Santuri

STORIES & STUDIES OF GAMING IN ***KENYA TANZANIA & RWANDA***

TEAM SANTURI

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TABLE OF CONTENTS

7 **ANALOGUE TO DIGITAL:** THE MECHANICS OF GAMING AND THE META-GAME

9 **FAST AND CURIOUS:** THE MULTIPLE ACTORS IN GAMING AND EMERGING TECHNOLOGIES IN KENYA

20 **BEYOND HUNTING GAMES AND BANKING ON BETTING:** THE EXAMPLE OF TANZANIAN GAMERS AND ACADEMICS

24 **“THIS INDUSTRY IS BIG, BIGGER THAN HOLLYWOOD”:** EXPANDING GAMING AND PRODUCTION IN RWANDA

27 **KENYA, TANZANIA, RWANDA:** ONWARD TOGETHER, FORGING AN INCLUSIVE COMMUNITY

In the following articles, the terms "gaming" and "gaming industry" refer to video gaming, online gaming, digital games, eSports and not betting or the betting industry.

ANALOGUE TO DIGITAL:
THE MECHANICS OF GAMING AND THE META-GAME

The concept of a game is nothing new. Humans have been making and playing games since the beginning of time. And while gaming in the digital era involves modern-day processes, materials and technologies, the core game mechanics that are present in analogue games can sometimes be seen in digital games and vice versa. The key mechanics are interactivity, information manipulation, complex automated systems, and networked communication. What's different is how prominent these mechanics are in digital media versus analogue media, and how that contributes to the larger designed system and experience of a game.

In digital games the interactivity is immediate but narrow, meaning that a player's input is limited to the mouse, keyboard, or console while the output is restricted to the speaker and screen. For example, in *FIFA 19* – one of the most popular games on the African continent – there is a limited number of movements that a player can perform. You simply can't create gestures that are not built into the game, you can only manipulate the sequence of determined gestures with skilled control of the input devices. That said, a player does receive instantaneous feedback; once a button is pressed, an action follows.

Compare this to football, an analogue or non-digital game/sport, where players are kinesthetically unbounded, free to move their bodies in a variety of complex ways – as long as they are obeying the rules – but only after some training. That feedback isn't immediate in that players rarely get complicated movements right on the first try – it takes practice. Hence, the new materials – computer hardware, computer software, programming languages, game consoles etc. – present new possibilities for game mechanics but it's how game developers manipulate these materials and mechanics that creates digital gaming experiences. And perhaps it's because there is something familiar about these mechanics – we've probably encountered them in the analogue games we've played – that we have the capacity to be so drawn to digital games.

The converse is true. Because many adults are so unfamiliar with the intricacies of the new materials, they have such morbid fears about the world of digital gaming. The Internet and its myriad highways overwhelms them; programming languages are alien to them and game consoles are small, ridiculously pricey gadgets that they shy away from touching for fear of breaking them and spending more money replacing them.

What we are really analyzing when we look at gaming in East Africa today is not so much the new media and technologies themselves, but rather how they have changed game play. What are the new contexts in which people play because of digital gaming experience? And what opportunities or obstacles does this new game play create?

Essentially, we are examining what is known as the meta-game which is the way the game engages with factors outside the world of the game. As Eric Zimmerman and Katie Salen explain in *Rules of Play: Game Design Fundamentals*, the meta-game is "the game beyond the game" that contributes to meaningful play. Part of the meta-game model involves examining what players bring to the game, what they take away from the game, what happens between the game, and what happens during the game quite apart from the game itself.

People play in different spaces and these spaces are different at more than one level – physically, socially and conceptually. Also, everyone has a unique personality and a unique life experience. It follows then that there is not one way that players in this part of the world, or anywhere really, approach digital game play.

FAST AND CURIOUS:
THE MULTIPLE ACTORS IN GAMING AND EMERGING TECHNOLOGIES IN KENYA

By Wanda Nyairo

WHO PLAYS?

When most people think about a gamer, they imagine someone who is at best, shy and introverted, and at worst, anti-social and unmotivated. And if they're really buying into the stronger stereotypes about gamers then they might also imagine this person to be a white, teenage-aged boy – there's no way they'd associate gaming with Africa or Africans. But to their surprise, African gamers do exist, they come in all ages, and some of them are even women.

The first person I reached out to when I began my research is a Kenyan woman named Liz Macharia who is in her early 30s. Liz enjoys games that are "simple time-wasters" like Candy Crush because "they're soothing". But she's also a huge fan of *Age of Empires*, which she plays offline. Her favorite thing about *Age of Empires* is getting to "learn a lot about ancient civilizations and warfare".

From Liz I learnt about the BLAZE eSport Tournament that was launched in June 2019 organized by BLAZE, Safaricom's sub-brand, in conjunction with Standard Media Group and Pro Series Gaming. The tournament held regional finals in Meru, Eldoret, Mombasa and Nairobi, with the winner receiving KSh 50,000, and the first and second runner up receiving KSh 30,000 and KSh 20,000 respectively. I was so surprised by this. I couldn't believe how much pro-gamers could earn and I didn't realize the scale of eSports until I learned about the Fortnite World Cup. It felt like I had been introduced to another world. Before I spoke to Liz I didn't know much about eSports or professional gaming. I definitely did more gaming when I was younger, but now I mainly just play 2048 on my phone when I'm bored.

I remember the first digital game I played was some PC clone of *Super Mario*. I was around 6 when my parents got a friend to help install it on the computer at home and I was elated! From there I moved onto PlayStation games: *Need For Speed*, *Tomb Raider*, and *Barbie Explorer* were my favorites. I was so distraught when I lost the *Barbie Explorer* disk, and to this day I'm so sure it fell under the sofa but alas, I never found it.

My sister thinks that my brother got rid of it because he didn't like sharing the PS2…she might be right, perhaps it was sabotage. Anyway, I recovered and found solace in *FIFA 10* which I

played on my PSP (PlayStation Portable). That lasted for a while until I came across *The Sims*. I loved this game! I played the first version all the way to the third and with as many extensions as I could get along the way. I really enjoyed styling my avatars, building different kinds of homes for them, and imagining, then play-acting their life stories. In retrospect, perhaps this contributed to my interest in design and storytelling.

