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Forbes AFRICA

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LIST: 100 INNOVATIONS, INVENTIONS
AND ICONS FROM AFRICA

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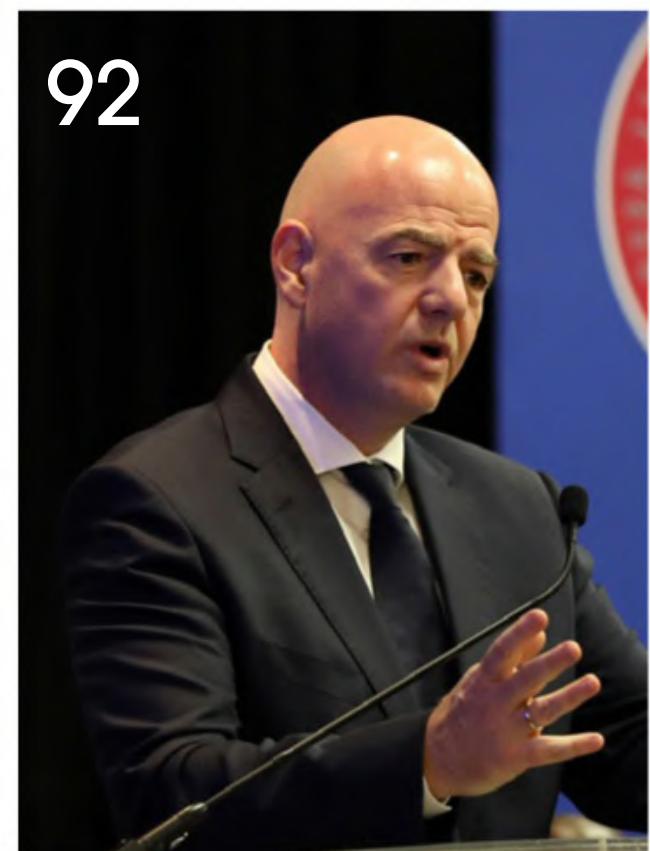
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By Nick Said



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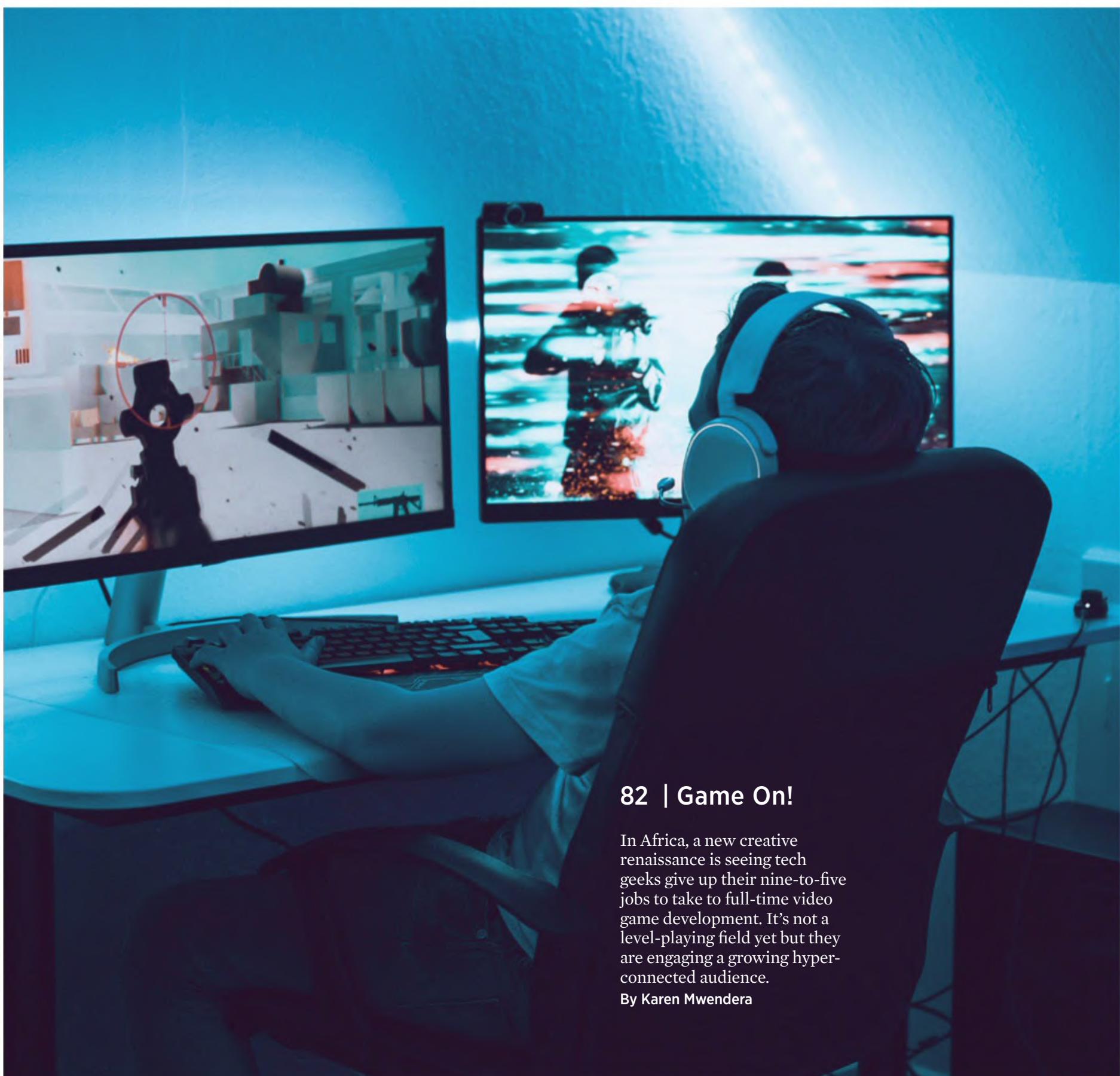
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In Africa, a new creative renaissance is seeing tech geeks give up their nine-to-five jobs to take to full-time video game development. It's not a level-playing field yet but they are engaging a growing hyper-connected audience.

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CÔTE D'IVOIRE, YOUR GATEWAY TO WEST AFRICA

Looking to reach West Africa's 388 million dynamic young consumers? Côte d'Ivoire is the obvious choice. South African businesses, such as Randgold, Standard Bank, and MTN, are prospering in West Africa's most vigorous marketplace.

The world's top cocoa and cashew producer and Africa's principal exporter of tropical fruit, Côte d'Ivoire is also Francophone West Africa's leading economic and financial hub. With the fastest growing economy in the region, its marketplace is vibrant, sophisticated, and an ideal springboard to the region.

Moreover, government's commitment to attracting foreign investment has made Côte d'Ivoire the easiest West African country in which to start a business. The process takes a mere 6 days, and less than 40 Euros.

WHY CÔTE D'IVOIRE?

Clear and Transparent Investment Code
Côte d'Ivoire's Investment Code provides enhanced security and a wide range of competitive tax and fiscal benefits. Its straightforward framework makes investment decisions simple and secure. That's why foreign direct investment in Côte d'Ivoire reached over US\$1 billion in 2019 alone.

World Class Infrastructure

With two major ports, comprehensive road and rail networks, a world class international airport and 26 regional airports, moving goods and people in Côte d'Ivoire is easy. Additionally, a robust electrical grid and well-developed telecommunications sector keep you open for business around the clock. Whether you aim to reach local customers or a regional market, Côte d'Ivoire's robust infrastructure supports your endeavours.

Gateway to the Region

Côte d'Ivoire is a member of the Franc Zone, an economic union of 15 West and Central African countries whose currency is pegged to and convertible with the Euro. The Franc minimises exchange rate risks, providing savvy investors stability and flexibility to repatriate earnings.

It's also a member of the Economic Community of West African States (ECOW-



Patrice Mallet, Economic and Trade Representative to Southern Africa

“

Choosing Johannesburg for our first Economic and Trade Office in Africa is proof of government's commitment to increasing trade and economic cooperation with this region.

AS). The ECOWAS free trade zone means products manufactured in Côte d'Ivoire are distributed throughout the region.

INNOVATIVE INVESTOR SUPPORT

In 2013, Côte d'Ivoire created an Economic and Trade Office for Southern Africa in Johannesburg, South Africa with a view to support and facilitate your entry into the Ivorian marketplace. The Economic and Trade Representative, Mr. Patrice Mallet, and his team inform, advise, and assist your business – from prospecting to investment.

Having spent over 15 years working on ICT and infrastructure at the World Bank Group in Washington, DC and New Delhi, India, and more than 13 years working with both the Gauteng Fund and the private sector in South Africa, Mr. Mallet knows the unique strengths

and requirements of South African businesses, international financiers, and the Ivorian authorities. His strong relationships and goal-oriented approach to investment enable Mr. Mallet to help you deliver results.

Since the office's opening in December 2013, Mr. Mallet has helped some of South Africa's leading businesses – including Standard Bank and WBHO – make Côte d'Ivoire home. As a result, these companies are offering innovative, world-class solutions to Ivorian business and government. They're also making it easier for other businesses from the SADC region to penetrate the Ivorian market.

The Economic and Trade Office team also supports Ivorian businesses seeking to procure equipment or sell products and services in Southern Africa. Amongst other accomplishments, Mr. Mallet and the team have:

- Worked with authorities in both countries to allow Ivorian bananas to be imported into South Africa;
- Supported an Ivorian business in procuring US\$14 million of equipment in South Africa; and
- Assisted an Ivorian business in identifying a South African partner and signing a US\$256 million construction contract.

If you aspire to penetrate the West African market, Côte d'Ivoire is your destination of choice. Let us contribute to your success.

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CÔTE D'IVOIRE ECONOMIC & TRADE OFFICE
Southern Africa



Reloading The Continent

IF YOU HAVE TRAVELED THROUGH AFRICA, there are some indelible impressions on the mind's eye that no Virtual Reality headset or 4IR can ever recreate. The thick green forests with tall foliage and wet earth in equatorial Kenya, the overwhelming scent of cinnamon and cardamom in the spice gardens of Zanzibar, the chilli plantations up the verdant hills of Rwanda, the inebriating vineyards of Stellenbosch in wine country South Africa, the swaying sugarcane plantations in wind-swept Mauritius, the salty, surf-sprayed beaches in KwaZulu-Natal or the saccharine-sweet air at Jinja by the source of the Nile in Uganda.

Covid may have restricted our travel sojourns, but my mind can instantly conjure and call up these vistas that I have inhabited on my many visits into the lush continent from Johannesburg.

Somehow, editing this issue of the magazine gave me the same highs and highlights a travel experience would have.

There is nothing that spells out A.F.R.I.C.A more than this issue of FORBES AFRICA, a landmark edition, which is the 100th issue of the magazine since its inception in October 2011. We have come a long way as the voice of entrepreneurial capitalism on the continent, and in this particular issue, I saw an encapsulation of all that we have consistently reported: African ingenuity, resilience, enterprise and innovation.

The cover story is a compilation of a hundred ideas and icons that have intrigued our collective conscience, knowingly or unknowingly, over the last decade. Through the research conducted by our team for weeks and the revelations that came off it, they took me to the deep innards of the continent, discovering and

exploring the vistas I am yet to see – or couldn't see last year.

The new generation of thinkers, doers and problem-solvers – one as young as 10 – that have cropped up on the continent in the last year, is coming up with indigenous ways to combat a global problem. It's still work-in-progress for many of them, but it's the spirit of creation that suffuses and occupies them. Necessity is truly the mother of invention, as Covid-19 has forced us to have the tough conversations.

I heard the water gushing from the ingenious taps they created, I felt responsible artificial intelligence in medicine, I experienced the solo technology chambers that can check my temperature and Covid symptoms in one go, and I saw all the colors of the continent unfolding in the pages of the story.

"Creativity takes courage," Henri Matisse, one of the undisputed masters of 20th century art, has said, and we are now the true and absolute creators of our future.

As we build our collection of FORBES AFRICA, this is the rich cast of characters that have peopled it, and will continue to, in the years to come, as we also look forward to celebrating our 10th anniversary in October this year.

These are the thought-leaders putting together an architecture for a new world order, often living from despair to disaster, and yet succeeding. This issue, with 'the list of lists', is about connecting multiple generations with a coalition of ideas, and uniting global names to harness their collective knowledge.

It makes you feel optimistic about the future, despite the challenges African economies still face in the equitable rollout of vaccines.

The uptick in economic activity and sentiment was echoed in a recent survey of global CEOs by PwC that reported them as voicing record levels of optimism in the global economic recovery.

This collectible issue is one that captures that hope, fervently and in anticipation of what tomorrow will bring. 



RENUKA METHIL,
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THE 100th ISSUE And Celebrating Change

BY RAKESH WAHI, FOUNDER AND PUBLISHER, FORBES AFRICA

I LOVE MILESTONES AND rejoice each one. We have so many challenges in our lives, therefore, we must stop to rejoice moments that fill us with pride. This is the 100th issue of FORBES AFRICA and we joyously celebrate this occasion even as the publishing industry remains battered after a bloodbath of unmeasurable losses; both tangible and intangible. Well done to Renuka Methil, Sid Wahi, Roberta Naicker and the fantastic team at ABN Publishing and FORBES AFRICA; you folks are the best.

For each of us, there are some places that have a sublime effect on our mind. Away from the hustle and bustle of urban life, this is the retreat we look forward to; sometimes drawn by childhood memories. These memories are reflective of a time when the world was simplistic, with low expectations and when we had the patience to deal with a four-hour power outage or when the bus or train service was disrupted by a day. This place for me is Dehradun, what was once, in the 1960s and 1970s, a small town in India known for its 'green hedges' and 'grey hair'. Tucked away in the Doon valley in the foothills of the Himalayas, this place is today home to the winter capital of Uttarakhand, a state that was formed in 1998 and received its current name in 2006. This town has been my mother's maternal home for four generations and it takes no convincing when I request that we travel to Dehradun; an unconscious calling draws our family to this quaint town. Related to this, I went to school there, as did my son and many other members of our family and extended family.



During my trip in January this year, I had the chance to visit a polytechnic that my mother had set up 33 years ago. The administration had recently named the main academic block after her (Shobhana Wahi Block) and honored her by hosting an in-person reception in the middle of Covid. I was concerned for my mother's safety and had specifically requested our host to ensure social distancing, in particular, avoidance of any physical contact. These instructions lasted for about 60 seconds; in attendance were female students from 1987 who had graduated from this institution and who were teaching there now; their emotions and overwhelming need to take my mother's blessings by touching her feet made it impossible to stick to any protocol. Through my

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The most significant parameter that I see change is in the mindset of men. I don't believe that there is any man in any position of significance, who will make the mistake of speaking against gender equality.

blurred vision of flowing tears, I watched in awe and pride, a biopic produced on her service to the needy and selfless contribution championing the needs of women and children at a time in history when these values had not percolated outside of the four metro cities of India.

The afternoon ended with chants equating her to Mother Teresa and I returned home with this metaphoric giant of a woman, frail in her fading years, who I am proud to call my mother. The visit personified two important lessons: first, true wealth is in your name and how it is remembered, and second, the importance of relentlessly working towards ending historic gender disparity. Perhaps my calling for this topical subject in genetic.

An event that brings great joy to me each year is the annual FORBES WOMAN AFRICA Leading Women Summit (LWS). The event is anchored around one of our flagship brands, FORBES WOMAN AFRICA, and has been curated by the dynamic ladies at the ABN Group; especially Roberta Naicker, Renuka Methil and Jill De Villiers. The foundation of this event is built on very strong values; specifically, walking the talk on equality in every measure.

This annual event on International Women's Day (March 8) is to take stock and serve as a reminder that we are on a long journey that is peppered with some serious challenges from historic incongruity. I recognize that the needle is moving but the pace of change is varied for different parameters and sadly, some, like financial inclusion, are very slow.

The most significant parameter that I see change is in the mindset of men. I don't believe that there is any man in any position of significance, who will make the mistake of speaking against gender equality. Whether it's peer pressure, social media or genuine transformation, this is a major shift as even the snide remarks have faded into inaudible whispers.

Significant discussions are taking place on the corporate side but the part that I believe needs crucial work is in the role of parents. The disparity unconsciously starts with hypocrisy from a child's birth. Sons are believed to carry the name and legacy of a family and therefore celebrated differently and through their lifetime allowed opportunities and latitude not afforded to daughters. The easy fix is ensuring proper education for the girl child.

