ebook/dp/B01CJF8Q54

Kosoff, M. (2018, March 15). "She's a Criminal Who Should Be in Prison": V.C.s Trash Elizabeth Holmes, Theranos, and Its Shareholders. *Vanity Fair | The Hive*. Retrieved from https://www.vanityfair.com/news/2018/03/shes-a-criminal-who-should-be-in-prison-vcs-trash-elizabeth-holmes-theranos-and-shareholders

Kotz, D. (2003). Neoliberalism and the US economic expansion of the'90s. *Monthly Review*, *54*(11), 15.

Kraidy, M. M., & Murphy, P. D. (2008). Shifting Geertz: Toward a theory of translocalism in global communication studies. *Communication Theory*, *18*(3), 335–355.

Kunda, G. (2009). *Engineering culture: Control and commitment in a high-tech corporation*. Temple University Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=1m80en3ktv4C&oi=fnd&pg=PR5&dq=kunda+engineering+culture&ots=9JNC1G2_9A&sig=kPhK1ictUEypuPHKTjLzuOEmbvs

Kuo, L. (2016, July 19). Kenya is pressuring thousands of expat NGO workers and volunteers to go home — Quartz. *Quartz Africa*. Retrieved from https://qz.com/716518/kenya-is-pressuring-thousands-of-expat-ngo-workers-and-volunteers-to-go-home/

Kutz-Flamenbaum, R. V. (2014). Humor and social movements. *Sociology Compass*, *8*(3), 294–304.

Lassiter, L. E. (2005). Collaborative Ethnography and Public Anthropology. *Current Anthropology*, *46*(1), 83–106. https://doi.org/10.1086/425658

Latour, B. (1990). Technology is society made durable. *The Sociological Review*, *38*(1_suppl), 103–131.

Lave, J. (2008). Situated learning and changing practice.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.

lawwyy. (2016, September 2). Zuckerberg's trip and my take home…. Retrieved March 2, 2018, from https://medium.com/@lawwyy/zuckerbergs-trip-and-my-take-home-26090b81540

Lee, C.-M. (2000). *The Silicon Valley edge: A habitat for innovation and entrepreneurship*. Stanford University Press.

Levy, S. (2016, October 5). Zuckerberg in Africa | WIRED. *Wired*. Retrieved from https://www.wired.com/2016/10/zuckerberg-in-africa/

Lewis, M. (1999). *The new new thing: A Silicon Valley story*. WW Norton & Company. Retrieved from https://books.google.com/books?hl=en&lr=&id=g-_2I8yJ7p4C&oi=fnd&pg=PA28&dq=tech+trend+obsession+silicon+valley&ots=oOHN6EJTO_&sig=4HAPTppzDa4JDaM9LKjPOf-1iu8

Ligaga, D. (2012). " Virtual Expressions": Alternative Online Spaces and the Staging of Kenyan Popular Cultures. *Research in African Literatures*, *43*(4), 1–16.

Linden, A., & Fenn, J. (2003). Understanding Gartner's hype cycles. *Strategic Analysis Report N^o R-20-1971. Gartner, Inc*.

Lindtner, S. (2013). Making Subjectivities: How China's DIY Makers Remake Industrial Production, Innovation & the Self. In *Eleventh Chinese Internet Research Conference (CIRC11), Oxford Internet Institute, University of Oxford* (Vol. 15). Retrieved from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2282420

Loader, B. D., & Mercea, D. (2011). Networking democracy? Social media innovations and participatory politics. *Information, Communication & Society*, *14*(6), 757–769.

Loewenstein, A. (2014). *Profits of doom: How vulture capitalism is swallowing the world*. Melbourne Univ. Publishing.

Love, J. (2016, May 13). Apple invests $1 billion in Chinese ride-hailing service Didi Chuxing. *Reuters*. Retrieved from https://www.reuters.com/article/us-apple-china/apple-invests-1-billion-in-chinese-ride-hailing-service-didi-chuxing-idUSKCN0Y404W

Luck, R. (2003). Dialogue in participatory design. *Design Studies*, *24*(6), 523–535.

Luescher, T., Loader, L., & Mugume, T. (2017). # FeesMustFall: an internet-age student movement in South Africa and the case of the University of the Free State. *Politikon*, *44*(2), 231–245.

Lunden, I. (2017, June 14). Uber rival Careem closes $500M raise at $1B+ valuation as Daimler steps in | TechCrunch [News]. Retrieved March 9, 2018, from https://techcrunch.com/2017/06/14/uber-rival-careem-closes-500m-raise-at-1b-valuation-as-daimler-steps-in/

Lurtz, K., & Kreutzer, K. (2014). What Does Your Audience Expect from You? How Entrepreneurs Acquire Resources through Storytelling. In *Academy of Management Proceedings* (Vol. 2014, p. 16008). Academy of Management. Retrieved from http://proceedings.aom.org/content/2014/1/16008.short

Madhavan, R., & Iriyama, A. (2009). Understanding global flows of venture capital: Human networks as the "carrier wave" of globalization. *Journal of International Business Studies*, *40*(8), 1241–1259.