After some time, to everyone's surprise – especially my mother's – I stopped. I'm not sure why, I don't think anything monumental prompted this. But at around the age of 13, I just stopped playing *The Sims*. It wasn't until university that games found their way back into my life as more than a hobby. I learnt how to code and made my own digital, multiplayer game in Processing 3 titled *Wall-to-Wall*. It's definitely not ready for mass consumption but it is ready for play-testing since it's functional. And it was a really fun challenge to undertake! After that I took a game design course where I got to make boardgames as I learnt more about game theory.

Until I heard about Elizabeth's experience with gaming and was reminded of my own, I thought I wasn't a gamer! And perhaps I'm not, but at some point, I definitely was. The reality is, more people are gamers than they think. Sometimes you have to go into your past to realize that, but other times you just have to reframe what you think a gamer or gaming is. And there isn't one type of gamer or one way to game.

GAMERS

Take Jason Kanya for example, an eleven year-old boy living in Nairobi who has been enrolled in coding classes during the long holidays for the past two years. In these classes he has learnt about robotics and internet safety, built websites using HTML/CSS, and has even programmed his own game titled *Furious Racers* in Python. In the game, players drive a car and try to dodge objects that fall in their way. As the game goes on, the objects get bigger and the speed of the car increases in order to make playing harder.

Other than making games, Jason also plays them. His favorites are *FIFA 19*, *Call of Duty*, *Fortnite*, and *Racing Blur* which he usually plays in the "game room" that he and his younger brother share at home. Given Jason's growing knowledge about game development and interest in technology, it's no surprise that when I asked him why he doesn't participate in the live *Fortnite* gaming competitions online he was able to explain how server latency is a hindrance for him. Server latency is the amount of time in milliseconds, referred to as ping, that it takes for a user to send a message via the internet to a server and receive a response. I'm no Computer Science expert, and I only learnt about this once I got to graduate school so it's impressive that Jason, who is in class six, can articulate this concept so clearly. He told me that because the closest *Fortnite* servers are in Europe and India, any action he performs will take a

longer time to render in the game (about a 3 second delay) thus making it difficult for him to participate in a live multiplayer competition online.

For someone like Jason, the lack of internet infrastructure for gaming on the African continent is an obstacle. However, he did mention that given the rising demand from gaming communities in Africa, the dream of having a *Fortnite* server in South Africa might soon be a reality. It'll be interesting to see how a development like this will change game play for people like Jason. Aside from the server latency, Jason also cited other reasons for not being able to participate in competitions like Friday Fortnite. Friday Fortnite, a tournament organized by Daniel "KEEMSTAR" Keem and UMG Gaming where the winning duo receives $10,000, occurs weekly at 4pm EDT. Given the time difference between Kenya and the American east coast, and the fact that Jason is only allowed to play until 10pm, it's not possible for him to participate.

Additionally, events like the Fall and Summer Fortnite Skirmishes where leading players from all over the globe who qualified in online heats are flown out by Epic Games (publishing company) to Seattle to compete in the finals, have a minimum age requirement of 13. The Skirmishes take place over 8 weeks and have a total prize pool of $8 million. To be selected for these skirmishes, players really have to adopt the lifestyle of a pro-gamer, meaning that they must dedicate time and effort into consistently practicing to improve their skills. The same goes for local competitions – they might be easier to enter and attend, but winning does requires proper preparation and dedication, an investment in time.

As someone who primarily plays to spend time with his brother and friends and to make new ones through online gaming communities, Jason doesn't necessarily see himself as a pro-gamer. While he enjoys gaming tremendously, Jason values balancing this interest with others – he likes playing football outside – and with his school work. However, just because Jason isn't training to be a pro-gamer, it doesn't mean gaming is contributing nothing to his career aspirations. On the contrary, Jason thinks that gaming could help him in achieving his goal of becoming a pilot. And he might be on to something – a study conducted by Michigan State University in 2011 linked video games to improved creativity in children. Another study at the University of Rochester declared that child gamers that play action video games were faster and more efficient at decision-making and task completion than non-gamers. All of these skills would definitely make Jason a better pilot and could honestly be beneficial to anyone regardless of their desired profession.

But what about people who do want to become professional gamers? What local opportunities exist for them to earn money and how can they become immersed in this world? For many, gaming cafés provide the perfect place to start. Usually located in residential neighborhoods, these cafés typically charge people by the hour to play which means players don't have to incur the bigger cost of purchasing equipment and games themselves, which are highly taxed in Kenya if they're bought brand new. And these cafés are not only unique to Nairobi – I've

been told about one in Karatina and another in Kericho. While I didn't get to visit those, I did have the opportunity, one Thursday evening and the following Tuesday morning, to visit a gaming café in Jamhuri 2, a housing estate located in Woodley, South-West of Nairobi's CBD.

The owner of the gaming café is a third-year student at Africa Nazarene University named Tir Baba who is pursuing a Bachelor's degree in Business and Information Technology. After drawing up a business plan as part of an assignment for one of his classes, Tir Baba decided to take his idea off paper and into the real world. He found the space with the help of his brother, set up the Wi-Fi with Zuku, and put in two sofas. Tir Baba then purchased two previously-owned PS4s, two TVs, and a collection of games including *FIFA 19*, *Fortnite*, and *Mortal Kombat*.

This isn't his first time managing a business and lucky for him, a similar operation used to be run out of that space, so there was already a solid clientele and Tir Baba had enough experience to know what he needed to do to make his business thrive. He is not yet done with kitting-out the café. He said he really wants to work on the interior design, maybe add some interesting lighting and turn the walls into murals. The café's business hours are "11am to late". When school is in session the café is livelier in the evenings. During the holidays, Tir Baba will typically find young kids at his door, waiting for him to open in the morning.

His café is a place for people of all ages. Six year-olds accompanied by older siblings; thirty year-olds passing time as they wait their turn at the barber shop next door. They come to Tir Baba's to enjoy each other's company and participate in friendly competition at a rate of 150 KSh per hour (1.50 USD), with the loser typically footing the bill. It's interesting to see how local practices of interactivity have spilled over from analogue games to digital ones. "Loser pays" is a practice that was fairly common amongst pool players in Kenyan pubs in the early 2000s.

But it's not all fun and games at Tir Baba's café. Players form teams and train together to compete in local competitions, where they can potentially win some money, and ultimately begin their careers as pro-gamers. Tir Baba spoke about forming a team with his patrons last year to participate in a *FIFA 19* competition in Kibera – not too far from Jamhuri. The top three competitors were awarded 20,000 KSh, 10,000 KSh, and 5,000 KSh respectively.