Education is the greatest enabler of parity and ensures that women are qualified and not disadvantaged while competing for

opportunities. The second need is educating sons through proper counseling. Coming from a matriarchal society, I know that mothers have a very significant and long-lasting impact on their children. Both parents, particularly mothers, need to educate their sons on the important role that women play and teach their sons to be respectful of all women in their lives including, if needed, to discipline their sons appropriately.

A father's conduct is perhaps the most important in setting the right example. A father's conduct with women in general, but more so with his mother, sisters and wife, is watched by his son who takes that to be a default setting. Disrespect begins from one's childhood and is a systemic failure in a man's conduct.

For the last two years (2019 and 2020), we hosted LWS in Durban, in the KwaZulu-Natal province of South Africa. Women from all over the continent, and some from different parts of the world, flew in to participate in what to my mind was a fantastic conversation around needs but more importantly, success stories of women who have become an inspiration to future generations.

As an event, LWS 2020 was the demarcation of our business into the pre- and post-Covid era. South Africa's first case of Covid-19 was announced in Durban on the eve of the summit last year; yet, we pulled it off with resounding success with over 1,000 attendees. That seemed like fiction after we completed LWS 2021 as a virtual event. It's incomprehensible that a year has passed and so much has happened and more importantly, changed.

With over 1,900 attendees from 103 countries, our sixth LWS event on March 8 and 9 this year has been our most successful and no one has left their homes to make it happen.

The speakers from all over the world were amongst leading women from diverse fields. The highlight was the closing keynote interview with Ngozi Okonjo-Iweala, the newly-elected Director-General of the World Trade Organization who joined the event with other stalwarts including but not limited to the former President of Mauritius, Dr Ameenah Gurib-Fakim, and one of Africa's wealthiest women entrepreneurs, Folorunso Alakija. The conversations were in-depth and inspirational; evidenced by the vibrant comments in the virtual chat room that I enjoyed being a part of. Glowing tributes were paid to the speakers by future generations who are looking up to these great trail-blazers.

I am really proud that we have provided a platform for fearless dialogue as well as recognition of excellence in various categories through an awards ceremony that is now integral to this glittering annual event.

Isn't it a blessing that we celebrate the achievements of women in our 100th issue? This is a sign of change; let us celebrate it. 



| ‘If You Want To Change The World...’ |

“**I**’M A FIGHTER. I’M THE KIND OF PERSON THAT for better or worse runs towards a problem and tries to solve it even if it’s in a burning house.”

These powerful words come from 31-year-old Somalian-Canadian activist, Ilwad Elman, who spoke at the 6th FORBES WOMAN AFRICA Leading Women Summit on March 8. The 2021 Nobel Peace Prize nominee spoke about her natural instinct to invoke change.

The daughter of entrepreneur and peace activist Elman Ali Ahmed and social activist Fartuun Adan, Elman says once the Somalian war broke in the 1990s, her parents had to make the difficult decision to split up. Adan took Elman and her sisters to Canada where they were refugees, and Ahmed stayed in Somalia fighting for peace.

“My father was killed in pursuit of peace,” Elman said. “But his slogan ‘drop the gun, pick up the pen’ can still be seen marked on the streets of Mogadishu 25 years after his death.”

And this has inspired Elman all her life.

At the age of 20, she co-founded Somalia’s first rape crisis center. Since then, she has become a champion for peace and security giving all those impacted by conflict –

particularly women and girls – a seat at the table. Through her organization, the Elman Peace Centre in Mogadishu, Elman has created a methodology for community-based peace-building in contexts of ongoing conflict that is now being exported to conflicts across Africa.

“So if you want to change the world, you need to first know and search within yourself with deep humility, zero egos, and profound clarity,” Elman said.

Also proposed this year as a Nobel Peace Prize nominee is Hajar Sharief, a Libyan peace and human rights activist. She co-leads the work of the Together We Build It (TWBI) organization in Libya. In 2011, and at the age of 19, she co-founded TWBI to build peace in Libya and promote human rights. One of UN Women’s 12 Champions on Women, Peace and Security and Human Rights, she is a member of the Extremely Together young leaders, an initiative by Kofi Annan and the Kofi Annan Foundation, and in 2020, was named by FORBES AFRICA as one Africa’s 50 Most Powerful Women along with Elman. **F**

– Watch the full video of Ilwad Elman’s talk at the 2021 FORBES WOMAN AFRICA Leading Women Summit on forbesafrica.com

Quotable quotes from the 2021 FORBES WOMAN AFRICA Leading Women Summit

Africa Reloaded: The Power of The Collective was the theme of the 6th annual FORBES WOMAN AFRICA Leading Women Summit held as a virtual event on March 8 and 9. Some of the memorable lines from the unique collection of female powerhouses that attended from around the world:



"Only six black women have been crowned Miss Universe in the past 68 years... it's because of the five women before me that I get to wear the Miss Universe crown. I am the first black Miss Universe to win with her short natural hair or what I call my natural crown."

- Miss Universe 2019, Zozibini Tunzi



"For me, my dad is from South Africa and many of my family members have been affected by apartheid and displaced. So there was a personal resonance where people don't feel welcome in their home. During Covid, refugees are the most vulnerable during this time and we must have empathy and understanding because nobody is really safe until we are all safe."

- Gugu Mbatha-Raw, British actor and UNHCR goodwill ambassador



"Going through a civil war as a young person is difficult... I never want to see a young child go through that. Survival, that's the most important when you are going through that situation... As a person, you don't have to be a supermodel or a celebrity to make a difference... That's why I like what you, FORBES WOMAN AFRICA, are doing by using your platform."

- Alek Wek, British-Sudanese supermodel and designer



"70% of women are frontline workers... but where there were drawbacks was that women were not at the forefront of policymaking."

- Dr Ameenah Gurib-Fakim, biodiversity scientist and former President of Mauritius

"I call myself a womanist... and that is because I have this tremendous admiration for the way women handle so many issues on our continent. At the same time they are farmers, they are entrepreneurs, they are earning incomes and they are also taking care of their families. But from a policy point of view, the government needs to look at the gaps in supporting women's empowerment. How do we give women the tools they need to participate in the economy?"

- Ngozi-Okonjo Iweala, Director-General of the WTO



"I wanted to change the narrative of the African child... this journey led to Nepal to summit Mount Everest... I knew deep inside that I was enough to step on top of the world."

- Saray Khumalo, South African explorer

Missed out on #LWS2021? Check out all the exclusive talks, panel discussions and interviews on forbesafrica.com.



Rwanda Lays Ground For Space Technologies

There a new view from atop Rwanda's beautiful green hills – that of new hopes and dreams in outer space.

On March 12, the country's parliament, in a virtual sitting, voted a law establishing the Rwanda Space Agency (RSA) to act as a driver that will propel Rwanda into a new era of space technologies.

"We are convinced that this is a great move the government has made to establish a foundation to take us into an era of technologies that will drive transformation," Damien Nyabyenda, a member of parliament leading the committee that reviewed the law, tells FORBES AFRICA.

"We also thought it was critical for Rwanda to deliberately invest in technologies that other [developed] countries have invested in for a long time, giving us an edge in the end."

The industry that Rwanda is preparing ground for is worth billions globally, and estimated to register remarkable growth in the next five to 10 years.

As Joseph Abakunda, the Chief Strategy Officer at the new agency, pointed out, Rwanda is convinced having a space agency means advancement of the socio-economic landscape at a time space technologies have become democratized, and to some extent, more affordable.

"We believe the space sector is the next frontier for innovation," he tells FORBES AFRICA.

Rwanda's vision for a national space program is to catalyze the development of a space economy.

"Our activities will primarily focus on the downstream economy of the sector such as utilizing satellite data to improve our agriculture output, which employs over 70% of our population," says Abakunda.

- By Julius Bizimungu

SHO MADJOZI ON CULTURE IN NEW SONG

South Africa's Limpopo-born award-winning singer and FORBES AFRICA 30 Under 30 alum, Sho Madjozi, released her latest song and music video, *Shahumba*, which features the legendary Tsonga singer and producer, Dr Thomas Chauke. It tells the story of a young girl navigating life in her hometown and the special relationship she has with her father, who has influenced her musically. In this story, the *John Cena* artist pays homage to her Tsonga culture. Madjozi has said that she felt like Chauke contributed immensely to the development of the Xitsonga language, so it was only fitting that he featured in the reflective video.



RUGBY WORLD CUP POSTPONED

At the beginning of March, World Rugby announced the organization had made the decision to recommend the postponement of the Rugby World Cup, which was scheduled to be hosted in New Zealand between September 18 and October 16, until next year due to the evolution of "the uncertain and challenging global Covid-19 landscape".

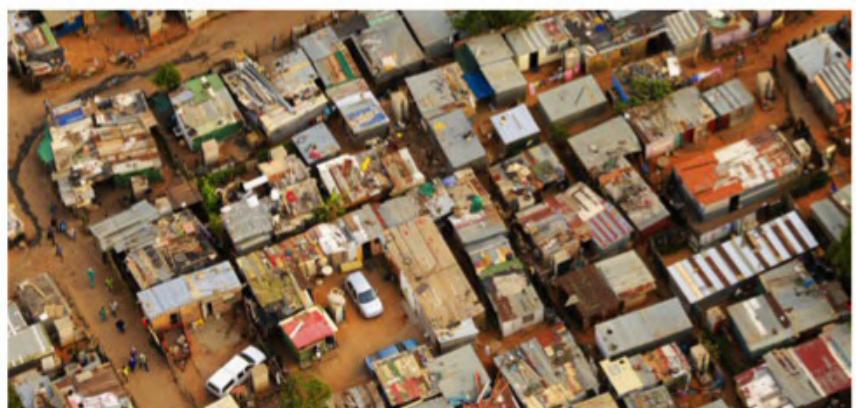
The Springbok Women's team recognized this decision even though they were disappointed by the news "especially after all the hard work the team has been putting in since last year in preparation for the tournament," said SA Rugby CEO Jurie Roux.

However, World Rugby said on March 16 that they are launching a new global women's 15s competition to "supercharge" the sport. The annual WXV competition, which will start in 2023, will have three tiers and is aimed to accelerate the development of the women's games ahead of the expanded Rugby World Cup in 2025. World Rugby will invest £6.4 million in its first two years.

Africa Growth Prospects: Poverty Remains Huge Concern

The African Development Bank (AfDB) recently released the 2021 *African Economic Outlook* report indicating that the average debt-to-GDP ratio for Africa is expected to climb by 10- to 15 percentage points in the short-to-medium term. Although the economic impact of the pandemic varies across economic characteristics and regions, the projected recovery is broad-based. However, with that said, poverty still remains a huge concern on the continent. The report found that an estimated 39 million Africans could possibly slip into extreme poverty this year, following about 30 million who were pushed into extreme poverty in 2020 as a result of the pandemic. The report also finds that populations with lower levels of education, few assets, and working in informal jobs are the most affected and must be protected.

In early March, *Global Finance* named the AfDB the best multilateral financial institution in the world, a recognition of its efforts to provide its clients – its 54 regional member countries – with support in financing their development.



BILLIONAIRE PATRICE MOTSEPE NEW FOOTBALL CHIEF

South African mining billionaire Patrice Motsepe was elected the new president of the Confederation of African Football (CAF) at the beginning of March.

"Africa needs collective wisdom, but also the exceptional talent and work of every (national football association) president and every member nation," Motsepe said in a statement released by FIFA. "When we all work together, football in Africa will experience success and growth that it has not enjoyed in the past."

Motsepe will not only lead a revised African confederation but an organization that will see substantial change at CAF Executive Committee and FIFA Council level (*for more on football, see pages 92 & 93*).



COVID-19 BURDEN FELT MORE BY WOMEN

An analysis done by PwC's annual *Women in Work Index* shows that progress for women in work could be back at 2017 levels by the end of 2021 as a result of the pandemic. The index further shows that globally, the damage from Covid-19 and the government response and recovery policies are disproportionately being felt by women.

"The setbacks that we are experiencing with Covid-19 in terms of the workforce tell a worrisome story. While the impacts are being felt by everyone across the globe, we are seeing women exiting the workforce at a faster rate than men," said Bhushan Sethi, Joint Global Leader, People and Organisation at PwC in a statement.



SOUTH AFRICA DOCUMENTARY AT OSCARS

My Octopus Teacher, the South African Netflix documentary, has been nominated for an Oscar in the best documentary feature category.

The 2020 Netflix original by Pippa Ehrlich and James Reed is going up against four others in the category. Filmed in 2010, the documentary follows the life of Craig Foster who spent time cultivating a unique bond with an octopus in a South African kelp forest in False Bay near Cape Town.

"If you gain the trust of that animal over a period of months, it will actually ignore you to a certain degree and carry on with its normal life, and allow you to step inside its secret world," Foster told CNN.



Big Night For Africa

Aside from the fact that South African comedian, Trevor Noah, hosted the 63rd Annual Grammy Awards on March 15, Nigeria's biggest artists, Wizkid and Burna Boy, took home Grammys. Burna Boy won the Best Global Music Album award and accepted the award from his home in Lagos, Nigeria. "This is a big win for my generation of Africans all over the world," he said. Wizkid won Best Music Video in collaboration with Beyoncé and her daughter Blue Ivy Carter (9) for *Brown Skin Girl*.

Moderna Vaccine Trial In Kids

According to *Forbes*, Biotech company Moderna announced on March 16 that it has given the first doses of its mRNA Covid-19 vaccine to young children as part of a new study to test how effective the vaccine is in kids. The study is called KidCOVE and will be conducted in collaboration with the National Institutes of Health. This will test the vaccine on 6,750 kids ages six months to 11 years old.

– Compiled by Chanel Retief



TASTE THE PRIDE IN EVERY CUP



NESCAFÉ RICOFFY has been a part of South African lives for over 50 years, and we are taking steps to ensure that we will be around for many years to come. To us, sustainability means more than knowing the origin of our coffee beans. It means we take great pride in being able to contribute toward creating and enriching shared moments that stir pride in people's hearts. Small victories that can go on to uplift communities and create long lasting impact from beginning to end.

We are proud to announce that from source to cup, our coffee beans are now 100% responsibly sourced. South Africans can still enjoy our rich chicory and coffee blend, but now it comes with the added benefit of building a better world. Our commitment to farmers, coffee communities and the planet has never been stronger. However, the challenges of sustainability don't end with sourcing; there is a need to renovate and rehabilitate coffee farms, as well as improve labour practices and supply chains within the industry, and these are challenges that NESCAFÉ RICOFFY is proud to step up to.

RISING TO THE OCCASION

Nestlé recently launched the RE sustainability initiative in South Africa, which is aimed at reinforcing all its sustainability initiatives, strategies and resources to help mitigate sustainability challenges and strengthen its contribution to a waste-free future. The initiative will focus on three key pillars to tackle the sustainability issues: Rethink, Reduce, and Repurpose.

The initiative encourages everyone – industry, civil society, consumers, and government – to rethink, reduce and repurpose in their own ways by making sustainability more practical, accessible, motivating and rewarding. We know that addressing sustainability challenges cannot be resolved without collaboration and therefore it becomes important to work with like-minded partners to drive more circular initiatives and strive for zero environmental impact.



Rethink:

This pillar speaks to rethinking and encouraging broader society to rethink their relationship with the environment. On our part, we intend to drive this by educating the public about ways in which their behaviours can be shifted to better serve the environment. Some examples include water conversation, recycling and creating responsible practices.

Reduce:

The second pillar speaks to our commitment towards reducing our environmental impact to zero. This is part of our global ambition to strive for zero impact on the environment by 2030. Therefore, we will achieve this by driving reduction across our value chain; for example, food and plastic waste, as well as operational efficiencies to reduce waste.

Repurpose:

The third pillar of the initiative focuses on upcycling and reusing materials. This is where we accelerate our circular economy business models and projects to show commitment and leadership in this space, by facilitating the elimination of single-use plastic items that cannot be recycled.

Responsible sourcing is a voluntary commitment made by companies to take environmental and social factors into account when managing relationships with suppliers. This approach is an indispensable component of the NESCAFÉ RICOFFY brand strategy, highlighting the importance of an ethically and responsibly sourced product. It's a move that forms part of our commitment to establishing a culture of corporate responsibility.

To get the best end product we needed to start at the source, because the future of great quality coffee and chicory begins with sustainable farms. Nescafé runs the largest private coffee plantlet distribution program in the world, distributing more than 180 million coffee plantlets since 2010. The venture is instrumental in driving the growth and sustainability of the industry. Responsible sourcing adds to that impact, because we know where 100% of our coffee and chicory comes from, and that it is produced in a way that makes a positive contribution to individuals, communities and the planet.