Mankowski, E. S., & Rappaport, J. (2000). Narrative concepts and analysis in Spiritually- based communities. *Journal of Community Psychology*, *28*(5), 479–493. https://doi.org/10.1002/1520-6629(200009)28:5<479::AID-JCOP2>3.0.CO;2-0

Marchant, E. R. (2017). Organizational Cultural Hybrids: Nonprofit and For-Profit Cultural Influences in the Kenyan Technology Sector. In *Digital Kenya* (pp. 303–335). Springer.

Marcus, G. E. (1986). Contemporary problems of ethnography in the modern world system. *Writing Culture: The Poetics and Politics of Ethnography*, 165–193.

Marcus, G. E. (1995). Ethnography in/of the world system: The emergence of multi-sited ethnography. *Annual Review of Anthropology*, 95–117.

Marshall, H. M. (1972). Structural constraints on learning: Butchers' apprentices. *American Behavioral Scientist*, *16*(1), 35–44.

Martins, C. (2011). The dangers of the single story: Child-soldiers in literary fiction and film. *Childhood*, *18*(4), 434–446.

Massey, D. (2004). Geographies of responsibility. *Geografiska Annaler. Series B. Human Geography*, 5–18.

Mbembé, J.-A., & Nuttall, S. (2004). Writing the world from an African metropolis. *Public Culture*, *16*(3), 347–372.

McAdams, D. P., Josselson, R. E., & Lieblich, A. E. (2006). *Identity and story: Creating self in narrative*. American Psychological Association. Retrieved from http://psycnet.apa.org/psycinfo/2006-01746-000/

McComas, K., & Shanahan, J. (1999). Telling stories about global climate change: Measuring the impact of narratives on issue cycles. *Communication Research*, *26*(1), 30–57.

McGowan, K. (2016, May 2). How Silicon Valley rewrote America's redemption narrative | Aeon Essays [News]. Retrieved March 19, 2018, from https://aeon.co/essays/how-silicon-valley-rewrote-america-s-redemption-narrative

McKay, C., & Mazer, R. (2014, October 1). 10 Myths About M-PESA: 2014 Update. Retrieved March 9, 2018, from http://www.cgap.org/blog/10-myths-about-m-pesa-2014-update

McMillan, D. W., & Chavis, D. M. (1986). Sense of community: A definition and theory. *Journal of Community Psychology*, *14*(1), 6–23.

Mercy Corp. (2014, November 16). Mercy Corps Social Venture Fund [Company]. Retrieved March 19, 2018, from https://www.mercycorps.org/innovations/social-venture-fund

Meyerhoff, M., & Strycharz, A. (2013). *21 Communities of Practice* (Vol. 80). John Wiley & Sons. Retrieved from

https://www.researchgate.net/profile/Miriam_Meyerhoff/publication/228043352_Commu
nities_of_Practice/links/559afab308ae793d1382205c.pdf

Miller, D., & Slater, D. (2000). *The Internet: an ethnographic approach*. Oxford ; New York:
Berg.

Mobius Motors. (2018, March 19). Mobius Motors [Company]. Retrieved March 19, 2018, from
https://mobiusmotors.com/

Moore, G., & Davis, K. (2004). Learning the silicon valley way. *Building High-Tech Clusters:
Silicon Valley and Beyond*, 7–39.

Moraa, H., & Gathege, D. (2013). How ICT hubs models have impacted on the technology
entrepreneurship development. In *Proceedings of the Sixth International Conference on
Information and Communications Technologies and Development: Notes-Volume 2* (pp.
100–103). ACM. Retrieved from http://dl.acm.org/citation.cfm?id=2517922

Mugambi, J. (2010, February 19). iHub: Motivation - iHub [Blog]. Retrieved March 20, 2018,
from https://web.archive.org/web/20100219064312/http://www.ihub.co.ke/2010/01/ihub-
motivation.html

Mugambi, J. (2016). Josiah Mugambi Nairobi's iHub for open-source innovation. In T. Ermacora
& L. Bullivant (Eds.), *Recoded City: Co-creating Urban Futures*. Routledge.

Mugambu, J. (2016, June 6). iHub: The Next Chapter - Business Model and CEO Search
[Corporate blog]. Retrieved March 21, 2018, from https://ihub.co.ke/blogs/27686/ihub-
the-next-chapter-business-model-and-ceo-search

Mumby, D. K. (1993). *Narrative and social control* (Vol. 21). Sage.