Unfortunately, his team didn't win that day, but it was a valuable experience nonetheless; one that allowed him to bond with fellow gamers and really soak in the atmosphere of an eSports competition. The crowds, the cheering, the anticipation – "my heart was pounding so hard" – the excitement, and the camaraderie are the fond memories Tir Baba carries about what happened during those matches, other than the matches.

In order for these local competitions to take place and to be affordable for many teams to enter, there needs to be adequate funding and willing sponsors. Sometimes, as Tir Baba mentioned, it

is hard to find the money to enroll in a competition and many competitions lack sponsors. When an event does have good support, it really affirms the professionalism of gaming. The example Tir Baba gave is one competition that he and his friends attended at Two Rivers Mall last year.

The entry fee was 200 KSh per team. It was a whole day affair, one that Tir Baba comically remembers as starting and ending with car trouble for him and his friends. There was free bottled water available for the players and each team member who got to the Round of 16 also received a t-shirt. This may seem insignificant, but it's a classic way to memorialize an event, reminding players every time they wear that item of clothing that they were part of something big. Additionally, that T-shirt is a moving bill-board that markets the event, and gaming itself, to everyone that the wearer encounters, long after the event.

RUMOURS AND COUNTER-RUMOURS

In speaking to Tir Baba and visiting his business it's difficult to believe the moral panic over games making people anti-social, at least not in this context. This operation is inherently social and in order to run this business Tir Baba simply cannot avoid interacting with people. Every day, he must exercise a variety of social skills to make people feel comfortable in the space; entertain them as they wait for their turn; and negotiate with those who have played too long to give younger children some screen time. Tir Baba's job exists at the intersection of people and games and perhaps that's why he can very plainly see the social benefits of gaming.

According to Tir Baba, "FIFA is like Chess" – it's about reading people to understand their strengths and their weaknesses so that you can develop an appropriate strategy to win. He also mentioned that in his work he gets to see people really come out of their shell and grow confident as they make friends who share their interests.

While Tir Baba agrees that people need balance when it comes to gaming, he also believes that a game can only bring out something in you that was already present and that humans can separate the game world from the real world when necessary. The challenge for us, as conscious beings, is to exercise our ability to step out of that unique space termed the "magic circle" by Zimmerman and Salen, where the rules of a game can take precedence over the rules of society. This doesn't mean it's not possible for the game world and the real world to coexist – there are many ways that this can happen beneficially. And yes, sometimes people do get lost in a fantasy, but the research led by Christopher Ferguson of Texas A&M University, as referenced by *Psychology Today*, "found no relationship at all between exposure to violent video games and real-world violence committed by [these] young people" in his study.

Additionally, Dr Peter Gray argues in the same article that video games "depend on skill and knowledge…so, playing these games a lot does not necessarily imply addiction; it just means

that you are really into the game and enjoy it". So to inaccurately classify video gaming as an addiction will only create a stigma around one of the most popular activities of the digital era. While multiplayer games like *FIFA 19* are the most popular, they aren't the only types of games that people play. Some people prefer single-player, polemical games with a deeper narrative – games that examine real world problems and human nature to prompt social change. In these games, players are faced with thought-provoking truths about society and have to make some very philosophical choices as they navigate through the game.

I spoke to Abdikarim Mohammed, a Communications Specialist, who told me about the games *Life is Strange* and *The Last of Us*. In *The Last of Us*, players control Joel who meets Ellie, a fourteen year-old girl, in a post-apocalyptic America. Joel escorts Ellie across the country and during their journey, the pair encounter many others trying to survive in this brutal world without losing their humanity. *The Last of Us*, developed by Naughty Boy and published by Sony, tackles many themes: survival, identity, fate, love, hope, loss, sexuality, and the struggles of parentage. The game has been praised and awarded for enhancing storytelling and complex character development in the medium. A much-anticipated sequel is set to be released in May 2020 and this time players will control Ellie, now nineteen years-old, as she embarks on a mission of revenge against those who wronged her.

Games like these offer deep introspection about human beings and are examples of how the game world and the real world can coexist for the betterment of society. In that way perhaps, there is still an inherently social aspect to the game play experience even if it's played in solitude because of the focus on people and relationships within the game.

These types of games are not just interesting for Kenyans to play, they're also interesting or Kenyans to make. Afroes Transformational Games, whose founder and CEO is Anne Githuku-Shongwe, is an interactive media company that focuses on creating social impact games that prioritize African narratives and perspectives. The company is currently based in South Africa but has worked with Kenyan developers to produce games. One such game is *Haki – Shield and Defend*, a game developed by Nathan Masyuko, that tackles environmental rights. In the game, players must protect trees from illegal loggers. The game won the World Summit Youth Awards held in Canada in 2012.

Another noteworthy game from the East African region is *Salaam* – which means 'peace' in Arabic. *Salaam* was created by Lual Mayen, a South-Sudanese game developer, who first took an interest in coding while he and his family were in a refugee camp in Uganda. Players in the game take on the identity of a refugee who must gather food and medicine as they escape a conflict zone and try to stay alive on their journey to an intentionally undefined place of peace.

Rather than creating a game that only presents and performs violence without interrogating it, Lual Mayen was inspired to develop one that uses violent realities to generate conversations about peace and conflict resolution. And in doing so, Lual Mayen was named a Global Gaming

Citizen at the 2018 Game Awards in Los Angeles. Out of his own experience he created a game that poses important questions about states of peace – both mental and physical ones. Additionally, *Salaam* encourages people to be more sensitive about resources, and to empathize with each other.

While not every game developed in Kenya or in Africa is a polemical one that addresses societal problems, there is something to be said about the experience of creating from a perspective that is rarely represented in global media. For some, this experience is akin to a responsibility to use their talents and platforms to say something of significance.

When interviewed by Liz Macharia for this project, Salim Busuru, a Kenyan game developer, addressed this powerfully by stating, "I don't believe that as African artists we have the luxury of [making] art for art's sake. I look at it as art that says something about ourselves. If there is nothing to say or show in a project, I don't do it." This is a sentiment shared by many African creatives, across all forms of media, and while this is a huge responsibility to take on, more often than not, any art that someone creates will inevitably reveal something about the artist because they are presenting something to audiences from their point-of-view. The challenge, especially in a medium like games, is how to balance the learning with good old fun. As Salim said, "it [the game] has to be meaningful but at the same time it has to have the standard elements of looking good, being fun, engaging, and exciting" lest it turns into a "lecture".