RESPECTING THE BEAN

Coffee has the potential to be a sustainable commodity that provides great climate benefits while ensuring improved livelihoods for coffee communities around the world. It is precisely because of these benefits that our coffee beans are now 100% responsibly sourced. All of our coffee beans can be traced back to a reputable group of supplying farmers – farmers we are actively working with in 15 different countries across the globe.

Through our network of approximately 300 agronomists, we are able to visit more than 30,000 coffee farms per year, where we provide training and assistance that improves their operations and output. The production of our chicory and coffee mixture helps the industry grow by improving the abilities of our partners in the value chain, and ultimately results in a better, more sustainable product.

A PLAN POWERED BY PRIDE

To further our support for sustainable farming and the environment, the NESCAFÉ Plan is a tangible effort to Create Shared Value for farmers and communities in the coffee sector. It also allows us to consistently increase the functionality and sustainability of the value chain. In short, it's about being more responsible to improve more lives.

The NESCAFÉ Plan consists of three platforms: respecting farmers, respecting communities, and respecting our planet. Our objective is to positively contribute towards the future of great quality coffee, and that means uplifting the environment and everyone in it. Another of the plan's focal points is to make coffee farming a more attractive activity for present and future generations of coffee farmers. The strategy has accelerated and expanded the work we had been doing for decades to ensure a long-term supply of quality green coffee and chicory.

RAISING THE CUP

Responsible sourcing is improving the environmental footprint of both coffee farming and our own operations. From the farm to your freshly brewed cup of NESCAFÉ RICOFFY, even the chicory and sugar that we use is sourced responsibly. We continue to collaborate with expert partners and agricultural suppliers to fully understand the challenges on the ground,



where changes can drive transformation, transparency and full traceability. When it comes to responsible sourcing, there are no half measures here.

We thank our loyal customers for supporting our efforts to contribute to a more sustainable world. From bean to cup, there's shared pride in every step of the process.

NESCAFÉ RICOFFY – sharing moments that stir pride.





The Conflict Between Virus And Vaccine

Understanding the new variants of the coronavirus and if and how the vaccines will catch up.

BY SIMONE UMRAW

WHEN THIS STORY WAS GOING TO PRESS, Nigeria had a total of 161,000 Covid-19 cases and counting. A big chunk of these cases was attributed to the two variants discovered in the West African country – the B.1.525 also found in the United Kingdom (UK) and the B.1.207 genetically sequenced in Nigeria.

Experts continue to closely monitor the situation of countries that have seen new variants as the effects of these mutations have yet to be determined. In South Africa, more light has been shed on the 501Y.V2 variant which has been found to be more infectious and deadlier than the original strain.

The 501Y.V2 variant has wreaked havoc on the country and seen the number of cases increase exponentially since its discovery in December last year.

The situation in Nigeria and South Africa are not unique, however, as other parts of the world too have had to face the daunting reality of combating a new variant and the possibility of minimal protection offered by the vaccines now available.

Professor Lynn Morris, interim Executive Director of the National Institute for Communicable Diseases (NICD) of South Africa, explains to FORBES AFRICA that the virus is likely to become a norm and not disappear altogether from society.

"SARS-CoV-2 is likely to become endemic – in other words, it will continue to circulate amongst people who lack sufficient immunity," explains Morris. With Covid-19 expected to join the likes of HIV in becoming an endemic, mutations are expected as "viruses mutate as they replicate, fortunately most are harmless".

It is the area in which these replications have occurred, however, that has created the current crisis with the vaccines available. The spike protein is a key component to the survival of the coronavirus cell and is how the virus enters the body and begins to replicate.

The spike protein allows for the coronavirus cell to invade human cells. By doing this, it ensures the survival of the virus as viruses are only able to replicate once they have entered

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SARS-CoV-2 is likely to become endemic – in other words, it will continue to circulate amongst people who lack sufficient immunity.

— Lynn Morris, interim Executive Director, NICD

the host cell. Mutations on the spike protein have a number of different implications as each chemical component of the spike protein serves a different purpose.

One of these purposes is the rate of infection as Morris explains: “The 501Y.V2 variant has a number of mutations in its spike protein. One of these is shared with the variant circulating in the UK that has been shown to increase transmissibility. Another three are escape mutations that make the virus partially or in some cases completely resistant to otherwise protective antibodies.”

The other issue that has also arisen as a result of these mutations is resistance to the current vaccine models available. The vaccines produced by Pfizer and BioNTech, Moderna, Oxford and AstraZeneca all use a specific genetic component from the virus in their vaccine and the antibodies created by the body then formulate their reaction based on the genetic material of this component.

The material used by all these companies has been derived from the spike protein of the virus. This then brings the efficacy of the vaccines into question in dealing with the mutations of the coronavirus cell and still being able to provide a high enough level of protection against the virus.

This theory became a reality in South Africa, where the rollout of vaccines had to be paused with one of the main factors being a low-efficacy level of the vaccine when treating the new strain of the virus. The vaccine in question, the Oxford and AstraZeneca vaccine, had been purchased from the Serum Institute of India and was due for rollout in February.

Due to results conducted by an independent researcher, and a close approaching expiration date, the use of these vaccines was halted and replaced



Currently there are several variations of the original virus that have manifested itself across the globe; six of these however have sparked concern due to their impact on the spread of infection. Africa is experiencing three of the six known variants and scientists hypothesize that these variants could be key contributors to peaks in infections in the countries they have manifested in.

VARIANT B.1.1.7 – Also frequently known as the British or UK variant, it has been estimated to be 40% - 80% more infectious than the original Covid-19 strain. It is currently found in all regions of the UK, and over 20 other countries.

VARIANT B.1.351 (501Y.V2) – This variant was originally found in South Africa and was seen by many as a catalyst to the second wave of infection in the country. This variant was also found to be more infectious and occurred most frequently in younger people with no underlying comorbidities. Apart from being found in South Africa, it has also been reported in parts of Europe, North America and other countries in Africa.

VARIANT P.1 – This variant is one of two that were identified in Brazil and has been linked to the colossal increase in cases within places like Manaus and Rio De Janeiro while the second variant P.2 has been largely contained to Rio De Janeiro. The P.1 variant is over two times more infectious than the original strain and has been found to be most infectious amongst a younger demographic.

VARIANT B.1.525 – this variant is still relatively new and ongoing investigation is still determining the extent to which the mutations affect the rate of infection. This strain has been found across the world including Ghana and Nigeria.

VARIANT B.1.1.207 – Initially discovered through genome sequencing done in Nigeria, the exact effects of this variant are still under study, as of March 2021, this variant has been found across the world including countries in Europe, Asia and North America.

CLUSTER FIVE – This cluster was found in Denmark amongst the mink population and it was found that it would be possible to spread to humans from mink farms. This then led to the culling of 17 million minks which subsequently led to the extinction of the cluster five variant.

with the Johnson & Johnson vaccine, Ad26.COV2.S. At the time of going to press, this vaccine had been administered to over 168,000 health workers who were given priority.

The possibility of vaccines being a permanent or long-term solution has yet to be determined.

"We don't know yet how long vaccine-induced

immunity will last. If it follows the same pattern as natural infection where antibodies are relatively short-lived, then a booster will likely be required," says Morris.

As more mutations arise even as the virus replicates and the number of vaccines approved for use increases, this war between virus and vaccine is coming to a head and at this point, the victor is anyone's guess. 

'We Would Certainly Like To Vaccinate The Population As Fast As We Can'

In an interview with FORBES AFRICA, Dr Anban Pillay, Deputy Director-General of Health for the National Department of Health in South Africa, expounds on the initial strategy for vaccine rollout and what we can expect now.



Q. South Africa had originally planned to use the Oxford-AstraZeneca vaccine until a number of issues arose; what made the National Department of Health decide this was the most viable vaccine to use?

A. There were several [factors] that influenced this decision. The first of these was that in terms of vaccine supply, the stocks for the likes of Pfizer and Moderna were already almost completely distributed and we would not have gotten stocks to begin distribution within the desirable timeframe.

Secondly, when contextualizing it being rolled out here in South Africa, it was also the most sensible option. It was only a single shot and could be stored at fridge temperatures.

This took out the headache of follow-up for another shot and creating special facilities just to store the other vaccines.

And finally, the AstraZeneca vaccine did not come with a hefty price tag attached and was much more affordable when compared to the Pfizer or Moderna vaccines.

Q. To the average person, the results from the independent study suggested the AstraZeneca vaccine is not effective against the new variant but could you explain the science to that and how this conclusion was reached?

A. The study was done on a very small scale meaning that the sample size was very small and so anything with a small sample has to be approached cautiously when interpreting the results. The study was also not set out to determine what was eventually reported on, and was aimed at determining aspects around hospitalization etc.

So you know there is an argument about the quality of the study from a statistical basis and this issue was raised by the World Health Organization (WHO) as well. I think that the study suggests that from a clinical perspective, patients who have a mild-to-moderate infection do not get much benefit from the AstraZeneca, the protection of this vaccine can be quantified at 22%.

This means that 78% of the rest of the population would still suffer mild-to-moderate symptoms of Covid-19. The question that it has

not answered is what would happen in the case of hospitalization and mortality. Now the study was not structured to answer that question so this remains unanswered, but the extrapolation suggests that while it may not be able to protect you from mild-to-moderate symptoms, it's unlikely that it will provide protection against hospitalization and mortality, that is debatable, however, as the lead scientist has also argued that the structure of the AstraZeneca vaccine is not significantly different to the structure of the Johnson & Johnson vaccine. So it would be odd that the vaccines are so different in terms of efficacy despite one being so alike to the other, so there is a point there, but we haven't answered this question and this would require further study. So the WHO said that they still have confidence in the vaccine and we have no evidence to suggest it's not effective.

Q. South Africa is now making use of the Johnson & Johnson vaccine, does this rollout strategy differ in any way to the original?

A. Yes, it has actually improved our strategy as you now have a vaccine that is a single shot vaccine also stored in the fridge but this is much easier to manage than having to track someone down for a second time. It's important to also bear in mind the cost of a vaccination program; the vaccine is a part of that cost but the other part is the actual process of finding people to vaccinate, which is getting a nurse to the facility and having people ready and willing to be vaccinated.

Q. How long do you think it will take for South Africa to implement its vaccine rollout strategy?

A. The original plan was for all phases of vaccination to be complete within 12 months but this is very much contingent on whether the vaccine manufacturers are able to produce stock at the rate at which we want to vaccinate.

Countries in Europe and the likes of the USA have been vaccinating faster than the manufacturers can supply given that they are trying to meet global demand so I suppose it's going to be left to be seen whether they're going to be able to supply us in that time but we would certainly like to vaccinate the population as fast as we can.



AKAGERA NATIONAL PARK



NYUNGWE NATIONAL PARK



VOLCANOES NATIONAL PARK



LAKE KIVU



LIVE ENTERTAINMENT IN KIGALI



RWANDA'S TOP 5 DESTINATIONS

VOLCANOES NATIONAL PARK

Two and a half hours north of Kigali you will find Volcanoes National Park, home to most of the world's remaining mountain gorillas. Rwanda is among only three countries in the world where you can trek to see the majestic gorillas up close – a truly once in a lifetime experience.

LAKE KIVU

Kivu is one of Africa's Great Lakes, with deep emerald-green waters and a shoreline of magnificent mountains and fishing villages. The lake is dotted with uninhabited islands that can be explored by boat and provide the perfect location to relax and enjoy the peace of Rwanda's countryside.

NYUNGWE NATIONAL PARK

Nyungwe is one of the oldest rainforests found anywhere on the continent. The lush, green forest is home to over 300 bird species and 13 primate species including chimpanzees and

colobus monkeys. Take a stroll through the canopy along a 70m high walkway for exhilarating views of the rainforest.

AKAGERA NATIONAL PARK

Rwanda's largest national park is home to a diverse array of plant and animal life. The lakes, papyrus swamps, savannah plains and rolling highlands make Akagera an incredibly scenic reserve. The park is home to the elusive Shoebill stork, seven newly introduced lions, elephant, leopard and the shy but stunning roan antelope.

KIGALI

Rwanda's capital provides the perfect backdrop for a weekend getaway. As one of the safest cities in Africa, Kigali is quickly becoming a favourite for East African and international tourists. Savour the tastes of international cuisine at the city's best restaurants and enjoy live music at the many clubs and bars in Kigali.



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Fancy A Sea View For Your Zoom Meetings?

With the coronavirus checking in and work cultures shifting, a new type of migration has emerged – semigration. The argument: if you can work from anywhere, why live in the city?

BY TIANA CLINE

THE INTERNET HAS TRANSFORMED our societies, economies and way of life. While industrialization saw people moving across towns, cities and provinces to be closer to the workplace, the coronavirus pandemic has shifted everything. Around the world, city dwellers are moving to suburbia, choosing more living space over gridlock and a sea view for Zoom meetings.

“The reality of the Covid-19 pandemic and the limits and restrictions it has brought with it, many companies have had to change the way they do business. The interest rate on buying a home is at its lowest in 50 years,” says Marcél du Toit, CEO of Leadhome in South Africa. “As a result of this change, a new type of ‘migration’ has emerged: semigration.”

According to Du Toit, semigration is when professionals, individuals or families move to different, more affordable parts of the country or back to their native homes. He adds that semigrating reaps untold benefits for the local economies.

“Due to the increase in supply and demand, small businesses have the opportunity to serve a growing local community.”

The World Economic Forum undertook a survey with Statista which showed how large numbers of people are leaving big American cities like Manhattan, San Francisco and Houston. Europe last year experienced a unique phenomenon many are calling a reverse

migration. According to a recent report, over one million Romanians returned to Romania and Lithuania saw more citizens arriving than leaving for the first time in years.

“Estate agents are reporting better than expected interest in popular coastal areas such as northern KwaZulu-Natal and the southern Cape coast [in South Africa] which mirrors a trend in other countries,” says Yael Geffen, CEO of Lew Geffen Sotheby’s International Realty.

But it’s not only the pandemic reshaping our work landscape and as a result, changing where many are choosing to live. An essential component of pandemic migration and suburbanization is connectivity.

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The interest rate on buying a home is at its lowest in 50 years.

– Marcél du Toit, CEO of Leadhome



A DEMAND-DRIVEN NETWORK

"Connectivity has been growing over the last couple of years, specifically in the second metros of South Africa. With the advent of greater national fiber infrastructure, the connectivity from those secondary towns into the primary metros has become more reliable and at a much higher speed," says Prenesh Padayachee, SEACOM's Group Chief Digital Officer.

According to Padayachee, South Africa is a bandwidth-hungry country so while SEACOM is historically an undersea cable company, they're now looking at ways of getting landlocked countries into the data hubs of the world.

"Africa at some stage will also become a data hub but not everything that everyone requires in Africa will sit in Africa. If you're looking at bringing content closer to Africa, the undersea cables become important and then how do you connect those cable landing spots to the inland countries?" asks Padayachee.

"What happens to a country like Lesotho or Botswana? How do they get access to the cables? If you look at the African market in totality there are many other socioeconomic factors that come into play rather than whether someone has a 100MB link at home or not."

Padayachee brings up Uganda as an example, a country where demand for data is high yet little of it is connected. When people get access to more robust wireless technologies, their devices can move with them and SEACOM has seen similar relocation patterns throughout East Africa.

In Kenya, people are relocating back to their hometowns (or different, smaller metros) from the four major economic hubs: Nairobi,



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Africa at some stage will also become a data hub but not everything that everyone requires in Africa will sit in Africa. If you're looking at bringing content closer to Africa, the undersea cables become important...

– Prenesh Padayachee, SEACOM's Group Chief Digital Officer



Storm clouds gather over Loxton's iconic church in the center of the village; in South Africa's Northern Cape province

Mombasa, Kisumu and Eldoret.

"With physical infrastructure it's easy – you know how many endpoints you have and you cater for those endpoints. With Covid-19, people aren't office-bound but they also aren't bound to the large metros. We're starting to work much more remotely and we need to be able to cater for that nomadic capability," he explains.

LOXTON OR BUST

Peter van der Merwe is an associate director at a Johannesburg-based PR agency. He moved from Vanderbijlpark to Loxton, a village of around 1,100 people in the Bo-Karoo region of South Africa's Northern Cape province at the end of December 2020.

"We started dreaming before the pandemic, but the pandemic was the catalyst. The ability to work remotely was the game-changer: if we were already working from home, why not the Karoo?" says Van der Merwe. "The drawcard of Loxton was the uniqueness and tranquility. Houses are cheap compared to the city, there's zero traffic noise, we walk everywhere, and there's less stress and almost no crime, apart from the occasional petty theft. It's a simple, peaceful way of life."