Munford, M. (2013a, March 26). Don't Call Africa's Tech Hub "Silicon Savannah." *Mashable*.
Retrieved from https://mashable.com/2013/03/26/nairobi-tech-hub/#9FanXMhPPmqF

Munford, M. (2013b, May 15). 25 Startups in Unlikely Places Around the Globe. Retrieved
March 20, 2018, from https://mashable.com/2013/05/15/25-startups-in-surprising-places/

Munroe, T., & Westwind, M. (2009). *What Makes Silicon Valley Tick?: The Ecology of
Innovation at Work*. Nova Vista Publishing.

Mwampembwa, G. (2013, March 11). March 11 [Cartoon]. Retrieved March 19, 2018, from
http://gadocartoons.com/wp-content/uploads/2013/03/March-11.jpg

Mwampembwa, G. (2018, January 17). Morpho for Money Printing Tender - Gado. Retrieved
March 20, 2018, from http://gadocartoons.com/morpho-money-printing-tender/

Nairobi Garage. (2015, November 1). Nairobi Garage becomes Africa's largest co-working space
[Corporate blog]. Retrieved March 19, 2018, from https://nairobigarage.com/nairobi-
garage-is-expanding/

Ndemo, B. (2016, April 11). NDEMO: iHub is evolving to help more start-ups grow and compete
- Daily Nation. *Daily Nation*. Retrieved from
https://www.nation.co.ke/oped/blogs/dot9/ndemo/2274486-3154012-ojj8bkz/index.html

Ndung'u, N. (2017). *M-Pesa - a success story of digital financial inclusion*. Blavatnik School of
Government, University of Oxford and the Global Economic Governance Programme.
Retrieved from https://www.geg.ox.ac.uk/sites/geg/files/M-Pesa%20-
%20a%20success%20story%20of%20digital%20financial%20inclusion%20-
%20Njuguna%20Ndung%E2%80%99u.pdf

Newon, L. A. (2014). *Discourses of Connectedness: Globalization, Digital Media, and the
Language of Community* (PhD Thesis). UCLA.

Nguyên, T. S. T. (2010). Vietnamese diasporic placemaking: An ethnographic moment in uneven
geographic development. *Educational Policy*, *24*(1), 159–188.

Noble, S. U. (2018). *Algorithms of Oppression: How search engines reinforce racism*. NYU
Press.

Nothias, T. (2014). 'Rising','hopeful','new': visualizing Africa in the age of globalization. *Visual
Communication*, *13*(3), 323–339.

Nsehe, M. (2011a, April 7). Why Africa May Never Produce a Facebook, Groupon, Zynga or Google. Retrieved May 31, 2017, from http://www.forbes.com/sites/mfonobongnsehe/2011/04/07/why-africa-may-never-produce-a-facebook-groupon-zynga-or-google/

Nsehe, M. (2011b, April 18). Google Funds African Tech Startups. Retrieved May 31, 2017, from http://www.forbes.com/sites/mfonobongnsehe/2011/04/18/google-funds-african-tech-startups/

Nsehe, M. (2017). Mfonobong Nsehe - The Africa Chronicles. Retrieved May 31, 2017, from http://www.forbes.com/sites/mfonobongnsehe/

O'Connor, E. (2002). Storied Business: Typology, Intertextuality, and Traffic in Entrepreneurial Narrative. *Journal of Business Communication*, *39*(1), 36–54.

Ogunyemi, O. (2011). Representation of Africa online: sourcing practice and frames of reference. *Journal of Black Studies*, *42*(3), 457–478.

Ojo, T. (2014). Africa in the Canadian media: The Globe and Mail's coverage of Africa from 2003 to 2012. *Ecquid Novi: African Journalism Studies*, *35*(1), 43–57.

Okolloh, O. (2017, July 11). No Sacred Cows [Blog]. Retrieved March 20, 2018, from https://medium.com/@ookolloh/no-sacred-cows-ea835a78ab37

Olson, S. R. (1999). *Hollywood planet: Global media and the competitive advantage of narrative transparency*. Routledge.

Ombati, E. (2017, February 4). iHub Relocating to Senteu Plaza [Corporate blog]. Retrieved March 21, 2018, from https://ihub.co.ke/blogs/29183/ihub-relocating-to-senteu-plaza

Omidvar, O., & Kislov, R. (2014). The evolution of the communities of practice approach: Toward knowledgeability in a landscape of practice—An interview with Etienne Wenger-Trayner. *Journal of Management Inquiry*, *23*(3), 266–275.

O'Neal, J. (2016). *"Heart to Help": Producing Whiteness in Development NGOs in sub-Saharan Africa* (PhD Thesis).

O'Neill, M. (2008). Transnational refugees: The transformative role of art? In *Forum: Qualitative Sozialforschung.= Forum: qualitative social research.* (Vol. 9, p. 59). Freie Universität Berlin.