DEVELOPERS

So what is it like to be a game developer in Kenya? What are some of the challenges these creatives face? What is exciting about producing in this environment? And what can we – as consumers, professionals, family members, and/or friends – do to support them and help the industry grow?

On January 18, 2020, I had the opportunity to attend the African Game Developers meetup at Nairobi Garage – a co-working space in the Kilimani area of Nairobi. The meetup was organized by Ludique Works, a Pan-African game publishing company, founded by Nathan Masyuko and Douglas Ogeto in Kenya. It was in this gathering of people from different disciplines and backgrounds who share an affinity for gaming that I began to see how to address the questions above.

From the presentation I learnt that as consumers, one of the things we can do to support developers and the gaming industry is to stop purchasing gaming products abroad and having family/friends ferry them for us. This results in the revenue generated by Kenya from gaming being reflected in Western economies and not in the Kenyan economy.

Now this isn't a judgement on anyone who does this, and there is a valid reason for this behavior. Taxes are just so high on gaming products in Kenya and local dealers tend to price these products even higher because of the relatively low volumes sold here, compared to volumes sold abroad. So until the government can address this, we're stuck. We need tax policy reform to allow dealers to adjust their prices and encourage consumers to buy games locally, all of which will support the growth of the local gaming industry.

Apart from buying games locally, Kenyans also need to start buying locally produced games. If we continue to primarily purchase games made abroad, then foreign developers and publishing companies will continue to earn more than local ones, whose livelihoods will be less likely to be fully supported by their creativity – at least in economic terms. Perhaps the most obvious challenge that game developers in Kenya face is the issue of funding and publishing. It costs time and money to make games because creatives need workspace and internet. Liquid Telecom is trying to address this issue by providing free workspace and internet at Nairobi Garage for game developers.

Additionally, most developers end up having to publish their own games because, there just aren't many African game publishing companies. Self-publishing is a massive undertaking stretched across many areas – content creation, marketing/advertising, networking, copyrighting. To do all that as one person takes too long and more importantly, it takes the developer away from the labour of the game which is where their passion and creativity lie. The success of a company like Ludique Works is paramount to bringing more structure to the industry and freeing developers to develop. Ludique Works is working to "create the environment" for an open game market, for research, for education, and for mental health advocacy.

But interestingly, perhaps it's this unstructured form that makes producing in this environment exciting. Yes, there is a lot of work to be done but those who are developing games, or are supporting developers, get to really shape the future of the industry and see it develop from year to year. In early 2018, Google began accepting payments via M-PESA on the Google Play app, which is really significant considering that most Kenyans are Android users. With more payment options available, more people can participate in game consumption.

Also, according to 2018 statistics from the CIA World Factbook, around 58.64% of Kenya's population is under 25 and since gaming tends to attract younger consumers, most of these people are probably already engaged in gaming. And as they age, it's likely that they'll continue gaming into adulthood where they'll have more purchasing power. It's clear now why social/casual gaming is the segment of the Kenyan market to keep an eye on. According to the 2018-2022 Entertainment and Media Outlook by PwC, the video game industry grew at a rate of 21.2% in 2016 and is projected to grow at a rate of 13.2% CAGR (Constant Annual Growth Rate) between 2017 and 2022.

And if we can focus more attention on eSports tournaments like the Africa eSports Championship – the first and only eSports league on the continent, running in 24 countries so far – then this could help put Africa's eSport industry on par with international standards. The 2019 Africa eSports Championship was aired on KTN, which is the first time this has happened on the continent. Unfortunately, due to a lack of sponsors, the grand finale couldn't be hosted. Pouring resources into eSports championships should be a priority because this could also be a sure way to create employment; exhibit local games by budding developers at the events; and collect revenue through advertising and charging spectators. Most importantly, directing efforts towards these industries – gaming and eSports – will demonstrate to young people that pro-gaming and game development are viable career options.

One of the most fulfilling parts of the meetup in Kilimani was hearing about what brought everyone there. There were graphic designers, animators, game developers, and even a costume designer. We all had the chance to hear from two lecturers at the Africa Digital Media Institute (ADMI) speak about the different courses available for students seeking an education in video game design and development. According to ADMI's website, upon completion of the Rubika Video Game 2D Certificate, Rubika Video Game 3D Diploma and the Rubika Video Game Market Diploma, students will receive a Bachelor's degree in Video Game Design and Development from Rubika in France.

So when one woman stood up to introduce herself and said that she was there accompanying her son – who is in year 11 (Form 3) and very interested in gaming and game development – it was encouraging to know that through this meetup, they could both learn something about his education options and the professional industry. Her actions illustrate that as family members and friends, what we can do, what we must do, to support aspiring pro-gamers and developers is to stand by them, however we can, as they strive to achieve their dreams.

THE BALANCE OF WORK

Gaming in Kenya is not a monolith. There are so many different kinds of people involved in this activity, for a variety of reasons, in a variety of ways. And while there are some frustrating things about trying to develop games when the industry is still finding its place of respectability, recognition, and resourcing in this society, that doesn't mean that any efforts made are futile.

At the end of the meetup in Kilimani, it was encouraging to hear that the African Game Developers group will soon be forming a sub-group called the Kenya Game Developers Association that will be specifically tasked with lobbying the concerns of developers, publishing companies and others to the government, private sector, and international

community. They will also liaise with other creative groups, such as the Kenya Film Classification Board (KCFB) and Writers Guild of Kenya, to name a few.

So what are some of the concerns that should be raised? What could an association like this advocate for?

As mentioned earlier, tax policy reform could be one as this would make it more affordable for Kenyans to buy gaming products locally thus pouring more money into the economy and catalyzing the growth of the gaming industry. Another could be the creation of scholarship funds for students pursuing a Bachelor's degree in Video Game Design and Development from Rubika through the Africa Digital Media Institute (ADMI). Currently, the fees are KSh 400,000 per year for this 3-year program and payments can be made in installments. Additionally, as we saw from the experiences of Tir Baba, there is need for more sponsorship for eSports competitions.

Perhaps another intervention should be improving internet infrastructure. At the moment, Kenya's internet infrastructure is one of the best on the continent, positioning the country to be leaders in video gaming and development but there are things Kenya will have to prepare for.