Van der Merwe adds that his move to Loxton depended on having reliable internet access. They currently use wireless WiFi from a supplier in Beaufort West but the speeds are incomparable to fiber in the main metros. It's also more expensive.

"We don't have fiber yet, but a fiber line is being installed between the towns of Carnarvon and Victoria West, which will run directly past our town. Until then, we make do with wireless WiFi and a strong mobile network," he says. "Power outages happen over and above the normal load-shedding – and when that happens our mobile tower batteries die quickly too which leaves you literally uncontactable. The first thing we did was to install a UPS system, which keeps our WiFi router up and running, and keeps us connected to the outside world."

While the Karoo is becoming increasingly popular, Geffen adds that many small rural towns, especially in the Western Cape province in South Africa, have seen the number of permanent residents increase.

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Houses are cheap compared to the city, there's zero traffic noise, we walk everywhere, and there's less stress and almost no crime, apart from the occasional petty theft. It's a simple, peaceful way of life.

– Peter van der Merwe

"The Winelands has become increasingly popular in recent years, especially with those who seek a more sedate country lifestyle but still need easy access to the Central Business District and airport as well as families who are attracted by a better choice of good schools than many small towns," says Geffen.

"The Cape's West Coast is also attracting a lot of attention at the moment because villages like Langebaan and Yzerfontein offer the 'quintessential seaside lifestyle' whilst still being a fairly short commuter distance from Cape Town. For Gauteng buyers, wildlife estates in the bushveld areas of Hoedspruit and Modimolle in Limpopo [province] are becoming increasingly popular."

Those who no longer need to be city-based for work (and if you follow what technology giants like Twitter and Spotify are doing, the option of remote is now permanent) are opting for safer, more relaxing lifestyles in smaller towns or villages.

"It's a gloriously peaceful and simple way of life, while still being able to stay connected to our jobs in the Big Smoke. Funnily enough, we talk more often to our friends and family than we did when we lived around the corner from them, and when we visit, we spend more quality time. People also love coming to visit." 

THE HYBRID WORKFORCE: THE SOLUTION FOR THE FUTURE OF WORK?

As the restrictions that were put in place to combat COVID-19 have been lifted, some companies have opened their offices and employees can expect a very different workplace to the one pre-pandemic. It is now clear that the implications of the COVID-19 pandemic have resulted in new norms of working worldwide and a new structure of a hybrid work model is emerging. This new structure will allow employees to create a work from home schedule at their convenience while still having the option to come into the office to connect with colleagues on their teams.

The hybrid work model can be fully supported by strategic planning and technology to keep employees connected, whether they choose to be in the office or working remotely.

To build an inclusive hybrid culture, it is critical to place the remote worker at the centre of all company activities. Companies with a strong hybrid culture will need to focus on developing a digital culture that will include experiences for remote employees and allow teams to complement those with in-person events.

The future of the workplace

The workplace will look very different in the next five years. Before the pandemic, there was a shift to more flexible work patterns and the pandemic has significantly accelerated this change.

At Standard Chartered we do recognise this change and continue to find new ways of working and flexible options that will work for both the organisation and employees. The office environment is still important but, how space is designed and utilized will need to adapt to the current circumstances.

There will be a greater need for collaborative space that will allow cross-functional teams to get together for idea generation, work on specific

projects and initiatives if required. New technologies will need to be fully utilized to allow members to either be physically present or join remotely to contribute to the outcome.

Employees are now working longer hours since working remotely and lines are being blurred between home and work life. Organisations need to support their employees in enabling them to build resilience and find the balance that works for them and the organisation. Employee Wellbeing is important and there is no better time than now for organisations to focus on this. People leaders need to stay in touch with staff to assist those who have been battling to adjust to this new way of working. Transparent and frequent communication will help employees be engaged and be part of the team. Looking at new ways of working which listens to the needs of employees will help to maintain morale and improve it.

Company culture and management styles post-pandemic

Company culture needs to be identified and it needs to be embedded in the organisation's way of working. Organisations need to embrace new technologies and new ways of working to remain relevant and competitive.

In 2020, Standard Chartered launched a new online learning platform enabling all employees to drive their learning and development. This was done by identifying their areas of interest, learning at the employees' own pace in their own space while giving them relevant and up to date content to be at their fingertips.

Effective leaders need to create the space to not only engage their teams on work-related matters but also engage on a more social level. It is also important to have team engagements just to check in with employees and how they are managing their challenges.



Sigrid Muller

Leaders must embrace new ways of working, provide authentic leadership to their teams and at the same time be vulnerable and accessible to their teams. This will not be an easy transition but a very important one to keep employees involved and motivated.

In a post-COVID-19 era, organisations must leverage this opportunity to measure their internal shortcomings and address these through the execution of a comprehensive digital workplace. At the end of the day, the true measure of a successful team is the positive delivery of key objectives.





FROM HOLLYWOOD EXPORTS AND GRAMMY ARTISTS TO AWARD-WINNING IDEAS THAT CAN SAVE THE WORLD, AFRICA IS NOT ONLY DIVERSE IN ITS PEOPLE BUT ALSO ITS INDUSTRIES AND CREATIVITY. FOR FORBES AFRICA'S HUNDREDTH ISSUE (SINCE THE MAGAZINE'S INCEPTION IN 2011), WE DECIDED TO CURATE A LIST CELEBRATING THESE VERY IDEAS, INVENTIONS AND INFLUENTIAL ROLE MODELS THAT HAVE SPELT AFRICA'S GROWTH OVER THE LAST DECADE.

BY SIMONE UMRAW AND CHANEL RETIEF



INNOVATIONS, INVENTIONS AND ICONS FROM AFRICA

A

FRICA, A CONTINENT brimming with beauty and diversity, has produced some of the finest minds and most incredible ideas, be it in business, science, art or entertainment, thus debunking the many myths, misconceptions and stereotypes about the continent from the Western world.

The continent boasts six of the world's fastest-growing economies. Many outside of the realm of Africa are unaware that Nollywood (Nigeria's film industry) is technically larger than Hollywood in terms of the number of films produced every year. The current OTT platforms are witness to

this; as they have seen the release of several Nollywood films including the recently-released love story *Namaste Wahala on Netflix*.

The World Bank released a report in October 2020 stating that despite the fact that Covid-19 has disrupted many of the continent's economies, Africa could make a recovery this year due to "the diverse continent offering human and natural resources that have the potential to yield inclusive growth and wipe out poverty in the region, enabling Africans across the continent to live healthier and more prosperous lives".

The list of innovations, inventions and icons (*in no particular order*) on the pages that follow are testament to the ingenuity of the African mind and spirit of resilience and Afro-optimism.

The future is good. 

METHODOLOGY

FORBES AFRICA scoured the African continent, through extensive desktop research and phone and Zoom interviews, to determine those worthy for each component of this monumental list. And they include not just people, but breakthroughs, ideas and creations instrumental in contributing to the African growth story over the last decade. Covering innovations, inventions and icons, we defined each aspect. We see innovation as the disruption or enhancement of a pre-existing idea or concept. Inventions are ideas or concepts new or hitherto unheard of. Covering young and old, across multiple industries on the continent, the icons have considerable impact and enthrall the world with their exemplary work. Within our review, we cross-checked their contribution to the African growth story, be it through their work representing Africa or through their philanthropic and societal impact. There are still countless other pioneering individuals and creations that have contributed to their industries in similar or more measurable ways, and they will no doubt continue to be featured in the pages of the issues to come. But these are the 100 that made it into our 100th edition.

INVENTIONS



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The world is used to seeing Africa as a continent of need – but we are a continent of creators, innovators, entrepreneurs, teachers, and professionals. Our universities and research institutions are not ivory towers of elite knowledge. Instead, we consider real problems faced by fellow Africans. The many innovations that Africans have produced to address the problems raised by Covid-19 are just a hint of what we can do as a continent. Our young people need to know and develop their own potential as Africans to help the world solve humanity's wicked problems. It is time that we begin thinking of ourselves in the light of what we can offer the world. To do so, we need to invest in research that will build our own potential. This is no small task. But it is essential to our future,” says Professor Mamokgethi Phakeng, Vice-Chancellor of the University of Cape Town, South Africa.

1 | JAWAM WASHING MACHINE:

Stephen Wamukota is greatly respected in his village in western Kenya. His foot-operated washing machine has helped curbed the spread of Covid-19 in his community as it reduces the need for people to use the communal tap when washing clothes. Seeking funding to continue his production line, he hopes to expand to other communities, a goal he hopes to achieve before his 10th birthday.



2 | RONA: Fake news may be a thing of the past in Kenya, as Rona, the data analytics chatbot, can help clear any fact or detail that may be fabricated or confusing. Rona is the brainchild of Brian Wambui, a 21-year-old IT student at Dedan Kimathi University in Kenya. The questions are manually typed in, a feature Wambui believes is more user-friendly than the 719 Helpline and bots that provide a limited list of questions. “I imagined it would be a great idea if they could craft their questions the same way the misinformation was being spread, that is, using their own formulated words, not selecting their question from a list of options,” said Wambui to the United Nations Development Programme (UNDP).



3 | RESPIRE-19: Like most African countries, Nigeria has seen a significant shortage of ventilators to treat patients with severe Covid-19 symptoms. This led to the invention of a portable automatic emergency-ventilator made from locally-sourced materials. This life-saving device, RE-SPIRE-19, owes its creation to Usman Dalhatu and his colleagues Aliyu Hassan and Dr Yunusa Muhammad Garba of Nigeria.

**4 | WELLVIS:**

At some point or the other, everyone has had symptoms that could be confused with or associated with Covid-19. Issues arise, however, when an individual is uncertain that it could be Covid-19 or is not aware of the symptoms associated with the illness. This is when the Covid-19 Triage tool, Wellvis, comes in handy. Invented by Dr Wale Adeosun (above) and his team in Nigeria, it is a free online tool that allows users to do a self-assessment of their symptoms against a pre-programmed check-list of confirmed Covid-19 symptoms. This tool also offers medical advice or provides information on the nearest medical center that a user can visit for treatment.

5 | KHWELA:

In South Africa, the main mode of public transport is taxis and if an individual finds himself or herself in an unfamiliar area or lost, getting the right taxi can be a daunting task.

To alleviate this stress and possible safety risk, Khwela was invented. Using your current and desired location, the app points out taxi ranks within walking distance, provides the closest option for hailing a taxi without going to a taxi rank, and also provides an estimate of the cost that will be incurred.

It also boasts interactive features such as allowing users of the app to join chat rooms where they can speak to other commuters and an option to contact the National Taxi Alliance of South Africa to voice any possible concerns. As this app takes off, it is bringing a time-honored form of transport to the 21st century.

6 | PGUARD:

Enova Robotics' CEO, Anis Sahbani, calls the PGuard robot "the robotic solution to civilian protection". After the unrest in Tunisia a few years ago, citizens felt the need for personal protection; this is how PGuard, called "the world's first robot designed for private protection", came into being. The PGuard robot can survey an area using its panoramic camera which also has thermal imaging. It can transmit its GPS location and has a long WiFi range. These robots surveyed private homes and when the Covid-19 pandemic hit, Sahbani saw the opportunity for PGuard to intervene.

"During the lockdown, security guards [were deployed] to keep people from breaking regulations; this to me, was a great problem because it then put the security guard at risk of being infected himself. This is where PGuard came in and could provide the same functions without the worry of infection," explains Sahbani (*pictured below*) to FORBES AFRICA.

Tunisians were initially fascinated by the robot as it patrolled areas that were commonly crowded but gradually, they got used to them.

"They know it is there for their safety when they hear the alarm, they know it is time for curfew and I think being screened by a robot feels safer than having it done by a human who could very well be infected," adds Sahbani.

In the meantime, other Enova robots have been helping patients in hospitals see their loved ones through its video chat feature. The lockdown has made these robots famous.



7 | ALT SOAP: A youthful group of environmentalists in Madagascar are doing their bit to keep their communities safe whilst protecting the environment. To combat both the water shortage and the spread of Covid-19 infection in poorer communities gathering at communal taps, they have developed a no-rinse soap that requires no water for use. This soap has also been made from edible oils collected from local eateries. A liter of oil can produce 20 soaps. It is also entirely safe to use as the more harmful aspects of the chemicals are removed during the production process and is then mixed with soda to produce a bar of soap. Hoping to eventually expand into the rest of Africa, this product is revolutionizing the way people think about washing their hands and sanitizing.

8 | ARTIFICIAL RESPIRATOR:

What do you get when a group of math, engineering, computer science and telecommunication students from Senegal come together? The answer is an artificial respirator device (not named as yet) that can be controlled remotely. This decreases the chance of infection for doctors and nurses who take care of Covid-19 patients in critical care. It can be easily mounted and set up avoiding the need for technicians to be brought in for installation. The project leaders of this invention are doctors Ibrahima Gueye, Ousmane Seydi and Ahmed Mouhamadou from the Polytechnic School of Thiès, together with Mamadou Lamine Diagne from the University of Thies in Senegal.

9 | OxERA:

South Africa has been one of the countries hardest hit by the Covid-19 pandemic in Africa. The second wave overwhelmed the health sector and the shortage of ventilators and breathing apparatuses became a growing concern.

An amalgamation of doctors, engineers, and designers rose to the occasion as they invented a cost-effective easy to use an oxygen device, OxERA, made from an anesthetic face mask, accumulator bag, and adjustable mechanical peep.

Simply known as the Umoya project, the group of inventors at its helm has provided a solution for oxygen provision to patients with severe Covid-19 patients, who are almost entirely reliant on oxygen for the duration of their stay in hospital.

"This is unique. It takes the benefits of an oxygen mask and adds some of the components of non-invasive ventilation on to that simple oxygen mask and 'fills the gap' between the devices that we have available at the moment," Umoya leader Dr Craig Parker told *Cape Talk*.

It is supposedly easy to adapt, being used in rural and urban hospital environments. Since its approval for use by the South African Health Products Regulatory Authority, the group hopes to produce 15,000 units a week and with assistance from Gabler Medical, a supplies company, this goal seems within reach.



11 | HACK CORONAV:

When the West African-based Internet of Things CEO Joshua Opoku Agyemang saw how the Covid-19 pandemic was affecting his Ghanaian community, he felt the need to help, and this is exactly what he did. Under the umbrella term 'HACK CoronaV', he invented three different items that could be used to prevent the virus from spreading.

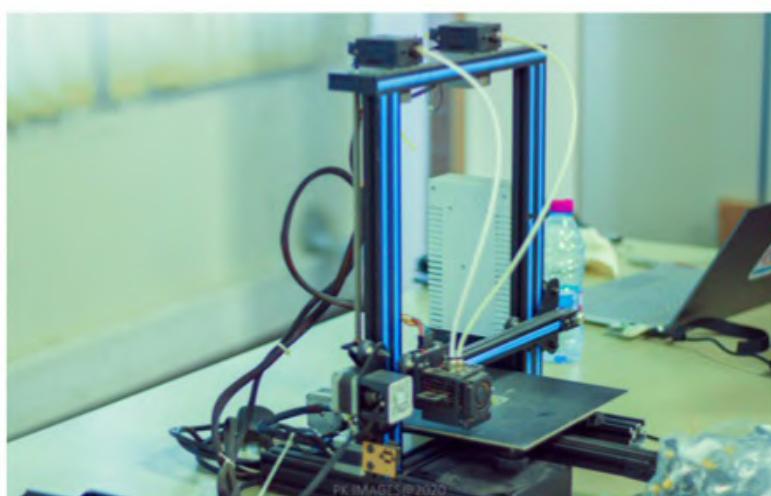
"Our inspiration came from the community first and the need to protect the people around us," says Agyemang to FORBES AFRICA.

Each item served a different purpose, the first was a touchless washing bucket that worked through a foot mechanism. "What we noticed about public washing buckets that came with taps attached is that you had to use your hands to open the tap and when you finished, you would have to close it yourself. So this could also be a medium for the virus to spread, and this inspired the creation of the touchless washing bucket," explains Agyemang.

The second was a reusable face mask created using 3D-printing and from materials that were locally-sourced. The final invention under 'HACK CoronaV' is an artificial intelligence home system that allows you to control appliances from your phone.

"The system we came up with helps you control your lighting system and switches, especially in public spaces to avoid these devices more than is needed, so we have created an app," says Agyemang.

These are just a few of the inventions he has begun to roll out and with more ideas in the pipeline, it will be interesting to see what Agyemang and his team come up with next.



10 | MABOKO PETO HANDWASHER:

This device is helping the people of the Democratic Republic of the Congo keep their hands clean using the sun. A hybrid device that uses both hydro-electrical and solar power, the Maboko Peto Handwasher is saving energy by being entirely dependent on conventional electrical sources. Fitted out with an automatic sensor for both the water and soap dispenser, the device is also able to monitor temperatures through a thermometer and has an automatic hand-dryer.