Osamuyi, O. (2016, August 18). Surely, you must have noticed Silicon Valley's newfound interest in African startups | TechCabal. Retrieved March 9, 2018, from http://techcabal.com/2016/08/18/silicon-valley-africa-trends/

Palmas, K., & Von Busch, O. (2006). *Abstract hacktivism: the making of a hacker culture*. OpenMute. Retrieved from http://swepub.kb.se/bib/swepub:oai:services.scigloo.org:166145

Parham, A. A. (2004). Diaspora, community and communication: Internet use in transnational Haiti. *Global Networks*, *4*(2), 199–217.

Pasher, E., Pross, G., Kushnir, U., & Neeman, Y. (2017). Tel Aviv: A Renaissance Revival in the Making. In *Entrepreneurial Renaissance* (pp. 81–88). Springer.

Peters, R. W., & Wendland, C. (2016). Up the Africanist: the possibilities and problems of 'studying up'in Africa. *Critical African Studies*, *8*(3), 239–254.

Pfeilstetter, R. (2017). Silicon Utopias: The making of a tech startup ecosystem in Manchester (UK). *Suomen Antropologi: Journal of the Finnish Anthropological Society*, *42*(1), 91–102.

Pitta, D. A., & Fowler, D. (2005). Online consumer communities and their value to new product developers. *Journal of Product & Brand Management*, *14*(5), 283–291.

Plesner, U. (2011). Studying sideways: Displacing the problem of power in research interviews with sociologists and journalists. *Qualitative Inquiry*, *17*(6), 471–482.

Polletta, F. (1998). Contending stories: Narrative in social movements. *Qualitative Sociology*, *21*(4), 419–446.

Polletta, F. (2009). *It Was Like a Fever: Storytelling in protest and politics*. University Of Chicago Press. Retrieved from https://proxy.library.upenn.edu:2265/books/about/It_Was_Like_a_Fever.html?id=hBY2 OUKingUC

Portland Communications. (2014). How Africa Tweets 2014 - Portland Communications [Company]. Retrieved March 19, 2018, from https://portland-communications.com/publications/how-africa-tweets-2014/

Portland Communications. (2016, April 6). How Africa Tweets [Company]. Retrieved March 19, 2018, from http://www.howafricatweets.com/

Poster, M. (1997). Cyberdemocracy: Internet and the public sphere. *Internet Culture*, 201–218.

Poster, W. R. (2007). Who's on the line? Indian call center agents pose as Americans for US-outsourced firms. *Industrial Relations: A Journal of Economy and Society*, *46*(2), 271–304.

Poster, W. R., & Prasad, S. (2005). Work-family relations in transnational perspective: A view from high-tech firms in India and the United States. *Social Problems*, *52*(1), 122–146.

Pratt, A. C. (2002). Hot jobs in cool places. The material cultures of new media product spaces: the case of south of the market, San Francisco. *Information, Communication & Society*, *5*(1), 27–50.

Pullen, J. P. (2013, May 7). Emerging Tech: 9 International Startup Hubs to Watch. *Entrepreneur*. Retrieved from https://www.entrepreneur.com/slideshow/226477

Rappaport, J. (2000). Community narratives: Tales of terror and joy. *American Journal of Community Psychology*, *28*(1), 1–24.

Razack, S. (1993). Story-telling for social change. *Gender and Education*, *5*(1), 55–70.

Richards, P. (2009). Dressed to kill: clothing as technology of the body in the civil war in Sierra Leone. *Journal of Material Culture*, *14*(4), 495–512.

Richardson, L. (1990). Narrative and sociology. *Journal of Contemporary Ethnography*, *19*(1), 116–135.

Richter, F. (2018, January 10). Venture Capital Funding Climbs to Decade High in 2017. Retrieved March 9, 2018, from https://www.statista.com/chart/11443/venture-capital-activity-in-the-us/

Ridanpää, J. (2014). Geographical studies of humor. *Geography Compass*, *8*(10), 701–709.

Ries, E. (2011). *The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses*. Amazon Digital Services LLC. Retrieved from https://www.amazon.com/dp/B004J4XGN6/ref=dp-kindle-redirect?_encoding=UTF8&btkr=1

Robehmed, N. (2013, December 16). What is a startup? *Forbes*. Retrieved from https://www.forbes.com/sites/natalierobehmed/2013/12/16/what-is-a-startup/#6f26c8b64044

Roberts, J. (2006). Limits to communities of practice. *Journal of Management Studies*, *43*(3), 623–639.