The first is the global rollout of 5G. While majority of residents in more urban areas of Kenya currently have 4G compatible devices and will then be able to connect to 5G network once it's available, the same cannot be said for more rural regions. In places where electricity and 4G network is scarce, residents are reluctant to buy smartphones – even though they have become more affordable over the years – because of their low battery life. The phones they opt for instead are compatible with the 2G or 3G networks that are more readily available.

Once 5G rolls out in Kenya, it's possible that this digital divide will increase thus isolating these regions from gaming, preventing gamers like Liz Macharia – for whom downloading is more accessible and affordable – from using these new services, unless the infrastructure issues can be addressed. The second thing Kenya will need to consider is that the global gaming industry might be progressing into an age where games are streamed, instead of purchased, downloaded, or installed onto hardware. In 2019 Google unveiled Stadia, it's cloud gaming service that will stream games from the cloud to the Chrome browser, Chromecast, and Pixel devices – kind of like the Netflix of gaming. Games will be stream-able across laptops, desktops, TVs, tablets, and phones.

The aim here is to provide users with instant play, removing obstacles that might prevent gamers with internet access from playing on their devices. For all this to run smoothly, Google is working to ensure their servers will be close enough to players so that server latency – as experienced by the young Jason Kanya – won't be an issue. For the whole of Kenya to be able to use this service means that reliable and fast internet connections will need to be available for the best resolution.

That said, Kenya is one of the most prominent video gaming hubs in Africa. It has the human capital necessary to support game development – from developers, to software engineers, to computer engineers, to educators – hence the industry has the potential to grow and create more employment, more education opportunities, and more locally developed and Afro-centric games. Additionally, there is a willing, receptive audience – locally and globally. As game developer Salim Busuru puts it, in order to maximize on this audience, Kenya needs to be "on par with international standards using local resources". There is every reason to be hopeful.

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BEYOND HUNTING GAMES AND BANKING ON BETTING: THE EXAMPLE OF TANZANIAN GAMERS AND ACADEMICS

By Anne Mucheke

GAMING VS. BETTING

Writing about gaming in Tanzania is literally like playing a 4X game; it requires a lot of strategy and control. Finding the right players in the industry is challenging as not much is openly available on the industry and players are not too visible online. One is more likely to find data on betting, also called gaming, an industry that is hugely popular in the country and well regulated by government under the Gaming Act Cap 41. Previously regulated under the Pools and Lotteries Act of 1967, the Act more readily applies to lotteries and gambling and gives huge returns in form of taxes to the government.

Video gaming however is a relatively young unregulated industry, according to some of the players. It is considered an eSport business and features gamers, game room owners and a few developers. There is still no specific legislation to nurture and protect gaming as eSport.

“The industry is still young in Tanzania. Although we have a number of players, they are not as exposed as those in other African markets,” says Mageta Sukulu. Mageta is the CEO of GamersChoice.tz which organizes eSport tournaments in Tanzania. GamersChoice.tz is recognized as the local branch of African eSports Championships, the largest eSport festival in Africa bringing together gamers from across the continent.

His company specializes in bringing together gaming enthusiasts in Dar es Salaam and Arusha under one roof to play and compete. “We offer the gamers a chance to interact physically and for those who are really good, win some money while at it.”

Mageta admits that this is an expensive venture and he often partners with game room or arcade owners to pull in the crowds. Ashe works full time on a primary job, he has not invested in the infrastructure of gaming, and is more a facilitator of the same. Support from corporate companies has been slow in coming for the industry. “I’ve been at this venture for years and I am yet to see the returns. However, I do this because of the love for gaming and the exposure I have had in East Africa because of it,” he notes.

The players at these tournaments range from 13-30 years and any one tournament can take up to 15-25 gamers. The tournaments are male- dominated and even though they are open to female players, they don’t seem to elicit interest amongst them. As with all games, it is

the last man standing, or should we say thumbing, who is declared victorious. Winners are typically awarded about 200,000 TSh, or 87 USD, which may not seem much, but is quite the take home in Tanzania.

PUBLIC PERCEPTIONS

Lucky Komba, who owns LuckyGamerzTZ traces his love for gaming all the way back to high school. As a child, the only games he played were physical until he interacted with in-built computer games like *FIFA 19* and *Need for Speed* where beating each level was a thrill. He forgot about games in college until his younger brother began to beat him at it, getting him back to computers.

In 2014, he moved to Kenya for work and as a foreigner, picked up gaming to pass time in the evenings. He bought his first PlayStation and soon gathered a couple of friends to play with – *Call of Duty, Taken, FIFA 19* – soon, it became routine. Whoever was good was good, if you were bad, that was it. There was no challenge.

It is from here that an idea for a gaming movement was born – form a group, invite a wider circle of players and challenge each other in the games. In 2017, Lucky Gamerz was born and when he moved back to Tanzania in 2018, Komba registered it as a company, based at Mayfair Plaza in Mikocheni, Dar es Salaam and formulated a vision and mission for it. One of which is to one day solve the problem of purchasing games online, which is a huge challenge for Africans.

“Electronic Arts Inc (EA Games) which develops the games we buy doesn’t recognize East Africa as a region. South Africa is the only country where you can purchase video games on the continent. My big vision is to let EA Games know that we are a formidable lot and there are those here who can compete in major tournaments and therefore urge them to license someone in the area,” says Komba. He notes that if one needs to purchase game rights or participate in online games, you have to pretend, through a Virtual Private Network (VPN), that you are living in the US, the UK or even the Emirates or purchase the games directly from those lands.

The perception that video gaming is a foreign concept and there aren’t many players lends substance to this exclusion of Tanzanians in the acquisition of rights to EA Games. But Komba notes that the gamers are growing in Tanzania. Gaming is still seen as a waste of time by parents whose children spend time at the dens, and the violence surrounding some of the games also put others off. As a business, it is not given much thought with some downplaying it as something anyone with a screen and a console can start.

The business of video games has, however, grown in numbers and many young people are making money out of this. There’s a huge range of gamers who can be found on any of our sites, says Lucky. “Our WhatsApp group has about 130 members, mostly active and

we have a huge following on Instagram and Twitter," says Komba. LuckyGamerz organizes at least 3 tournaments monthly but its gamers are invited to a lot of other events in which they compete.

Some of these are professionals who want to unwind after a hard day, while there are those who are more serious about gaming and are here for the money. They spend more time at the videogaming lounge in Mikocheni and their aim is to bet, to walk away with the prize during the tournaments. Then there are the students who spend their weekends at the game slots, seeking thrills after a hard week.