12 | CROSS-CONTAMINATION AWARENESS APP:

Despite a lack of funding, teenage inventor Ezedine Kamil of Ethiopia, in the wake of Covid-19, created a device that buzzes when you touch your face; to avoid spreading germs to the face and mouth and act as a reminder to avoid the possibility of cross-contamination. Having obtained the necessary patent, Kamil hopes to go into large-scale production soon with his device.

13 | AWEZAMED APP:

The 11 official languages in South Africa have always been a matter of pride for the country. In a rural medical setting where doctors are unable to speak some of the local languages, however, it has proven to be quite the challenge when caring for patients.

Enter the AwezaMed App, developed in collaboration with the Council for Scientific and Industrial Research (CSIR). It can provide medical professionals with the technology to access any phrase in English and translate it back into any of the official languages. This has also been applied to Covid-19 and we chatted to Dr Lauren Marais, one of the scientists involved in this undertaking.

Q: What was the inspiration behind the app?

A: With there being 11 official languages in South Africa, communication barriers are par for the course, and part of the reason we at the CSIR exist is to breach these kinds of barriers, scaling them.

What tends to happen is doctors and nurses in hospitals and clinics speak English but their patient does not, and needs someone to interpret for them and that could be anyone around who speaks the language, and this is then someone with no real connection to the patient and this creates issues for both doctor and patient with a stranger involved in a very private process.

So we wanted to find a way to cross that language barrier and the issues that come with it and as soon as the Covid pandemic broke, we adapted the original model and repurposed the app for screening questions in all 11 official languages.

We wanted to do something for all the languages especially at a time like this, so we worked together with Aweza who built the original app and we provided the backing speech technology which allows for translation of speech in English to any South African language.

It's a very specific domain [with] very specific questions that a doctor or nurse could speak to the application but then it provided a high-quality translation for the benefit of the patient.

14 | CARDIO PAD: Arthur Zhang, a Cameroonian inventor, has been busy in the past decade. His inventions have provided access to much-needed health diagnostic tools in rural Cameroon and now he is doing the same during Covid-19. We look at two of these inventions and the impact they have had. The first is Cardio Pad, a device that has transformed how heart disease has been diagnosed across sub-Saharan Africa. This is a handheld tablet that can be used by doctors and nurses in remote areas to scan the chest of a patient and send it to a specialist for review. Since its launch in 2016, it is now available in six countries and a program has been created by Zhang to provide the Cardio Pad to smaller hospitals and clinics that cannot afford to purchase one on their own.

15 | OXYNET: Arthur Zhang saw how quickly hospitals were running out of oxygen supplies and decided to lend a helping hand. He developed OXYNET, a system of generators that allowed hospitals to produce their oxygen. Each OXYNET station can be connected to electricity and can produce pure oxygen with a level of 93% from natural air. The station also comes fitted with a battery and a solar panel and is 3G-enabled granting both the users and operators access to monitor it effectively and can even be monitored remotely using a mobile phone.

**16 | KONIKU KORE:**

Osh Agabi has a brain for science. Using neuron cells taken from mice stem cells, he was able to fuse them with a silicon chip and create Koniku Kore. The full application of this device still needs thorough trials and testing to be completed. Agabi has claimed that the device, when infused correctly, will allow for the carrier to even detect bombs and cancer cells. He hopes for it to eventually be able to sniff out other types of illnesses and be applied to other areas of necessity.

17 | 'WORLD'S FIRST DIGITAL LASER':

Sandile Ngcobo, a scientist from South Africa, has revolutionized many different industries with one invention, and is reportedly "the first person in the world to create the first functional digital laser".

The digital laser has several applications including uses in the health sector to the beauty industry and has been deployed for a variety of purposes since its inception.

18 | MiBLACKBOX:

With increasing crime, courts are overwhelmed and cases are usually thrown out over a technicality or lack of sufficient evidence. Brent Thompson saw this anomaly and decided to do something about it. MiBlackBox allows you to record videos, phone calls, and sounds at the push of a button and upload them onto a cloud server for safe-keeping. This means should anything happen to the phone or user, their information and possible evidence as to what happened to them, is kept safe, somewhere in a black box.

19 | FONIO-HUSKING MACHINE:

Sanoussi Diakité, a Senegalese engineer, has developed a machine that is a big step in the right direction for grain harvesting and nutrition. Fonio, a grain used in cereals, takes hours to husk by hand and the arduous work impacted the quality of life of the laborers.

To alleviate this, the engineer created a Fonio-husking machine that can process five kilograms of fonio in under eight minutes. The machine, which runs on gas or electricity, is also finding interest outside of Senegal and is being purchased and distributed by neighboring countries.

20 | TESEEM:

Teseem is an app that teaches toddlers and children numeracy and languages including Hausa, Igbo, Yoruba, and Swahili. "We really wanted a way to share African stories with more kids, and to have children learning in their own language from early on," says Nigerian inventor Elizabeth Kperrun to *Mail & Guardian*. The app's main purpose, however, is story-telling as an archive of African folklore tales and songs are included in local vernacular so children can learn about their culture and heritage in a format that is easy to digest and take in.

21 | SIGN-IO:

The invention of Kenya's Roy Allela could revolutionize how the hearing- and speech-impaired can communicate through sign language. Sign-IO is in the process of developing a glove that is connected to a mobile app. Hardware in the glove can detect hand movements, and these movements are then translated into words by the app in real-time. It uses an internal database for translation that is based on American Sign Language. As an additional feature, it also allows for the gender and tempo of the voice used in the app to be selected by the user.

22 | CIRA 02:

Egypt has a new kind of nurse that could be joining frontline workers soon. Cira 02 is a robot developed by Mahmoud el-Komy, a mechatronic engineer. Created as feminine in appearance, Cira 02 serves several functions aimed at identifying and curbing the spread of Covid-19 infections. Cira 02 can take the temperature of a person standing in front of it and alert the person if the temperature is higher than normal. Cira 02 also acts as a guard with a no-entry barrier installed as a right arm. It's also able to provide verbal advice on what to do if someone tests positive and sounds an alarm and reports the infected individual to the relevant parties. Being fully autonomous and remotely controlled, Cira 02 could revolutionize the detection of the virus in the years to come.

23 | FLYING DRONE TO FERRY PASSENGERS:

After taking on anti-hijacking technology, Morris Mbetsa of Kenya has his sights set on the sky. He has built a human-sized drone that he hopes will one day carry African passengers by air and is continuing to work on its prototype.

"With this drone, you can easily fly from Nairobi CBD to Thika (in a Kenyan county); you, however, need to be trained first and be certified to operate this drone, before you are allowed to fly it," said Mbetsa to *Face2face Africa*.

24 | SAPHONIAN ZERO-BLADE WIND CONVERTOR:

This wind-powered energy convertor from Tunisia relies on kinetic energy to keep it going. Based on boat sails that use the wind to push forward, the Saphonian, created by Hassine Labaied and Anis Aouini, produces energy from a sail that relies on vertical and horizontal motion. These motions provide the necessary kinetic energy to mechanical pistons and it is these pistons that convert the same energy into electricity that can be stored hydraulically.

Made from cost-effective materials that are locally-sourced, Labaied and Aouini hope to revolutionize the renewable energy market, one Saphonian at a time.

25 | MAMA-OPE:

Even before the Covid-19 pandemic, pneumonia was a serious condition that had taken its toll on Uganda. With the disease being responsible for the death of over 16% of all children under the age of five, Brian Turyabagye decided to do something about it.

He created a biotechnological jacket that can diagnose the illness in patients four times quicker than a doctor and has been reported to be more accurate. The information is also transmitted quicker as a Bluetooth system in the jacket transmits the information gathered from the chest scan to a smartphone app.

26 | UMBIFLOW:

The scariest thing for any mother-to-be is the possibility of losing her baby. In South Africa, this has become a reality for a large portion of women as 28 out of 1,000 births result in mortality. This figure, however, has decreased dramatically from earlier stats and continues to fall thanks to the efforts of the CSIR and South African Medical Research Council.

FORBES AFRICA spoke to Jeremy Wallis, one of the people involved in creating Umbiflow, a low-cost, portable, Doppler ultrasound device.

"The name is a reference to what the device does, it measures the flow of blood in the umbilical artery, so this blood is pumped out of the baby's heart into the placenta where it exchanges oxygen and nutrition with the mother and this blood then flows back to the baby through the umbilical cord," says Wallis.

The stronger the flow, the healthier the condition of the baby, is what this essentially means.

Usually, issues with this process that endangers the health of the baby are picked up too late as a mother-to-be is usually referred to a hospital that is a fair distance away from her local clinic.

This means that the ultrasound is done too late when the flow in the umbilical cord has already ceased or is



too low for revival, this resulting in stillbirth. Umbiflow is a portable, easy-to-use device that can be connected to a laptop.

It has changed the way neonatal check-ups are done, as Wallis explains: "The results have shown that using this has had a significant impact and it did have the ability to save the lives of babies in the womb thus preventing stillbirth."

By doing this, Umbiflow has ensured that countless children have survived and it continues to assist nurses, doctors, and midwives.

27 | MEDAFRICA:

Looking up symptoms on Google can be frightening. A simple earache could be associated with a stroke or chest pains could be cancer. Kenyan developers Shimba Technologies have removed the fear component and created an app that helps people diagnose their symptoms more accurately.

The app also provides a directory of hospitals or medical practitioners in the immediate vicinity of users should they require and it also has a list of possible medications that can be taken to alleviate symptoms.

In African countries where medical professionals are in short supply, this app could help avoid unnecessary trips to a doctor or hospital facilities.

28 | LIFEQ:

Smartwatches are a dime a dozen these days with several features offering individuals a comprehensive overview of their health. The accuracy of these readings though can be questionable at best and users are usually warned to take these readings cautiously.

Enter LifeQ South Africa. Using a computational systems approach that has an in-depth understanding of human physiology ingrained into the algorithms, this wearable piece of tech provides a unique and all-encompassing view of an individual's health status.

With advice at the ready and possible problems easily diagnosed, LifeQ is changing the perception of wearable tech and what people should allow their watches to tell them.

29 | PELEBOX:

Most South Africans do not have medical aid. This means waiting in long, never-ending queues at public health facilities to receive chronic medication. This process can be time-consuming for both the health practitioner and patient, and this struggle hasn't gone unnoticed.

Neo Hutiri has created a system of smart lockers for patients to pick up their chronic medication from. This is a digital system that requires patients to use a one-time pin for access after the medication has been placed in it by a qualified health worker.

This cuts the time patients would need to spend waiting for medication and reduce interactions with healthcare workers which offers much respite.



30 | LODOX SYSTEMS:

Lodox Systems in South Africa calls itself the world's first and fastest full-body scanner. We speak to its CEO Mbuyazwe Magagula. Are there any projects Lodox Systems is working on currently as an improvement on the current scanner or are there any new projects in the pipeline, we ask. "Yes, this is something we are looking at. We're embarking now on a project to improve the image quality for use in other applications such as medical research, but we are also looking to introduce artificial intelligence or machine learning on to it and we also want to see if we can come up with an entry-level machine to cut costs for our clients. The aim really with artificial technology is to make the machine learn from the database that we have, and begin to provide a diagnosis without too much reliance on the human component to using one of our devices. The AI algorithm is designed to pick up the image and be able to provide a diagnosis on what is being scanned. This is the way that radiology is going and sets the way for the future," says Magagula.

INNOVATIONS



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The African continent has the youngest population in the world. Now, this is something that is very unique and in terms of our ability to innovate and the passion and ability that we can infuse into innovations and the processes that come with everything we are trying to do as a continent. I don't think we have tapped into this very unique context adequately enough and seen it as the comparative advantage that it is when compared to the rest of the world. I think their socio-economic standpoint is also unique. You have individuals who come from urban and rural backgrounds and this places them in the perfect position to provide innovations or ideas that are ideally suited to the needs and the context of the community.

— Thulani Dlamini, CEO of the Council for Scientific and Industrial Research (CSIR), South Africa

1 | RAPID TESTING:

If this pandemic has taught us anything, it's that time is of the essence. And proving this rapid point is CapeBio's Daniel Ndima and Dineo Lioma. CapeBio has created a rapid testing kit that provides Covid-19 results in 65 minutes. "The ability to obtain rapid test results allows us to gain a clearer picture of viral infections so that we can introduce interventions with greater effectiveness," Cape Bio CEO Ndima told *Cape Business News*.



2 | PAYMENT PROCESSOR:

Nigerian company, Flutterwave, is based on a financial application programming interface that makes it simpler to process payments across Africa. It is not just a useful tool for individuals, but also an enabling technology because it helps other businesses, including start-ups. And while Flutterwave is useful within countries, the unique nature of Africa makes it doubly useful across borders. Olugbenga GB Agboola, Founder and CEO of Flutterwave, speaks to FORBES AFRICA:

Q: What are some of the highlights and challenges Flutterwave has had as a company?

A challenge that came up during the early days of the pandemic and lockdown was navigating how to move a team of over 200 people fully remote. We had only tried remote work partially so it was a big test of how our remote policies will remain in effect after going 100% remote at such

short notice. But we did, seamlessly. Our people now spend more time with family and friends, get to avoid the tedious commutes and more. For our highlight, we'd never seen how much our work impacted businesses until we launched a product to help small businesses keep the lights on during the pandemic. We received lots of testimonials on how the Flutterwave Store helped small businesses thrive at a difficult time. There was a poultry owner who sold more eggs than expected with the Flutterwave Store, a bag reseller who received 1,000 orders in three days, and a food vendor who received payments from Qatar for delivery to a friend in Nigeria.

Q: Please comment on the importance of having more innovators originate from the African continent?

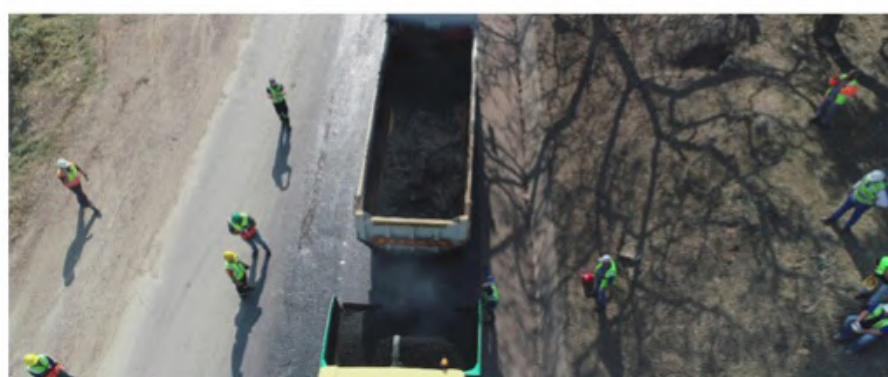
Africa must continue to produce homegrown innovators. It is even more important that we create systems that back these innovators to grow, thrive, and achieve their potential. This does two things; it multiplies wealth in the continent by ensuring these innovators translate their ideas into viable economic activities, and encourages the future generation of innovators to come forward with their innovations and ideas. Africa already has an encouraging number of innovators with excellent heads on their shoulders. They need support in the form of accelerators, funding, and a robust support system that can help them achieve their goals and grow the continent.

3 | PENILE TRANSPLANTS

In 2015, *Health-e* reported that the first successful penile transplant was done on a 21-year-old man at the Tygerberg Hospital in South Africa's Mother City, Cape Town. The nine-hour surgery, performed in December 2014, was led by Professor André van der Merwe, head of Stellenbosch University's Division of Urology. "There is a greater need in South Africa for this type of procedure than elsewhere in the world, as many young men lose their penises every year due to complications from ritual circumcision," Van der Merwe told *Health-e*. "For a young man of 18 or 19 years, the loss of penis can be deeply traumatic... there are even reports of suicide among these young men."

4 | PLASTIC ROADS

According to the South African Road Federation, potholes cost the country's road users an estimated \$3.4 billion per year in vehicle repairs and injuries. Insert Shisalanga Construction, who became "the first company in South Africa and Africa", according to *Business Insider*, to lay more than 400 meters of road that's partly plastic, in KwaZulu-Natal. The plastic Cliffdale road is made up of a mixture containing the equivalent of almost 40,000 milk bottles of locally-recycled plastic, *CNN* reported.



5 | DRONE SERVICES

Cabo Verdean Erico Fortes Pinheiro, the founder of PrimeBotics, saw the pandemic as an opportunity to develop versatile drones that deliver customized technological solutions to farmers, governments, and non-governmental institutions related to agriculture in Africa and around the world.