Robertson, J. (2011, October 5). Steve Jobs: Businessman, innovator, visionary. *Christian Science Monitor*. Retrieved from https://www.csmonitor.com/USA/Latest-News-Wires/2011/1005/Steve-Jobs-Businessman-innovator-visionary

Rodriguez, E. M., & Ouellette, S. C. (2000). Gay and lesbian Christians: Homosexual and religious identity integration in the members and participants of a gay-positive church. *Journal for the Scientific Study of Religion*, *39*(3), 333–347.

Rogers, E. M., & Larsen, J. K. (1984). *Silicon Valley fever: Growth of high-technology culture*. Basic books New York. Retrieved from http://library.wur.nl/WebQuery/clc/215778

Rotich, J. (2012a, September 11). Crowdsourcing and the Tech Hype Cycle | Afromusing [Blog]. Retrieved March 21, 2018, from http://afromusing.com/2012/09/11/crowdsourcing-and-the-tech-hype-cycle/

Rotich, J. (2012b, December 31). Learning from Lagos | Afromusing [Blog]. Retrieved March 21, 2018, from http://afromusing.com/2012/12/31/learning-from-lagos/

Runde, D. (2015, August 12). M-Pesa And The Rise Of The Global Mobile Money Market. *Forbes*. Retrieved from https://www.forbes.com/sites/danielrunde/2015/08/12/m-pesa-and-the-rise-of-the-global-mobile-money-market/

Saltzman, J. (2014, November 21). What the Father of Lean Startup Thinks You Need to Start Up. *Entrepreneur*. Retrieved from https://www.entrepreneur.com/article/240078

Sambuli, N. (2015, September 22). On Writing about Tech in Africa – NiNanjira [Blog]. Retrieved March 20, 2018, from http://nanjira.com/2015/09/on-writing-about-tech-in-africa/

Sambuli, N. (2018). This Is Me – NiNanjira. Retrieved March 20, 2018, from http://nanjira.com/this-is-me/

Samper, D. (2002). Cannibalizing kids: Rumor and resistance in Latin America. *Journal of Folklore Research*, 1–32.

Sanders, E. B.-N., & Westerlund, B. (2011). Experiencing, exploring and experimenting in and with co-design spaces. *Nordes*, (4). Retrieved from http://www.nordes.org/opj/index.php/n13/article/view/110

Sastry, A., & Penn, K. (2015, December 1). Why Hackathons Are Bad For Innovation [News]. Retrieved March 19, 2018, from https://www.fastcompany.com/3054023/why-hackathons-are-bad-for-innovation

Saxenian, A. (1996). *Regional advantage*. Harvard University Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=3gI3AwAAQBAJ&oi=fnd&pg=PR5&dq=regional+advantage&ots=pdfE1l4EhO&sig=iS5mWgPRkfKJ792DklkzrDbbHq8

Saxenian, A. (2007). *The new argonauts: Regional advantage in a global economy*. Harvard University Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=djgO_Thn6dUC&oi=fnd&pg=PA1&dq=regional+advantage&ots=dwbcjRVkg2&sig=HbSeyKbeyr3mYGfOGp_7mr0O-p0

Scharpt, E. (2016, September 22). Opinion: The Next Big Idea May Be Growing Far From Silicon Valley [News]. Retrieved March 9, 2018, from https://www.wired.com/2016/09/next-big-idea-may-lurk-far-sand-hill-road/

Schiller, H. I. (1976). Communication and cultural domination. Retrieved from http://eric.ed.gov/?id=ED135024

Schleifer, T. (2018, February 9). Uber's latest valuation: $72 billion. Retrieved March 17, 2018, from https://www.recode.net/2018/2/9/16996834/uber-latest-valuation-72-billion-waymo-lawsuit-settlement

Schwartzel, E. (2016, September 20). Hollywood Under Pressure to Put More Chinese Actors in the Spotlight. *Wall Street Journal*. Retrieved from http://www.wsj.com/articles/hollywood-under-pressure-to-put-more-chinese-actors-in-the-spotlight-1474304341

Secret aid worker. (2016, March 29). Secret aid worker: Why do expats earn more than the rest of us? | Working in development | The Guardian. *The Guardian*. Retrieved from https://www.theguardian.com/global-development-professionals-network/2016/mar/29/secret-aid-worker-why-do-expats-earn-more-than-the-rest-of-us

Sengeh, D. (2013, April 23). Young innovators can change how world sees Africa - CNN [News]. Retrieved March 20, 2018, from https://www.cnn.com/2013/04/23/opinion/david-sengeh-opinion/index.html

Shadbolt, P. (2014, October 13). The 10 best emerging market start up cities [Television News]. Retrieved March 9, 2018, from https://www.cnn.com/2014/10/13/tech/10-best-emerging-market-start-up-cities/index.html

Shandrow, K. L. (2016, June 27). 4 Must-See Tech-Related TED Talks That Excite and Scare Us About the Future. *Entrepreneur*. Retrieved from https://www.entrepreneur.com/article/254550