"To be recognized, we need to grow the numbers of gamers here and make it lucrative, a career type of thing before we can have anyone look our way," says Komba. He cites global players like Matthew Haag, popularly known as Nadeshot, an eSport guru, winner and creator of the gaming organization 100 Thieves as some of the people he looks up to in the business – and certainly the way he wants to grow eSports in Tanzania. Komba's dream is to send local players to the global FIFA eWorld Cup tournament one day.

LuckyGamerz is registered in Tanzania under the video game category and the company pays taxes based on its revenues. It is also a place for networking and solutions and supplies equipment to events which feature gaming as a side attraction.

THE MISSING LINK

A missing link in the industry are the developers as well as the interface with 3D modellers, animators and even musicians. Internet speeds are also a factor in gaming, pushing enthusiasts to use gaming centres like LuckyGamerz to play. Both Mageta and Komba note that there are no games developed locally that fit as competition material. Statistically, Africa creates only one percent of video games found globally, but there's an increasing emphasis that this should change across the continent.

One game that has been in the process of development and testing is *Kawaida's Journey*, a mobile game that explores the spirit of adventure in East Africa. Based on the adventures of Kawaida, a young vervet monkey, the game was developed by a team of German and Tanzanian developers with a focus on Swahili culture. In its creation, it fused elements like music from popular Bongo artistes Professor Jay and Ferooz, illustrations and 2D artworks as well as cultural creators.

Just like *Kawaida's Journey*, games with a social outlook, or those seeking to bring solutions to local problems are usually popular with developers on the African continent. A study done by two Tanzanian academics, Zitto Godfrey and Joel Mtebe in the *International Journal of Education Development* looked at the impact of digital games to enhance learning of mathematics in primary schools in Tanzania. Focusing on three popular games: *Ruka Kamba* (jump rope), *Manati* (slingshot) and *Kombolela* (hide-and-seek), the authors

developed the games “using eXtreme Programming practices and elements of game design” into eGames. They found that these games could enhance the learning of local subjects, if they were easily understood by the children. The games were later uploaded on Google Play Store for download.

There have been a handful of games set in Tanzania, like the racing game *Excitebots*, published by Nintendo, which features tracks like Kilimanjaro where fossils come to life. There’s also the *Cabela* series, published by Sand Grain Studios. It channels the idea of ancient Africa by focusing on hunting and player-objectives are to capture deadly animals. What is missing is the fusion of these ideas to formulate games that feature more of the African creators ecosystem, ensuring more local developers can be part of this.

There is so much room for growth for gamers in Tanzania. The ideas are there, the skills are growing. With facilitators like Komba and Mageta, the hope is that Tanzania will find itself a key player in the African space.

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“THIS INDUSTRY IS BIG, BIGGER THAN HOLLYWOOD”: EXPANDING GAMING AND PRODUCTION IN RWANDA

By Wangui Maina

GROWING INTO A DEVELOPER

Thomas Shiva, 27, loves playing games and invests most of his time popularising gaming in his home country of Rwanda and across the region.

His love for gaming started when his uncle gifted him a console; he was 8. Later he got a Game Boy where he played games such as *Tetris*, *Snake* and *Pinball*. With time he advanced to other more technical games and by 2011, just after high school, he got into competitive gaming. He has played hundreds of games today calling himself “a hardcore gamer” with a preference for action, fiction and simulation games.

“I got hooked to gaming when I got that first console and have never stopped. After high school I started playing in competitions to make money so I could afford a laptop powerful for gaming, and I did. The more I played the more I got exposed to different experiences, environments and it just opened up a new world for me,” said Thomas Shiva, who is the founder and CEO of Digital Realm Entertainment.

Today, he still immerses himself in playing games but is investing most of his time in developing games and popularising gaming in Rwanda, and the region. Together with like-minded gamers he co-founded Geniuses in Technology (GIT), which is one of the first fully fledged game development studios in Kigali. The company’s intention is to eventually have an eSport arena in the country that brings together gamers, and grow the industry in his country.

“Gaming here is seen as a childish thing, something that should be outgrown. People do not understand how this industry is big, bigger than Hollywood. Most people here play mobile games,” he said.

Increased internet penetration in the country has seen more Rwandans own smart phones and download games on their phones. According to the Rwanda Utilities Regulatory Authority’s (RURA) annual report for the financial year ending June 2019 internet subscription increased by 13.9% to 6.23 million, during this period, from 5.47million the previous year. Five years before the number of subscribers stood at only 10,000, and 2,024 in June 2012.

Affordable smart phone devises, flexible pricing of internet bundles, and the investment in infrastructure including the government sponsored fiber-optic cable expansion project have played a major role in increasing internet penetration across the country.

Part of the government's agenda is to make the capital city of Kigali an innovation centre in the region. The investment is bearing fruit as the first smart phones fully manufactured and assembled in Africa – from the motherboard to packaging – was launched in October 2019 by Rwanda's Mara Group.

CROSS BORDER COMPETITIONS

Robert Mugisha, a technology entrepreneur and gamer in Rwanda, says that increased internet penetration, and the fact that most of the county now covered by 4G has led to more people exposed to games, most on their cell phones, and in turn gaming. He notes there are gaming communities coming up across the country and this is a boost for the industry.

One such gaming community is ABAGamers, founded by Robert Mugisha under his first tech company Skyline Digital. Since its formation it has held various events, which attracts gamers of various ages, "from very young ones who come with their parents to mature gamers". They often hold competitions at KLab and in 2017 they formed a team to represent Rwanda in a regional gaming competition held in Nairobi.

According to Mugisha, the football game *FIFA 19* is the most commonly played game in the country followed by shooting games such as *Call of Duty* and *Fortnite*. The games are not only played by boys and men – there are female gamers and even developers.

Under his company Dope Apps, which was launched in 2016, he has come together with other gamers to develop a new 3D video game called *Keza*. Launched in October 2019, this is a social impact game in Kinyarwanda on sexual and reproductive health.

At the end of its development *Keza*, meaning the beautiful one, will be in three parts. The first part is of a young person running the streets of Kigali, almost similar to Subway Surfers. This builds into the main part of the game where if the player wants more life, or amenities s/he will have to take a quiz on sexual and reproductive health such as teenage pregnancy and safe sex. Eventually, the developers are looking to incorporate chatbots which the player, girl or boy, can ask any questions.