According to the Tony Elumelu Foundation, Pinheiro and his partner refocused their business model at PrimeBotics to find new solutions to mitigate the spread of Covid-19 in Cabo Verde.

"Their idea is to use their drones to disinfect streets, deliver medical and non-medical supplies, and produce 3D-printed face shields for hospitals. With PrimeBotics's current production capacity of 20-30 face shields a day, he seeks partners to upscale his impact in Cabo Verde," said the foundation in April 2020.

6 | ON-DEMAND OXYGEN:

Staying on the topic of 'using the pandemic to their advantage', let's take a look at AirBank by Nigerian company LifeBank founded by Temie Giwa-Tubosun. In its mission statement, LifeBank states: "Lack of oxygen kills over a quarter of a million Nigerians each year. We are on a mission to reduce the deaths linked to limited oxygen availability by improving oxygen distribution to hospitals across Nigeria." AirBank, created in 2020, is an on-demand emergency medical oxygen delivery product that is quick, convenient, and a cost-effective way to order medical oxygen in cylinders.



7 | THE BURIED DIFFUSER:

Created by Chahbani Technologies, a Tunisian company, the Buried Diffuser was created in 2018 to be an underground irrigation technique that can be used for trees (fruit trees, forest trees, ornamental trees) and shrubs, vegetables in fields and greenhouses, and plants in containers, pots or boxes. According to Chahbani's website, "the Buried Diffuser is, with no doubt, the most efficient technique to bring water to the roots".

8 | THE PORTABLE TOILET:

Responding to poor sanitation, health conditions, as well as pollution caused by sewage, Egyptian serial entrepreneur, Dr Diana Yousef, created the iThrone portable toilet. According to the African Innovation Foundation, it is a disruptive yet low-cost composite polymer membrane that essentially "shrink-wraps crap" aggressively evaporating or "flushing" away from the full water content of daily sewage output without the need for added heat, energy, or flush water. "This revolutionary portable toilet eliminates 95% of daily on-site sewage volumes, with no discharge to the environment, replacing the need for tanks, power, plumbing, or peripheral components," the foundation said.

9 | THE VERTICAL FARM:

Uganda, like many countries in sub-Saharan Africa, is seeing its arable land areas shrink with each passing year. This means economic activities such as farming are becoming increasingly difficult driving up the prices of organic food products. Paul Mato-vu, however, has come up with a possible solution. Noting the wasted potential in city spaces, he came up with the concept of a vertical farm. Mato-vu has created a "farm in a box", stacked soil boxes that can be placed in any piece of vacant land that comes with their composting solution to boot. The structure allows for over 200 crops to flourish and crops can fetch the owner as much as \$355 in a single production cycle. "So many young people don't know much about farming – and yet struggle to afford healthy food in the cities. We wanted to change that," he told *Mail & Guardian*.

10 | PIONEER FOOD DELIVERY APP:

To cater to food cravings, an Angolan tech startup created an app called Tupuca. With over 20,000 active users, the app has grown significantly since its launch in 2015, well ahead of most food and grocery delivery services that we have today. Sensing a need, it was also a pioneer on the continent to expand to providing other goods such as groceries and pharmaceutical goods and it continues to grow as more people, vendors and drivers join Tupuca's revolution of the FMCG industry in Angola.

11 | NON-POLLUTING PAINT:

A researcher in applied mechanics, Mulalo Doyoyo has also tried his hand at painting. In 2012, after accidentally kicking a bucket of a chemical mixture by accident, he discovered Amoriguard. This was the name he gave his paint product that has been produced using industrial waste, making his paint cheaper than conventional paint products and friendlier to the environment. "This paint is free from harmful and polluting substances, such as volatile organic compounds that are harmful to the environment. We focused on eliminating any chemical substance hazardous to the environment and people," said Doyoyo to *City Press*.

12 | PLASTIC BEACHWEAR:

Gina Tarboton and Loren Dyer, founders of GiLo LifeStyle in South Africa, are selling people plastic bottles to wear to the beach. The bottles in question have been converted into comfortable and breathable fabric that they use in their range of board-shorts.

The bottles are sourced from pollution capitals across the world.

"We wanted to promote the idea that high-quality clothing can be ethically created. We have the hope of changing consumer mindsets and making a difference to both people and the planet by



providing stylish clothing without guilt," said Tarboton to *Business Insider South Africa*.

They have also expanded into other clothing items such as hats and synthetically made 'down' jackets. The environment needs initiatives and eco-warriors such as these.

13 | THE URINE BRICK:

Would you live in a home made out of urine? Suzanne Lambert, a former master's student at the University of Cape Town in South Africa would. Using an entirely natural process that mixes urine, sand, and bacteria, she has created "the world's first bio-brick". With the potential of possibly replacing its predecessor as the brick to use, Lambert's creation could very well take the 'piss' out of the construction industry.

14 | ANTI-HIJACKING DEVICE:

Kenyan innovator Morris Mbetsa is leading the way in anti-hijacking. Unlike the modus operandi of its competitors, Block and Track security work off an SMS system. The system lets you monitor and secure your car from a substantial distance.

Car owners install the security package in their car and after setting up the hardware, locking and tracking your car becomes readily available at the touch of a button. If your car is stolen, an SMS with a code will bring your car to a dead stop provided it is still in the range of the mobile operator.

Having invented this system when he was just 18 years old, in 2013, the sky's the limit for Mbetsa who is currently working on bringing the first flying taxi to Africa.



15 | DATA-FREE MESSAGING:

With messaging giant WhatsApp alarming users with the changes in its privacy policy, many users across the globe, Africa included, have begun to look for alternatives. Moya Messenger could prove to be the solution for Africans as it is "the first data-free messaging service in the world". With similar features to WhatsApp messenger and other major messenger apps, the key difference is you don't get charged when texting someone on the app. An agreement with several major mobile networks has made this innovation possible and it's currently available in South Africa, Nigeria, Cameroon, Zambia and Uganda.

16 | 3D-PRINTED BONES FOR EAR SURGERY:

Professor Mashudu Tshifularo from the University of Pretoria in South Africa is the man behind the surgery that has shown that Africa is on track to join the fourth industrial revolution. He explains to FORBES AFRICA the inspiration behind using a 3D-printer to reconstruct the bones needed in the middle ear that can aid hearing.

Q: What inspired your decision to become an ear, nose, and throat specialist?

A. Getting into medical school was a privilege as you knew not everyone who wanted to get in would. From the first year until the completion of my degree, I was fascinated by everything I did, from all the courses I took and the different subjects, I just loved them and my thirst for knowledge was strong as I knew just being able to call myself a medical student was a privilege.

After working for three years, the more you think you know, the more you realize there is to learn. This is when I became aware of the specialized fields in medicine and asked my community and medical center about what specialty we didn't have available. We had some in every specialty except in ENT (ear, nose, and throat).

This is why I decided to become an ENT specialist. Being an ENT lets you see a wide variety of patients so the job is never boring and that is a big specialty which made it more interesting. When I got the opportunity to return to medical school to train others, I jumped at the chance to train others in my specialty because when you are alone in what you do, it's just you but when you train others, you're multiplying the value you have to others.

Q: How did you decide to use 3D-printed structures in reconstructive ear surgery?

A. Otosclerosis is the loss of hearing when the three bones in the middle ear seize up, almost like arthritis, and stop functioning and this is what I chose to specialize in when doing my PhD. This is when I realized the current method we are using to recreate the three small bones was very suboptimal.

They did not last long and they were not the same as the ones being removed and the sound gain for patients was anywhere between 70% - 80% and within three years or so hearing would be lost. It was also expensive as parts had to be imported and it was painful seeing a patient sitting there with the problem knowing there is nothing you can do.

That's when I spent 10 years looking for a solution to improve this process and get an alternative that is cheaper and more effective to help our people. That's when I ended up researching and trying to convince people of my point.

Four years ago, I came across the idea of 3D-printing. That's when I realized anything can be created from 3D printing, everything that could be designed, and this technology could be used to create it. I bought a small 3D-printer to use at home

and created models to see if I could use the same model and put it in the ear. The more I looked at it, the more I realized that we could create all these bones and so for three years, every second week, I was in my lab trying to recreate until 2018 when I hit a turning point and realized I was onto something and it was something great.

Attending a conference and hearing my colleagues talk about what they thought was an innovation made me realize that I was truly innovating with what I had up my sleeve. This is how I decided to go ahead and chose a volunteer to perform the first surgery using 3D-printed parts.

It's only now that I begin to realize the magnitude of what I did as no one else has attempted and nobody has challenged me on my findings and I am now ready for clinical trials.



17 | THE FIRE-PROOF SHACK:

Concerned by the number of accidental fires happening in South Africa, in the townships and rural communities, Gabriella Mogale created a fire-proof shack model. Just a scholar at the time, she entered her concept into the Eskom Expo for young scientists and came out on top. Her concept uses insulation that acts as a protective layer between the fire and the corrugated iron used in shack structures. The insulation is made from different products including recyclable materials and cement.

18 | BIOMEDICAL STEM TECHNOLOGY:

The use of stem cells in medicine has been seen as the pinnacle of innovation. Their benefits are endless and can be used in many complex procedures including returning vision and repairing the damage caused to the heart after a heart attack. The gene expression and biophysics group at the Council for Scientific and Industrial Research in South Africa has created the first induced pluripotent cells that can self-renew and opens several possibilities in various medical areas of investigation.

“THE INSIDE STORY”

Some of the most beautiful things in life are born out of chaos, and an involuntary retrenchment for Kara-Leigh Baker in 2017, was the catalyst that propelled the dynamic mother and daughter duo, Vanessa Ralston and Kara-Leigh to pursue their passion for natural and organic products. Creating the French Lemon brand, that South Africans know and love today, was fuelled by the adoption of their beloved Russian-born bulldog Ian, who has not only become the inspiration behind the brand, but also the face on their environmentally friendly packaging.

With collective backgrounds in the corporate world, what started out as a pursuit to become purveyors of preserved lemons and other lemon edibles for mom Vanessa and daughter Kara-Leigh; soon evolved into the passionate production of 100% natural, vegan and animal friendly bath and body products. Three years later, Vanessa and Kara-Leigh have built their fledgling business into a profitable venture that has created employment and skills development for their team of ten, as well as established a respected and reputable proudly South African cruelty-free brand.

As more people call for better ethical practices; advocates of beauty without cruelty, Vanessa and Kara-Leigh, together with their French Lemon team, are continually developing, trying and testing products that cleanse, nourish, moisturise and soothe skin from head to toe.

Vanessa has developed a series of secret recipes; their scrubs, steamers and signature scents are made to order, with their bestseller for men and women being their pumice bar. Each product in the Collection is handmade with love, and their inspiration is drawn from vigorous research, and the exploration of essential oils and the various responses that they trigger. This process results in the development of products with a purpose, that Vanessa and Kara-Leigh know their clientele would love to purchase and use.

Going back to basics, and birthed out of personal skin sensitivity, French Lemon embodies an ethos of kindness and compassion. Fanatical about what is found



inside their products, their entire Collection is SLS (Sodium Lauryl Sulphate) free. A surfactant found in bath and body products; and not only bad for your body, but for the environment and animals too, French Lemon uses coconut as a natural alternative foaming agent; and their products contain kaolin clay, coconut oil and shea butter. Their Collection is also palm oil free, and they do not support deforestation and the animals that are affected. Committed to the cause, their packaging is also bio-degradable, and made possible by local suppliers that provide sustainable environmentally-friendly options.

From their very first market in March 2017, French Lemon has spread their wings into Mauritius, Zambia and Zimbabwe, and while still operating a boutique production line from home in Bryanston, their plans include growing into a bigger space to accommodate their 2020 vision.

Natural and pure, the Collections, which are reimagined and reinvented every year, are suitable for women, men and children who are conscious about cruelty-free products and who also want to prevent absorbing toxins through their skin, bath and body routines.

Vanessa and Kara-Leigh’s creativity is contagious, and with an indomitable spirit and entrepreneurial outlook, this mother and daughter team is a powerful force

to be reckoned with. French Lemon has branched out into DIY scrub and lotion stations for events and parties; where the handmade process is shared with guests, who can build their own bath bombs and create signature soaps and scrubs.

The ultimate gifting solution, and a decidedly different take on soaps, scrubs, salts and scents, there is something for everyone at French Lemon.

The French Lemon Collection is available exclusively online at www.frenchlemon.co.za



19 | SEQUENCING COVID-19:

As Covid-19 threatened the lives of many across the globe, scientists at the Noguchi Memorial Institute for Medical Research (NMIMR – College of Health Sciences) in Ghana were able to successfully sequence the genomes of the coronavirus. This allowed them to obtain important information about the genetic composition of viral strains in 15 of the confirmed cases in Ghana. This has had a worldwide impact on the current understanding of the Covid-19 virus. “And this genome sequencing provides us with another opportunity to leverage research and we are beginning to look at how we can extend that information and capability into the identification of new drugs especially from herbal origins, traditional medicine origins, into the identification of what is the epidemiology, the spread and distribution and severity of the disease... We are beginning to look at how we can leverage this data,” Director of the institute Abraham Anang told *Africa News*.

20 | THE DISINFECTANT CHAMBER:

Prevention tools have gained importance during the pandemic. So important that 27-year-old David Nzassi Mbompela created the Smart-Portic. In a 2020 report released by the United Nations Development Programme (UNDP) titled *Africa Innovates*, DRC-born Mbompela was celebrated for his innovation that is an all-encompassing shed for use in public places that incorporates an infrared thermometer for taking temperature.

Furthermore, it has a ‘hot purifier’ to sanitize clothes with an automatic tap for washing hands, a GSM phone to call the Covid-19 call center, ventilators, protection switches, and a thermostat. The Smart-Portic is widely accepted in Brazzaville.

“I saw people leaving their homes and entering public places without temperature checks, or sanitation,” Mbompela said in the report. “It is this concern that inspired me to make a ‘small house’ where people enter for a rapid temperature check and sanitization.”

21 | THE APP AIDING THE HOMELESS:

Daniel Mgawi, a Namibian multidisciplinary software developer developed a ‘Homeless People’s Mobile Application’ that is connecting homeless people to social services such as healthcare, shelter, social grants, and food, during the Covid-19-enforced constraints.

“I would say the main challenge has been convincing people that this is a solution,” Mgawi said, according to the UNDP. “It took me about a year to figure out that this solution would need to be refined.”

22 | REUSABLE FACE MASKS:

Face masks have become a preventive tool against Covid-19, but also a fashion statement. Also featured in UNDP’s *Africa Innovates* report, 27-year-old Ugandan serial social entrepreneur, Franc Kamugyisha, has already won The Earth Tech Challenge Award 2020, and the Young Sustainable Impact (YSI) Solutions for Covid-19 Award for his work.

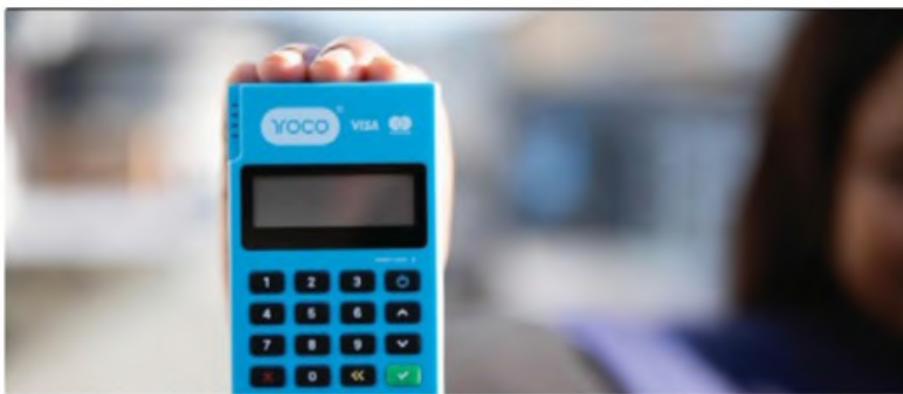
“Single-use masks in Uganda are expensive and also destroy our biodiversity,” Kamugyisha said in the report. “I embarked on a journey to use my skills to develop solutions in tackling environmental issues facing Uganda. I settled on the plastic collection, which I recycled into fencing poles and building hardware – substituting timber. I launched EcoPlastile in 2018.”

23 | MAJIK WATER:

In a recent interview with FORBES AFRICA, Kenyan founder of Majik Water, Beth Koigi, spoke about how important it was for her to be a renowned advocate of access to clean water into communities. Her idea of turning condensation or moisture into clean drinkable water for low-income households was celebrated in the ‘Women in Science’ feature in the February/March 2021 issue of FORBES AFRICA.