Shapshak, T. (2016, September 1). Africa Will Build The Future Says Zuckerberg, Visits Kenya On First African Trip. *Forbes*. Retrieved from https://www.forbes.com/sites/tobyshapshak/2016/09/01/africa-will-build-the-future-says-zuckerberg-visits-kenya-on-first-african-trip/

Shapshak, Toby. (2016, March 11). Kenya's iHub Enters a New Chapter. *Forbes*. Retrieved from https://www.forbes.com/sites/tobyshapshak/2016/03/11/kenyas-ihub-enters-a-new-chapter/#1168d3604f6a

Shen, L. (2018, January 20). Uber Replaced By Didi Chuxing as World's Most Valuable Startup | Fortune. *Fortune*. Retrieved from http://fortune.com/2018/01/19/uber-softbank-didi-worth-most-valuable-startup/

Siegler, M. (2011, October 5). Steve Jobs Has Passed Away [News]. Retrieved March 15, 2018, from https://social.techcrunch.com/2011/10/05/steve-jobs-has-passed-away/

Silver, D. (2008). History, Hype, and Hope: An Afterward. *First Monday*, *13*(3). Retrieved from http://firstmonday.org/ojs/index.php/fm/article/view/2143

Simone, A. (2001). On the Worlding of African Cities. *African Studies Review*, *44*(2), 15–41. https://doi.org/10.2307/525573

Simone, A. (2004). *For the city yet to come: Changing African life in four cities*. Duke University Press.

Simone, A. (2010). *City life from Jakarta to Dakar: movements at the crossroads*. Routledge.

Skoll. (2018, March 19). Skoll | Social Entrepreneurs Driving Large Scale Change [Company]. Retrieved March 19, 2018, from http://skoll.org/

Smith, A. (2018). The Seven Deadly Sins of Startup Storytelling [Blog]. Retrieved March 9, 2018, from /review/The-Seven-Deadly-Sins-of-Startup-Storytelling/

Smith, D. (2012, October 30). Kenya building a digital future in Africa's silicon savannah. *The Guardian*. Retrieved from http://www.theguardian.com/world/2012/oct/30/kenya-silicon-savannah-digital-technology

Snap Inc. (2018). Snap Inc. [Company]. Retrieved March 15, 2018, from https://www.snap.com/en-US/

Soper, T. (2016, August 1). Uber merges China business with rival Didi after fierce battle, gets 20% share of combined company [News]. Retrieved March 17, 2018, from https://www.geekwire.com/2016/uber-merges-china-business-rival-didi-fierce-battle-gets-20-share-combed-company/

Sorensen, M. J. (2008). Humor as a serious strategy of nonviolent resistance to oppression. *Peace & Change*, *33*(2), 167–190.

Sorge, A., & Rddick, A. P. (2012). Mobile Humanity: The Delocalization of Anthropological Research. *Reviews in Anthropology*, *41*(4), 273–301.

SpaceX. (2017). *Making Life Multiplanetary*. Adelaide, Australia: International Astronautical Congress. Retrieved from https://www.youtube.com/watch?v=tdUX3ypDVwI

Sparkes, A. C., & Smith, B. (2013). Spinal cord injury, sport, and the narrative possibilities of posttraumatic growth. In *Reframing Disability and Quality of Life* (pp. 129–143). Springer.

Sprague, J., & Ruud, G. L. (1988). Boat-rocking in the high-technology culture. *American Behavioral Scientist*, *32*(2), 169–193.

Srinivasan, R. (2017). *Whose Global Village?: Rethinking how Technology Shapes Our World*. NYU Press.

Stangler, D., & Bell-Masterson, J. (2015). Measuring an entrepreneurial ecosystem. *Kauffman Foundation Research Series on City, Metro, and Regional Entrepreneurship*, 1–16.

Stephens, J., & McCallum, R. (2013). *Retelling stories, framing culture: traditional story and metanarratives in children's literature*. Routledge.

Strachan Matranga, H., Bhattacharyya, B., & Baird, R. (2017). *Breaking the Pattern: Getting Digital Financial Services Entrepreneurs to Scale in East Africa and India*. Village Capital, Bill & Melinda Gates Foundation. Retrieved from https://vilcap.com/2017/06/15/breaking-pattern-getting-digital-financial-services-entrepreneurs-scale-east-africa-india/

Strauss, A., & Corbin, J. M. (1997). *Grounded theory in practice*. Sage.

Strobbe, S., & Kurtz, E. (2012). Narratives for Recovery: Personal Stories in the 'Big Book' of Alcoholics Anonymous. *Journal of Groups in Addiction & Recovery*, *7*(1), 29–52. https://doi.org/10.1080/1556035X.2012.632320

Studholme, N. E. (2014). Silicon Valley Startup Companies: A Question of Culture. Retrieved from http://scholarship.claremont.edu/cmc_theses/962/

Sun, P. (2017). Programming Practices of Chinese Code Farmers. *China Perspectives*, (4), 19–27.