"It will take us a while to finalise all these stages but we are committed to this. We want the youth to be able to learn in the process of playing games, we see the possibility of growing beyond sexual health to add other social issues such as drugs," said Mugisha during a phone interview. "We want the game in French, English and Kinyarwanda so it can reach many people."

SHOWCASING AFRICA

In December 2019, Mugisha's prototype of the game received an award in a local Rwandan competition organized by Imbuto Foundation. The competition was founded by the First Lady of Rwanda Mrs. Jeannette Kagame and it manages the Innovation Accelerator (IAccelerator) which recognised the role of *Keza,* a game for social good. This was the second phase of the competition with the first being held in 2016.

“We are hoping to launch the game by October this year,” he said.

Despite the growing gaming community in Rwanda there are no laws governing the industry. From the government's standpoint, gaming mainly covers sports betting or gambling. In 2013 the Rwanda Gaming Corporation was established to set up regulations on gaming in the country, mainly covering gambling. As sports betting has grown the government has been relooking at its regulations.

With little support from the government, early adapters like Thomas Shiva and Robert Mugisha continue forging on to showcase the importance of gaming as eSport in addressing social issues and they demonstrate that it can be a major income earner for individuals and corporates.

“I want people to love gaming, if we get more people interested, we can grow the industry and even get advertisers in the region interested and to invest. Africa is not considered a gaming market, my goal is to bring Africa into the global stage and showcase African games to the world,” Thomas Shiva concluded.

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KENYA, TANZANIA, RWANDA: ONWARD TOGETHER, FORGING AN INCLUSIVE COMMUNITY

By Wanda Nyairo

EXPANDING COMPETITIONS

Despite the fact that regulation pertaining to gaming, not betting or gambling, is lagging behind in the region, especially in Tanzania and Rwanda, the stories of people we interviewed for this project demonstrate that gaming is here to stay and that there is credible potential in the market. Not only are more people becoming recreational gamers – thanks to increasing internet penetration and the proliferation of gaming cafés – but there's also a growing number of local developers and entrepreneurs who are creating games and organizing competitions, thereby strengthening the professionalism of gaming within the region.

Competitions and tournaments seem to be the key to growing the gaming industry in all three countries because apart from creating employment, they provide a way to create visibility for eSport and they generate revenue through advertising and the sale of tickets to spectators. Additionally, competitions build a community of practice amongst gamers who find like-minded people and revel in the social connection. Equally important, these competitions also provide the perfect setting for emerging local developers to exhibit their games, have people play-test them to get some feedback, and gain more exposure.

Kenya seems to be leading the charge in this field with large corporations such as Safaricom sponsoring competitions and national television channels like KTN broadcasting the 2019 Africa eSports Championship. That said, dedicated gaming communities – such as ABAGamers in Rwanda founded by Robert Mugisha, and LuckyGamerzTZ in Tanzania founded by Lucky Komba – are hosting local competitions, proving that small-to-medium enterprises and individuals, not just large corporations, have an important role to play in shifting the culture of gaming. And competitions are not just limited to the residents of each country, cross-border competitions are commonplace, with teams travelling to-and-fro to compete and so eSports are another site through which the ideals of the East African Community, and an East African identity, are being forged.

More robust sponsorship of competitions could go a long way in creating larger pools of prize money, lowering entry costs for gamers, manufacturing merchandise to gift to teams – or even to sell to spectators – and ensuring that players can have free water and food during events. Moreover, to strengthen the regional gaming community, funds could be created for teams to travel to different locations, which could lead to more teams and countries participating in large events like the Africa eSports Championship.

CENTERING WOMEN

In thinking about small-to-medium enterprises, gaming cafés come to mind as one of the most significant shifts in the culture of gaming. Gone is the reputation of solitude and anti-social pursuit as gamers assemble in a public space that allows them to share resources, ideas, energy and lower the cost of the sport so as to popularize it to a wider base. One thing that is common in all three countries is that majority of gamers and developers are male, despite the fact that gaming cafés, as well as competitions and meetups, are open to everyone.

Given the fact that the global gaming industry is male-dominated – according to the International Game Developers Association, in 2017 women made up just 22% of game developers worldwide – this might not come as a surprise. However, it's critical that inclusivity and representation are made a priority in this region now while the gaming industry is still young and malleable. We must think of ways to support seasoned female gamers and developers as well as how we can encourage their counterparts that are newer to the scene, because it is unrealistic to expect more girls and women with no experience in gaming to become part of an industry where they see few role models.

So how can we do this? Tir Baba, the owner of a gaming café in the Jamhuri 2 housing estate of Nairobi, mentioned that young women usually come to his gaming café in pairs or groups – "*na beste*". This practice speaks to the greater experience of how girls and women everywhere and throughout time, have developed strategies for feeling and being safe in public in general. To ask how to make young women feel more comfortable and included in a gaming café, is to ask how to make women feel more comfortable and included in public spaces in general. And that's a huge question.

But we do need to think about the ways women have been made to feel unsafe, excluded, and discriminated against because it's highly likely that these young women are reluctant to go to gaming cafés alone, or frequently, because of what they have been taught, particularly by older women, about how to protect themselves in public, and also because of what society tells them they should spend their time doing or are capable of doing.

It's often difficult to envision or even describe inclusion and representation in its ideal state but society, and individuals, have endless examples of what discomfort, exclusion, and discrimination feel like, so that might be the place to start in unpacking all this. In the case of gaming cafés, we know from Tir Baba's account that these young women wouldn't feel comfortable going alone or without at least one person that they know.

I didn't witness it, and Tir Baba didn't mention what it's usually like once these young women are in there. It's probable that they feel hyper visible since they are the minority, and that can shake someone's confidence both socially and competitively when they're actually playing a game. And if these young women are not playing as well as they know they can, other patrons

might be reluctant to give them a turn or play against them – people generally enjoy watching and being part of tight matches that get their heart racing and their blood pumping.

What incentive can be created for patrons to encourage a more balanced gaming atmosphere? Perhaps discounts to patrons who come to play as mixed pairs or groups. This could be taken a step further to ensure not just presence, but active and valued participation of female gamers. Owners could create tournaments within the café where entry is dependent upon male players teaming up with female players – basically a mixed-doubles tournament. No one wants to be left out of a competition, especially if there's something to win, even something as simple as bragging rights! And if the owners really want to incentivize their patrons, the prize could be something like 10 free hours of gaming for the winners to be claimed over the next month.