“I first became aware of the water troubles some parts of Kenya had when I went to university. I visited a region that had been struggling to get access to water and this is when it hit me that water was not as accessible as I thought,” Koigi said.





24 | SME CARD PAYMENTS:

As much as big businesses across the globe felt the burden of Covid-19, it did not look any better for small businesses. South African fintech company, YOCO, builds tools and services, such as the company's mobile point-of-sale platform and card reader, to help small businesses accept card payments. In the mission statement on its website, the company states, "We believe that by opening up more possibilities for entrepreneurs to be successful, we can help create more jobs, enable people to thrive, and help drive our economy forward."

25 | 3D-PRINTER FROM E-WASTE:

According to the United Nations: "In 2016, 44.7 million metric tonnes of e-waste were generated, an increase of 3.3 million metric tonnes, or 8 percent, from 2014. Experts foresee e-waste increasing a further 17 percent to 52.2 million metric tonnes by 2021". Furthermore, it notes that 60-90% of the waste is being illegally traded and sent to West Africa and Asia. Togo-born Kodjo Afate Gnikou created a cheap 3D-printer using electronic waste. According to *The Observer* in 2013, Gnikou wanted to address the growing problem of e-waste. "I want to adapt the 3D-printer to the Togolese and, indeed, African context and to fit local needs," he said.

26 | E-AGRICULTURE PLATFORM:

Togo-born Edeh Dona Etchri launched Go-Agric E-Commerce, an e-agribusiness platform, to connect people and organizations across the country's agriculture sector in 2015. The innovation here is that Etchri has taken produce-farming to the digital space, and empowered farmers with the resources to reach the client base not just in Togo but in other countries. This provides them with the information they would have struggled to get previously; simple things from weather updates to more complex aspects such as finding funding for their business ventures. This has taken farming and agriculture digital and flipped the script on how produce is sold. Reportedly, there are around 6,000 farmers across Togo using the platform.

27 | COVID-19 MENTAL HEALTHCARE PLATFORM:

Known as the silent pandemic, mental health issues have been on the rise since the pandemic hit. The Pocket Couch is an online platform responding to the mental issues that Covid-19 has aggravated. It was born out of the need to address the difficulty in finding, paying for, and accessing counseling services. "We want to create a world where everyone has a better chance of getting the help they need when they need it, wherever they may need it," the Pocket Couch website states.

28 | CONTACT TRACING:

This contact-tracing application, mSafari, supported by the Kenyan government, was created by Kenyan entrepreneur Ronald Osumba. This app requires public service vehicle operators and passengers to register on the platform and helps trace back movements of people who test positive for Covid-19.

"The virus doesn't move, people move," said Osumba on *ReliefWeb*. "The majority of people in our cities use public transport every day, so this is central to containing the spread of the virus. People have been astonished at how simple our idea is, but also how impactful it can be."

29 | MONEY TRANSFER APP:

Nigerian entrepreneur Chukwunonso Arinze created the Kaoshi mobile app that connects expatriate immigrants and money senders across the globe. In *Mail & Guardian*, Arinze states that starting this business was on the premise that sending money across borders is rarely a hassle-free process. "It usually involves long lines, obscene transfer fees, and lots of red tape. But it doesn't need to be this way." It boasts of being able to help users "send money anywhere in the world quickly and without paying expensive fees".

30 | BIODEGRADABLE SEED TRAY FOR RICE FARMING:

CEO of Madagascan business, FFF Sarlu, Juslain No-menjanahary Raharinaivo's innovation is especially important on this continent, as rice is a staple for many people in Africa. The biodegradable seed tray for rice farming was created to help with the ongoing demand for increased rice production, as some African countries are unable to be self-sufficient.

ICONS



“

An icon is someone who has held true to realize socially positive goals against great challenges and odds, who has lived to tell the tale, who inspires others in a positive way, and who leaves behind a legacy of uplifting work.

– Tsitsi Dangarembga



1 | DAVIDO

Labeled as an Afrobeats superstar by *Forbes* in 2020, Davido is without a doubt one of Africa's biggest musicians. The Ni-

gerian-American artist, who also graced the FORBES AFRICA 30 Under 30 list in 2018, told us that “it was people like [Nigerian music veterans] P-Square and D’Banj” who made him believe “that all this was possible”.

Since his advent to fame, Davido has won multiple awards, including BET awards and MTV awards. He has also signed on several endorsements with MTN and Guinness Nigeria.



2 | GERT-JOHAN COETZEE

“I am not one of those people who let challenges stop me, I tend to want to overcome them,” says 33-year-old designer, Gert-Johan Coetzee.

The South African, born in Koster in the country’s North West province, first rose to fame when he won the High Fashion Award at the Vukani Fashion Awards 2004. This is where TV personality Sandy Ngema noticed him and from there, Coetzee dressed her for the annual Durban July that year, and for the past two seasons of *Strictly Come Dancing South Africa*.

“Ten-year-old me never thought that this would be possible even though he had dreams of it especially since the label is celebrating its tenth anniversary,” he says.

Since then, Coetzee has designed pieces for some of Africa’s biggest stars like Bonang Matheba and Terry Pheto, to name a few. But he has also had the opportunity to design pieces for Cardi B, Kourtney Kardashian, and even Oprah Winfrey; this he says is a highlight in his 10-year career.

“I am a very positive person, my life is very colorful,” he laughs, in an interview with FORBES AFRICA, “This journey has been one massive jol and I have surrounded myself with amazing people.”

Being labeled an icon for Coetzee is something he deems “a dream come true” especially as an African creative.

“I am so excited about this honor. The magic of me and my work is that I am African and that’s what makes what I do special.” Coetzee smiles, “When FORBES AFRICA gives you the stamp of approval, you know you have made it.”



3 | CONNIE FERGUSON

DAILY MANTRA: “Success is a choice! Rise and grind!”

Having been in the film industry for over 30 years, award-winning South African actor Connie Ferguson is on the list for her impact as an actor, producer, and filmmaker. In 2018, she also graced the cover of FORBES WOMAN AFRICA. She talks to FORBES AFRICA about being included on the icons list.

Q: What have the highlights of your career been, both as a businesswoman and actor?

My highlights as an actor have been my time at *Generations*, a show that allowed me the opportunity to build my brand, my role as Mavis in *Rockville*, our debut show as executive producers, and my current role as Harriet Khoza in *The Queen*. Although the different awards received over the years are humbling and appreciated, the loyal fans and viewers that diligently follow and appreciate my work are who make it all worthwhile.

As a businesswoman, being the first SA TV personality to launch a perfume in 2008, and a body care range Connie Body Lotion and Connie Men in 2015; winning the Shoprite Supplier Of The Year Award in 2015 was the cherry on top. Ferguson Films, a production company I own and run with my husband Shona, is also not only a highlight but the biggest blessing! We can create work for a hundred plus in a very tough economic climate. All our shows have performed exceedingly well, and we are truly grateful to the people who follow and enjoy our work. They inspire us to keep the creative juices flowing.

Q: What do you think makes an icon?

Someone that is not only aspirational but inspirational, that is memorable and leaves a mark wherever they go.

Q: What do you think of the honor?

I didn't set out to become an icon. I let my work speak for itself and endeavor to empower and touch as many lives as I can positively. The titles and accolades that come with that are a bonus!

4 | TSITSI DANGAREMBGA

DAILY MANTRA: “God is good and full of compassion.”

Her book *Nervous Conditions* was named by the BBC in 2018 as one of the top 100 books that have shaped the world. But what shaped Tsitsi Dangarembga's 30-year career in the writing and film industry?

“I have had some success with my novels. I owe the success I have had to write my truth. Making my truth in film is a little more difficult, due to the structure of the industry which is not yet as diverse as the world of literature,” says Dangarembga to FORBES AFRICA.

The Zimbabwe-born Dangarembga says that though a highlight in her career was how *Nervous Conditions* was received by women and also men on the continent, there were challenges.

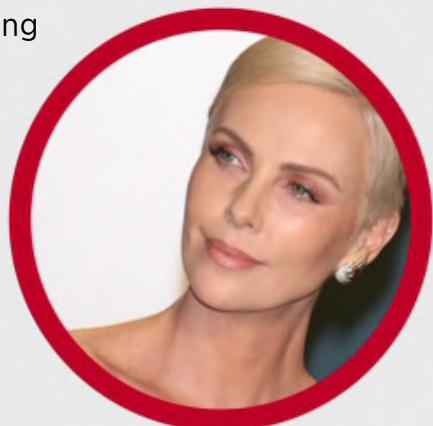
“The main challenge I faced when I began writing was being at the forefront, having no role models, and having to clear my way as I went. There were very few support systems for black African female writers, whether this was in the area of craft, opportunities, or resources. Nor was there a great deal of interest in what we had to say,” she says.

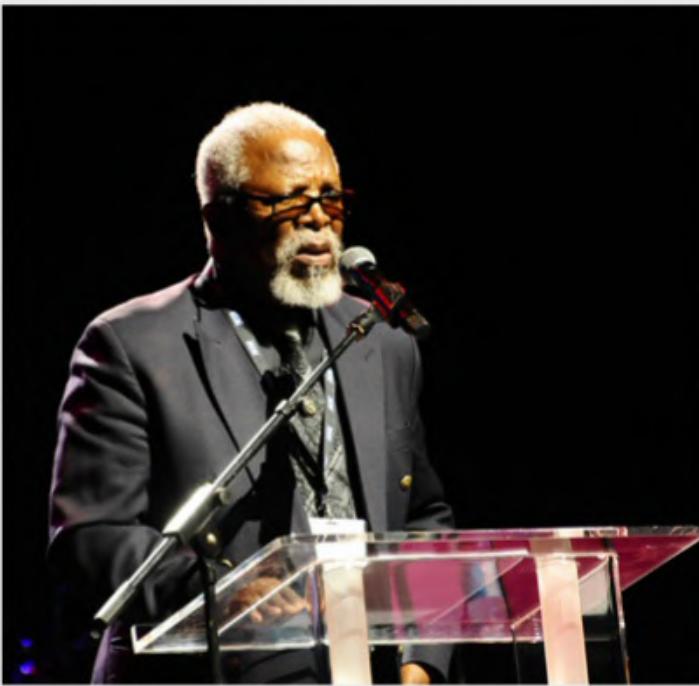
But she persevered and advocated for more, as she believes future generations need role models to look up to and act as signposts as they chart their course. She adds: “For Africa to flourish, we need role models on the continent who are successful in their own lives and in paying it forward.”

5 | CHARLIZE THERON

Having grown up on a farm in South Africa, award-winning actor Charlize Theron makes the most of every chance to dote on her African roots. This is evident in the interviews she has done with James Corden or *Vanity Fair* where she speaks fluent Afrikaans. Or in the work she does for her foundation, the Charlize Theron Africa Outreach Project.

Or better yet, how she continuously fights against social injustice on the continent. An example was when, just as Nigeria was celebrating its diamond jubilee in October last year, protests against police brutality erupted calling for the disbanding of the infamous police unit, the Special Anti-Robbery Squad, which had long been accused of extortion, torture, and extra-judicial killings. Theron commended the young people of Nigeria on social media: “The youth of Nigeria are standing up against the brutal, corrupt, and murderous ‘Special Anti-Robbery Squad’ police unit – #EndSARS. It’s amazing how young people seem to be the ones always leading the charge to change the world. It’s our responsibility to stand with them.”





6 | JOHN KANI

Dr John Kani has over 56 years of experience in the film industry and in an interview with FORBES AFRICA says that his love for this continent is what has driven him to be successful.

"I will not play a particular role or be found in a particular environment that I feel would impact negatively to the dignity of the African man," Kani says. "I will not do anything I feel uncomfortable in and that doesn't celebrate the humanity of my people... I love my people, I still always say I love Africa and I love African people."

In the interview with FORBES AFRICA, he also states how wonderful it was to encounter people in his career who have had the same love for Africa as him. Most notably, his late co-star in the Marvel superhero movie *Black Panther*, Chadwick Boseman.

“

I do miss Chadwick Boseman because there was a journey to be told of this young man but the ancestors needed him more and now he speaks through us.

– John Kani

Kani says he found out about an hour after the untimely passing of the award-winning actor. Boseman was diagnosed with Stage III colon cancer in 2016 and battled the disease for four years as it progressed to Stage IV, and his co-stars were unaware of his struggle.

"I met Chadwick on the set of *Civil War* and when we were introduced, he said to me '*Molo Baba*', Kani laughs. "I remember saying 'whoa whoa, where did that come from'...This is a man who in such a short time did over five to 10 movies while he was dying of colon cancer. Not once did he say 'I'm not feeling well'; he went through all the processes physically and intellectually engaging on set without once complaining. We never knew."

To Kani's great delight, Boseman always pushed the African point of view and this is something that Kani will always remember about him.

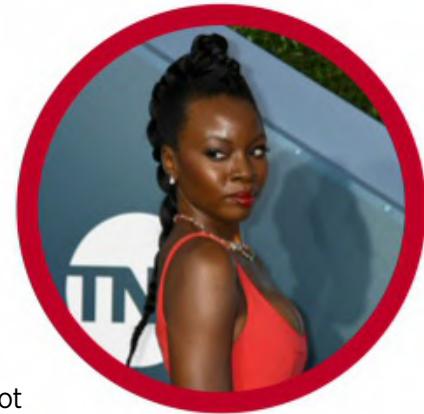
"I do miss him because there was a journey to be told of this young man but the ancestors needed him more and now he speaks through us," Kani says.

7 | DANAI GURIRA

Also a star of Marvel's *Black Panther*, Danai Gurira was born in the United States but at the age of five moved to her ancestral home of Harare, Zimbabwe. In a 2019 interview with FORBES AFRICA, Gurira said that she was able to incorporate her Zimbabwean upbringing and teachings into her character Okoye in *Black Panther*.

"I grew up in southern Africa. I grew up around African women. So, absolutely, in all ways I've been around a lot of African women. I understand a lot about who we are and what makes us tick. I also understand that there's our specificity in terms of ways that I don't think we get to often see African women portrayed," she said.

Early in her career, Gurira also taught playwriting and acting in multiple parts of Africa like Liberia, Zimbabwe and South Africa. She has also famously starred in multiple seasons of *The Walking Dead* series.



8 | BURNA BOY

Often known as one of the biggest and most successful African artists on this continent, Burna Boy won the Best Global Music Album category at the Grammys on March 14. The Grammy nomination described *Twice As Tall* as "a masterclass in the vibe and hustle that have made Burna Boy an international musical force".

"Africa in the house!" an excited Burna Boy said in his acceptance speech, "This is a big win for my Africans all over the world. This should be a lesson to every African out there, no matter where you are, no matter what you plan to do you can achieve it... because you are king!"



9 | WIZKID

Another one of Nigeria's brightest and biggest stars, Wizkid, is described by *Vogue* as "an image-maker who speaks to millennials". The multi-award-winning Afrobeats artist won a Grammy alongside Beyoncé for their song *Brown Skin Girl* (which came off Beyoncé's visual album *Black Is King*).

In an interview with *Evening Standard*, he said he did not set out making music to become an African star but rather to be a worldwide musician.

"Music is a universal language. I always felt no soul would favor Afrobeats and not fall in love with it – only if you don't love music, and I don't know any human being that doesn't love music," he said.



10 | HELLEN OBIRI

As of recently, this Kenyan middle-distance world 5,000m champion pushed her icon status to new heights when she was awarded the FORBES WOMAN AFRICA Sports Award at the 2021 Leading Women Summit. "It has been a tough year for me and everyone around the world but hopefully there is a light at the end of the tunnel," she said in her acceptance speech.





11 | TENDAI 'THE BEAST' MTAWARIRA

Tendai Mtawarira, affectionately known to the world as the 'Beast', always dreamed of playing for the South African rugby team and knew from a young age, that he is a gifted player. Mtawarira met with FORBES AFRICA via Zoom to relate more about his journey to the rugby field.

Q. When would you say this dream to play for South Africa started?

A. Probably at the age of 16. I was playing at school and people always told me if I took the sport seriously, I could play professionally. So I used to watch *Super Rugby* and I used to watch the Sharks on DSTv and that became my go-to for inspiration.

Q. What have some of the highlights and challenges been in your career?

A. There have been so many highlights in my career but if I were to point out a few moments, the first one would be making my debut with the Springboks on June 14, 2008; yes, I still remember the date (laughs). We were playing against Wales at Loftus Stadium.