Swales, J. (1987). Approaching the Concept of Discourse Community. Retrieved from http://eric.ed.gov/?id=ED286184

Swisher, K. (2014, November 5). Uber C.E.O. Travis Kalanick's Warpath. *Vanity Fair | Hive*. Retrieved from https://www.vanityfair.com/news/2014/12/uber-travis-kalanick-controversy

Szilagyi, C. (2010). *Framed! Encountering otherness in frame narratives*. Harvard University.

Tacchi, J. A., Slater, D., & Hearn, G. N. (2003). Ethnographic action research: A user's handbook. Retrieved from http://eprints.qut.edu.au/4399

Takhteyev, Y. (2012). *Coding places: Software practice in a South American city*. MIT Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=YV-7wLbZKcgC&oi=fnd&pg=PR7&dq=Yuri+Takhteyev+%E2%80%93+Coding+Places:+Software+practice+in+a+South+American+City+(2012)&ots=I7IJgC10FG&sig=lzQdbtnKNmt5oWA_DDe_TFZR-ZY

Tarrow, S. G. (2011). *Power in movement: Social movements and contentious politics*. Cambridge University Press.

TED. (2007). *How I became an activist*. Retrieved from https://www.ted.com/talks/ory_okolloh_on_becoming_an_activist

TED. (2009a). *Reporting crisis via texting*. Retrieved from https://www.ted.com/talks/erik_hersman_on_reporting_crisis_via_texting

TED. (2009b). *The danger of a single story*. Retrieved from https://www.ted.com/talks/chimamanda_adichie_the_danger_of_a_single_story

TED. (2013). *Meet BRCK, Internet access built for Africa*. Retrieved from https://www.ted.com/talks/juliana_rotich_meet_brck_internet_access_built_for_africa

Tedlock, B. (1991). From participant observation to the observation of participation: The emergence of narrative ethnography. *Journal of Anthropological Research*, *47*(1), 69–94.

The Economist. (2015, October 22). Few and far between - Africa's middle class. *The Economist*. Retrieved from https://www.economist.com/news/middle-east-and-africa/21676774-africans-are-mainly-rich-or-poor-not-middle-class-should-worry

Thomas, D. (2002). *Hacker culture*. U of Minnesota Press. Retrieved from https://books.google.com/books?hl=en&lr=&id=xgjHgtL28CAC&oi=fnd&pg=PR7&dq=hacker+culture&ots=H-LcJSEqK1&sig=NJi_We8AhdZhVGfyf46RoSs2QTQ

Tracy, K. (2009). Community. In *Encyclopedia of Communication Theory*. Thousand Oaks, Calif: SAGE Publications, Inc. Retrieved from http://dx.doi.org/10.4135/9781412959384.n57

Tufekci, Z., & Wilson, C. (2012). Social media and the decision to participate in political protest: Observations from Tahrir Square. *Journal of Communication*, *62*(2), 363–379.

Tully, M., & Ekdale, B. (2014). Sites of playful engagement: Twitter hashtags as spaces of leisure and development in Kenya. *Information Technologies & International Development*, *10*(3), pp–67.

Uber. (2018). The Uber story [Company]. Retrieved March 13, 2018, from https://www.uber.com/our-story/

Underwood, E. D., & Frey, L. R. (2007). Communication and community: Clarifying the connection across the communication community. *Annals of the International Communication Association*, *31*(1), 370–418.

UNICEF. (2018). UNICEF - Overview - Kenya at a Glance. Retrieved March 18, 2018, from https://www.unicef.org/kenya/overview_4616.html

Ushahidi. (2018a). About Ushahidi [Company]. Retrieved March 19, 2018, from https://www.ushahidi.com/about

Ushahidi. (2018b). Ushahidi [Company]. Retrieved March 19, 2018, from https://www.ushahidi.com/

Victoria, M. A., Lake. (2013, September 15). Kenya sees the light with tech. *The Sunday Times*. Retrieved from https://www.thetimes.co.uk/article/kenya-sees-the-light-with-tech-txqswfrgcx3

Village Capital. (2018, March 19). Home [Company]. Retrieved March 19, 2018, from https://vilcap.com/

Wa Thiong'o, N. (1994). *Decolonising the mind: The politics of language in African literature*. East African Publishers. Retrieved from https://books.google.com/books?hl=en&lr=&id=z60udlv1F_cC&oi=fnd&pg=PR8&dq=decolonising+the+mind&ots=kK8_r3I20N&sig=_1lEiYUyirB_IPxjRyWXdi03FUM