The point of all this is to firstly, increase the presence of girls and women in these cafés and get everyone used to being in more balanced company. Normalizing the presence of budding female gamers could then help them feel more comfortable and confident playing in front of male gamers who are presumably more experienced. If they're getting adequate screen time then their confidence level is sure to increase just as their skills do, hopefully meaning that at some point everyone will see each other as equal and talented opponents. Instead of scoffing at the idea of pairing up with a girl who they might have earlier assumed isn't a good player, male patrons will have had the chance to see these newer female players in action and should be more convinced that such a tournament will be a true test of skill and show of passion. And once female gamers become regulars at these establishments, we can be more hopeful about seeing more female gamers in larger local and regional competitions.

None of these are guaranteed solutions and they might be overly simplistic, but at this stage, it wouldn't hurt to try. And perhaps the same thinking process – describing the discomfort, exclusion and discrimination in order to engineer the opposite – could be applied to the developer and entrepreneur side of the equation so that solutions to bringing in more women are identified.

EXPANDING EDUCATION

Apart from creating more opportunities for female developers and entrepreneurs, there are other factors that need to be addressed on the creative side of the gaming industry. One of the biggest gaps in all three countries for aspiring developers seems to be education. Not only are there few options available at the tertiary level in the region, but also the cost of the training programs can be an obstacle.

Kenya's Africa Digital Media Institute (ADMI) offers a Bachelor's degree in Video Game Design and Development from Rubika in France and the fees are KSh 400,000 per year for this 3-year program. Although the fees can be paid in installments, this is a huge financial commitment, and given that the gaming industry is still maturing and that many experienced

developers don't always see their efforts reflected in their income from game development, people might be dissuaded from applying.

Scholarships could help lower these barriers to entry and having more programs like these – programs through local institutions that partner with foreign institutions that offer robust degree programs in the field of game design and development – will help ensure that there won't be cutthroat competition due to a disproportionately high number of applicants to spots available. The University of Cape Town (UCT) and the University of Witswatersrand (Wits) in South Africa could be institutions to partner with as both offer Bachelor's degrees and courses that could put one on the path to becoming a professional game designer.

UCT's Faculty of Engineering & the Built Environment offers a Bachelor's degree in Computer Science through which students can enroll in two semester-long courses on Computer Games Development. For those more interested in the technical side of game design and development, Wits offers a Bachelor of Engineering Science degree in Digital Art through the School of Electrical and Information Engineering. And for those more interested in the creative side, the Wits School of Arts offers a Bachelor of Arts degree in Performing and Visual Arts majoring in Game Design.

Other opportunities for education can be created by leveraging the reputation, knowledge, and networks of gaming communities and organizations. These communities, in all the three countries, are filled with dedicated gamers and they already host tournaments and meetups, among other things, so perhaps workshops could be what they add next to their list of organized events. Getting in touch with developers or animators and having them host workshops where they introduce participants to the basic principles of programming or teach them the basic elements of drawing – a skill that is required for most degree applications, including the one at ADMI – could be a great way to give aspiring developers exposure to the process of game design. This exposure could help someone decide whether they want to pursue game development further – enough for them to commit to a course or degree program. Depending on what is being taught, office space, computer equipment and high-speed internet are resources that would need to be sourced. These needs are opportunities for funding or lending that other business could take up.

One interesting thing to note is the popularity of social impact games in this region. *Keza*, a 3D game in Kinyarwanda about sexual and reproductive health, was produced by Dope Apps and launched in 2016. In 2018, Tanzanian academics, Zitto Godfrey and Joel Mtebe converted popular local analogue games like *Ruka Kamba*, *Manati* and *Kombolela* into digital games to study whether and how games enhance children's numeracy skills and impact their learning of mathematics. And in Kenya in 2012, Nathan Masyuko developed *Haki – Shield and Defend*, a game about environmental rights where players protect trees from illegal loggers.

Games are certainly a form of art so it follows that developers use the medium to communicate social issues. However, given the less positive societal attitudes towards gaming, both as an activity and as a profession, perhaps developers also gravitate towards creating these sorts of

games as a way to soften attitudes about gaming. Could it be that creators feel that if people can see that games are a platform for learning, introspection, and debate then perhaps they will also see the immense value of games?

(RE)BUILDING THE HARDWARE

The ethnographic gaze present in games set in Africa is a matter of concern. The racing game *Excitebots*, published by Nintendo, features a racing track named Kilimanjaro where fossils come to life. And in *Cabelo*, a game published by Sand Grain Studios, players encounter scenes that elicit the idea of ancient Africa where they must hunt and capture deadly animals. In foreign-made games like these, images and ideas of Africa are limited to landscape and pre-history with little to no inclusion of local sounds – like music or language – or depictions of African people. Just as representation of women matters in local gaming economies, so too do credible representations of Africa and Africans. Locally made games are therefore, crucial. Both local and global gaming communities deserve to experience depictions of Africa made by Africans. Until then, given the consumption of games by Africans, we must question the process that foreign developers take to arrive at their decisions about how to represent Africa and its people. We must claim a part in that process. What's needed are more collaborations between foreign developers and local developers, who deserve to be engaged in global creative processes that value their talent, input, and experiences as much as those of their foreign counterparts.

However gamers, developers, and entrepreneurs choose to proceed as the industry matures – with the help of governments, small-to-medium enterprises, large corporations, and educational institutions – the goal should always be to remove roadblocks, foster innovation, and prioritize inclusivity. If there is one thing that the current COVID-19 global pandemic has taught us, it is that individual countries need to master the manufacturing of anything viewed as essential to the well-being of its people.

Gaming has become more central to middle-class efforts in the #StayAtHome campaigns. At the same time, remote digital learning has become a requisite for all school-going children the world over. In these circumstances, we must think of ways to ensure that those who used to flock to the now-closed gaming cafés will also have the chance to bring the gaming experience closer to their homes as #StayAtHome prevails, and should the world ever be faced with something like this again. Rwanda's rapidly expanding subscriber base and its homegrown cell phone are pointers to how far the technology industry can develop in this region, and how many people it can reach, especially when cost isn't a barrier. Perhaps in the future, hopefully not too distant of a future, Africa can begin manufacturing its own gaming hardware. That would be dramatic a game-changer.

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