Wadhwa, V. (2016, March 20). Entrepreneurs everywhere can now solve the problems of humanity. Retrieved May 29, 2017, from http://social.techcrunch.com/2016/03/20/entrepreneurs-everywhere-can-now-solve-the-problems-of-humanity/

Wainaina, B. (2012). How to Write about Africa | Binyavanga Wainaina | Granta Magazine [Blog]. Retrieved March 20, 2018, from https://granta.com/how-to-write-about-africa/

Wainaina, E. (2015, August 3). Waze Traffic App Launches in Kenya in Google, Safaricom Partnership. Retrieved March 19, 2018, from http://www.techweez.com/2015/08/03/waze-google-safaricom/

Wainaina, E. (2016, January 28). Exclusive: Interview with Node Africa's Phares Kaboro - Life Goes on. Retrieved March 19, 2018, from http://www.techweez.com/2016/01/28/phares-kaboro-node-africa-interview/

Wanggren, L. (2016). Our stories matter: storytelling and social justice in the Hollaback! movement. *Gender and Education*, *28*(3), 401–415.

Warner, G. (2012, December 24). Kenyan Women Create Their Own "Geek Culture" [Radio news]. Retrieved March 20, 2018, from https://www.npr.org/sections/alltechconsidered/2012/12/24/167961947/kenyan-women-create-their-own-geek-cuture

Wasserman, H. (2017). African histories of the Internet. *Internet Histories*, *1*(1–2), 129–137.

Way, H. (2012, January 24). A GLOBAL Startup Competition Launches. Retrieved May 31, 2017, from https://thenextweb.com/entrepreneur/2012/01/24/global-startup-competition-launches-to-find-the-worlds-next-jobs-or-zuckerberg/

Weiss, J., & Delbecq, A. (1987). High-technology cultures and management: Silicon Valley and Route 128. *Group & Organization Studies*, *12*(1), 39–54.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge university press.

Wenger, E., McDermott, R. A., & Snyder, W. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Harvard Business Press.

Williams, R., & Edge, D. (1996). The social shaping of technology. *Research Policy*, *25*(6), 865–899.

Winfrey, G. (2016, February 24). How Steve Jobs Used Masterful Storytelling to Motivate Employees [News]. Retrieved March 15, 2018, from https://www.inc.com/graham-winfrey/4-ways-steve-jobs-used-storytelling-to-inspire-apple-workers.html

Women in Tech Kenya. (2017, July 24). The road ahead in building the Kenyan tech ecosystem: Perspectives from #WomenInTechKE [Blog]. Retrieved March 20, 2018, from https://medium.com/@womenintechke/the-road-ahead-in-building-the-kenyan-tech-ecosystem-perspectives-from-womenintechke-3c81df3943a4

Wong, P.-K. (2006). The re-making of Singapore's high tech enterprise ecosystem. *Making IT: The Rise of Asia in High Tech*, 123–74.

Xeinium Productions Limited. (2018). The Samaritans - Comedy TV Series [Company]. Retrieved March 20, 2018, from http://aidforaid.org/

Y Combinator. (2016). *Mark Zuckerberg : How to Build the Future*. Retrieved from https://www.youtube.com/watch?v=Lb4IcGF5iTQ

Yang, G. (2016). Narrative Agency in Hashtag Activism: The Case of #BlackLivesMatter. *Media and Communication*, *4*(4), 13. https://doi.org/10.17645/mac.v4i4.692

Yarow, J. (2013, July 3). Here's An Awesome Story About Steve Jobs Telling An Employee He's Going To Become The World's Best Story Teller In 1994 [New]. Retrieved March 9, 2018, from http://www.businessinsider.com/steve-jobs-story-teller-2013-7

Yuan, L. (2017, August 17). China Tech Workers Wanted: Women Need Not Apply. *Wall Street Journal*. Retrieved from https://www.wsj.com/articles/china-tech-workers-wanted-women-need-not-apply-1502972944

Zalanga, S. (2010). Religion, economic development and cultural change: The contradictory role of Pentecostal Christianity in sub-Saharan Africa. *Journal of Third World Studies*, *27*(1), 43.

Zeleza, T. (1997). *Manufacturing African studies and crises*. African Books Collective.

Zhong, R., & Isaac, M. (2017, December 21). Didi Chuxing, A Chiense Rival to Uber, Raises $4 Billion. *The New York Times*. Retrieved from https://www.nytimes.com/2017/12/21/business/dealbook/didi-chuxing-softbank-uber.html

Zuckerberg, M. (2016, September 1). Mark Zuckerberg's newsfeed [Comment in Social Media Newsfeed]. Retrieved March 8, 2018, from https://www.facebook.com/zuck

Zuckerberg, M. (2017, February 16). Building Global Community [Social Media]. Retrieved March 9, 2018, from https://www.facebook.com/notes/mark-zuckerberg/building-global-community/10154544292806634/