I was at the time 22 and I remember having to pinch myself. The next one would be the British and Lions tour where I made a name for myself and the rugby world became familiar with 'The Beast'.

And the first challenge that comes to mind is that I had a heart scare from 2010 to 2011. It was a condition that happened all of sudden and unexpectedly. What happened was one day after training I got rushed to the emergency room and they discovered that I had a heart murmur...

Q. How did you get 'The Beast' moniker?

A. It's a funny story (laughs). I got it from my best friend in primary school when I was nine years old and it was because I was much bigger than my peers. They used to say I was a bit of a man child. And the reference came in from the movie *X-Men*.

Q. Your comment on FORBES AFRICA making you an icon in its 100th issue.

A. It's such an honor, I am humbled to be recognized for my craft. And I am grateful to be associated with FORBES AFRICA, you guys do amazing work and to be a part of this issue is super-exciting.



12 | TREVOR NOAH

In 2019, *Forbes* noted South African-born comedian, Trevor Noah, as amongst some of the biggest names in comedy on the 'The Highest-Earning Stand-Up Comedians' list. Always priding himself in being from this continent, in a recent interview with *The Wall Street Journal*, Noah told the reporter not only

did he feel pressure to succeed as the host of *The Daily Show* from Americans but from home too.

"I remember South Africans saying to me, 'hey, man, if you fail, we all look bad. They're never going to give any African any type of big TV show again. So don't mess this up'. I even had black people in America saying, 'oh, man, don't, don't mess this up for us. You mess this up and it looks bad on everybody,'" he said.

13 | MR EAZI

Known to the world as 'Mr Eazi', Nigerian-born singer Oluwatosin Ajibade has made a name for himself as an award-winning African artist. In 2020, he made the coveted FORBES AFRICA 30 Under 30 list, in which he spoke about the side hustle while in college in Ghana that led him to a best-selling career in music and earning millions of fans along the way.

"I began my career with a small cash gift from friends, which enabled me to pay for my first professional-quality video for *Skin Tight*," he told FORBES AFRICA, on the early days.





14 | YVONNE CHAKA CHAKA

DAILY MANTRA: “We are born with nothing and die with nothing so let’s just enjoy the life that happens in between.”

Singer, actor, philanthropist, activist, businesswoman, and humanitarian, are just some of the words associated with the Princess of Africa, Yvonne Chaka Chaka. She talks to FORBES AFRICA:

Q: How would you describe your experience in the music industry so far?

My mother wanted me to be a lawyer, I wanted to be a chartered accountant, but when I began singing, I took a step back to appreciate the platform it has given me and it has been a great platform to tell the world about my country, what inspires me, what I would like to see in others and what I can learn from others and how I can make South Africa a better place so I was quite lucky to be in this position.

The quick sales from my first single got me very popular and this included the outside of South Africa which to me was unbelievable given those times. This is how the name ‘the princess of Africa’ came up, because you know I started traveling to places like Kenya, Uganda, Tanzania, to name a few, for me, it was validation that Africa loved and accepted me and has laid the red carpet for me and this led to me wanting to know my continent better.

I was very happy to be known in Africa and that it opened its arms to me and I feel so happy and lucky to be a woman from Africa.

Q: Given this relationship with the continent, what does being seen as an African icon mean to you?

I don’t regard myself as an icon, I just regard myself as a servant because when people open their arms for you and when people give you a platform to be able to perform, what do you do in return? So for me these people allowed me into their homes without me even asking, that’s when I’m on television; when I perform at a stadium or any function, they leave what they’re doing and come to support me by watching my show.

So I just think sometimes we become taken away and think we are doing our fans a favor, when no they aren’t as it’s their love and support that makes us who we are. So I never take anything for granted. I appreciate every single moment that I’m granted by the people who have supported me through all these years because I would not be Yvonne Chaka Chaka without the support they have given me and my music.

So I don’t think I’m an icon, I just think I’m a servant and I’m asked by a higher authority to do this work and continue to serve my continent in the role that they have given me.



15 | DJ ZINHLE

DAILY MANTRA: “If you can feel the effort leaving your body, something great will come from it. It has to.”

After being in the music industry for over 16 years, DJ Zinhle tells FORBES AFRICA that she is grateful for everything she has succeeded in. She highlights the importance of celebrating Africa and its icons.

“It’s taken the world a long time to recognize our stories, our trails, and our triumphs and so I feel it’s of great importance that we celebrate, as a way of recognition, our own stories. That to me is important for our narrative as Africans,” she says.

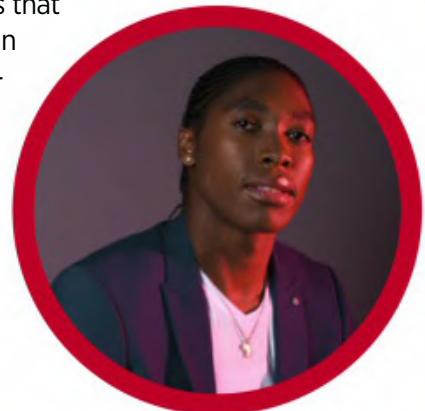
16 | CASTER SEMENYA

Despite all the hurdles that Caster Semenya met in her way, she still managed to come out on top by becoming the first person to win all three of the 400m, 800m, and 1,500m events at the South African National Championships in 2016.

She also won the bronze medal for the 1,500m race in the 2017 World Championships in London and gold in the 800m women’s event.

All of these accolades were achieved while continuing to fight a ruling made by the International Association of Athletics Federations.

Her struggles have not deterred Semenya from achieving her goals. She began a football career in 2019 and her philanthropic endeavors have included starting her foundation aimed at training young disadvantaged athletes and she has shown her support for the LGBTQIA community.





17 | ARCHBISHOP DESMOND TUTU

He has been played by Forest Whitaker, he has met Prince Harry and Meghan Markle and called the late Nelson Mandela a close friend. Anyone who has met the affable Archbishop Desmond Tutu would describe it as a privilege to have gotten an audience with him.

Desmond Tutu is one of the pillars of Africa, known for his humanitarian work and activism. A Nobel Peace Prize winner, having retired from public life in 2010, the archbishop continues to do good for his fellow men through his foundation. The recognition for his body of work and good deeds continues long after his retirement, as he recently received the Human Rights Global Treasure award and has an exhibition highlighting his activism set to open in October.



18 | DR TEDROS GHEBREYESUS

Dr Tedros Ghebreyesus has been at the helm of the World Health Organization (WHO) since 2017, making him the first African selected for this position. In this tenure, he has advocated for global health, promoted gender equality, and overseen the response to one of the worst pandemics to hit mankind since the Spanish flu.

His humble beginnings in Ethiopia and study of community health helped him rise through the ranks in government and has seen his campaign for Director-General of WHO supported by other African government figures and heads of state.

His continuous efforts to fight the Covid-19 pandemic are on a global scale and when asked to comment on what being an African icon means to him, he simply said: "I am proud to be a son of Africa."

DIVERSITY MATTERS BECAUSE DIVERSITY WINS

By Ann Cairns, Executive Vice Chair of Mastercard



Africa, like everywhere in the world, has been coping with COVID-19, which has disproportionately impacted women.

The pandemic is a watershed moment for gender equality and an African Union report notes the importance of a gendered perspective in the analysis of this multi-dimensional event, to improve outcomes for women, and the wider society that benefits when women contribute.

Amidst recovery, we now have a chance to hit the reset button in all industries – across the board, and across boards. It is time to ask ourselves if we have the balance of the workforce that Africa needs - and prepare to do what it takes to get there.

Policy is good for honesty

When it comes to the private sector, more and more firms have diversity and inclusion policies. Great. But right now momentum is everything – we need to see companies of all sectors reach out to women to create growth pathways for them to contribute their views and value – from entry-level to the top of corporate hierarchy.

By training women, giving them the opportunities to succeed, and extending responsibility for the assignments that enables them to climb to the top, companies across Africa will ignite a source of vibrant new perspectives that will assist recovery and growth.

Forging ahead independently

Of course, millions of African women are also going it alone and forging careers as entrepreneurs. Their tenacity is exemplary. Uganda, Botswana and Ghana have the world's most women business owners as a percentage of total business owners – a key indicator of the 2020 Mastercard

Index of Women Entrepreneurs. Still, 87% of women entrepreneurs said they've been adversely impacted by the pandemic, so we cannot allow this business ownership ratio to slip.

According to the United Nations, narrowing the gender gap in business ownership will go a long way in allowing women to play a role in helping their economy to rebound post-COVID-19 with stronger, more equitable and sustainable growth.

Access to the advantages that digital brings

Africa is ready for revival – so what can we do to boost its renaissance? We need to provide women more choice, better access, enhanced digital tools, improved connections and greater opportunities. As part of our commitment to connect 1 billion people to the digital economy by 2025, Mastercard is placing a direct focus on providing 25 million women entrepreneurs with solutions that can help them grow their businesses through a range of initiatives including funding, mentoring and the development of inclusive technologies.

Future innovators

We also know that the prominence of Science, Technology, Engineering and Mathematics (STEM) subjects in the future job market, will only rise. Encouraging girls to engage in and enjoy STEM subjects at school is the first crucial step in creating limitless possibilities for girls. It is why projects like Girls4Tech are crucial to inspire and prepare young girls for careers in science and technology.

Now is the time to let our collective call carry across Africa: diversity matters, because diversity wins.



19 | ELLEN JOHNSON SIRLEAF

As a former head of state and Nobel peace prize winner, Sirleaf has achieved more than most in her lifetime. She spoke to FORBES AFRICA on her experiences as president and what she thinks is needed to bridge the gender gap in Africa. On March 9, she also received the 2021 FORBES WOMAN AFRICA Lifetime Achievement Award.

Q: What was your experience like in becoming the first female head of state in Africa?

My life was forever transformed when I was given the privilege to serve the people of Liberia. It was an honor to become Africa's first democratically-elected woman president. It was a tough position to hold - not just because my success or failure would impact the prospects of women coming up behind me, but because of the immense challenges my country faced as it emerged from civil war.

When I left my inauguration after taking the oath of office, I got out of the car and walked along the streets. The crowds followed, walking with me - it was such a special moment. I knew I had the Liberian people behind me, and that gave me the strength and courage to take our country forward.

Coming into a position surrounded by men was difficult,

of course. There was, and still is, a suspicion that a woman isn't up to the job, and men often doubt you. I had to overcome this by being steadfast and standing up for the things I believe in.

I had to believe in my potential and do everything I could to better the lives of other women. I wish I could have appointed an all-women cabinet, but at the time, it wasn't possible.

So instead, I identified areas that are normally male-dominated, such as the Ministries of Foreign Affairs, Justice, and Commerce, and broke taboos by putting women in places where they were not normally found. We got women into leadership positions at different levels, pointing the way towards equity.

Q: Given the current gender disparities prevalent in African society, what do you think is needed for this gap to be closed and for women to be seen as equals to their male counterparts?

This is not just a problem in Africa; it is a global problem. There is a lot of work still to be done. We need more women to dare to contend for the highest positions of public leadership and to bring other women along with them. When I was President of Liberia, I made a point of putting women in positions of power so that young girls can see what is possible.

There is also much to be done in terms of ensuring girls' access to education, ensuring that there is room for women in business and entrepreneurship, and improving healthcare access. Every step we take is a step towards progress, and I'm encouraged by the number of women stepping into leadership roles today.

Q: What does being an African icon mean to you?

I am humbled to be considered an African icon. I hope that it will inspire others to work towards causes they are passionate about. I hope that it will have a motivating effect for other women and young girls, encouraging their confidence to set goals and to stay on the path to achieve them.

20 | SAMUEL ETO'O

Nicknamed 'little Milla' after the famous Cameroonian soccer player Roger Milla, Samuel Eto'o has lived up to and bettered the accomplishments of this namesake. In his prime, Eto'o was seen as one of the best strikers in the world and is one of the greatest African players of all time.

Thanks to his skills and raw talent, he holds the record for the most number of

appearances by any African player in the La Liga. He has been part of the team that won the La Liga three times and was responsible for one goal in two of these final matches.

Eto'o has also scored on his home continent as he is a gold Olympic medal holder with his national team at the 2000 Olympics. He is also the all-time leading striker in the history of the African Cup of Champions with a whopping 18 goals under his belt.





21 | SIYA KOLISI

Being the captain of the current Rugby World Cup champion team certainly hasn't gone to Siya Kolisi's head. In his interview with FORBES AFRICA, his humble beginnings and duty to his countrymen take focus as he discusses his upbringing and being the first black captain of the Springboks.

"I had a very happy childhood but it wasn't without its challenges. I was raised by my grandmother and when she lost her job, then getting a meal a day became a challenge. But I was lucky that she was always there for me with support and love," says Kolisi.

He acknowledges that rugby was his escape from the gang violence that tends to be the norm in rural Eastern Cape, South Africa. Having won a scholarship as a result of his rugby prowess, he attributes his interest in

rugby to his father and grandfather who both played the sport before him.

He also explains that rugby was something that kept him alive when he saw many of his friends who didn't play sport lose their lives to crime-related activities.

"It was a place for me to be away from everything else and when I played rugby, I felt a sense of belonging and that it was a place I could always go to. It was a place where I felt wanted and was a good place for me because it taught me accountability, respect and discipline too and it kept me away from trouble," explains Kolisi.

Being the captain of the side that won the Rugby World Championship in 2019 has seen his rise to fame; he attributes the achievement, however, to his team and their support of him.

"I can truly say my success as captain was only as a result of the success of my team, it was the players around me who helped me reach that achievement and we all had our role to play and that's what we did, we worked together," says Kolisi.



22 | DJIMON HOUNSOU

The Benin-born actor emigrated to France with his brother at the age of 12. For a time, he was homeless.

"The rocky time came right after I left school. I spent a lot of time at night navigating the streets of Paris trying to find something to eat," he said in a CNN interview.

After being discovered in Paris, the award-winning actor has played multiple roles alongside some of Hollywood's elite stars like Vin Diesel and Leonardo DiCaprio.



23 | ELON MUSK

At the start of 2021, the South African-born billionaire made the cover of FORBES AFRICA for the mere fact that he made history, although briefly, overtaking Amazon's Jeff Bezos to become the richest man on Earth.

Always known for his inter-planetary ambitions, Elon Musk's mother told FORBES AFRICA in an interview in 2020 that Musk aims to save the planet and he also loves the thought of going to Mars....

"I get very excited every step of the way. We all do. Kimbal and Tosca [Elon's siblings] and I go to the main [SpaceX] launches, we can't go to all the launches, as he has launched, how many now... 50 rockets? I'm not sure. I lose track. But we go to the main ones, and we are anxious beforehand and excited afterward and we are very proud of him and support him with all this. He just feels that we should be inter-planetary, starting with Mars. Mars seems to be the most friendly [planet], and that is what he would like to explore," Maye Musk said about her son.



24 | ROSE LEKE

Seated in a sun-soaked room in Nigeria, visiting her daughter for her 50th birthday, Rose Leke is anything but the typical grandmother. At the age of 74, she has made a significant contribution to the field of science and continues this through her academic career as an Emeritus Professor of immunology and parasitology at the University of Yaoundé I in Cameroon.

She began her career by being rejected and having to prove her worthiness to become a scientist.

"There was an examination to go to the United States of America as part of the 'African scholastic program for American Universities' which allowed Africans like me to study at an American University, I was one of two women who wrote it amongst all these men and I was the only one to get through; come to the verbal interviews I didn't make it, only

the men went through. The American authorities then got involved after seeing my results and a man from the United States of America embassy came looking for me to tell me that I had done well and made it and granted me a scholarship," reminisces Leke.

Since this pivotal moment, Leke has gone on to serve her community through her studies around malaria. She sits on numerous health boards and committees across the continent and has created the Higher Institute for Growth in Health Research for Women Consortium to mentor female scientists in Cameroon. As chair of the International Regulations Emergency Committee of Polio Eradication, wild polio was eradicated across Africa in 2020, something she couldn't be happier about as to her it means "no person will be paralyzed by polio again".

Known as "ma" to her students and colleagues, Leke has no intention of stopping anytime soon and believes her main goal going forward is preparing young female scientists for the future.

"I have always mentored and overseen young girls making their way into science, but now I have a structure in place and as long as I am around and the Women Consortium is around, no girl will be told 'science just isn't for her'."

25 | ELIUD KIPCHOGE

In eight years, Kenyan Olympic gold-medallist and marathon world record-holder has won 11 of his 13 marathons, plus run the only sub-two-hour marathon in history in a non-world-record-eligible event. Eliud Kipchoge is set to run at his next marathon on April 11 in Hamburg, Germany, his last 26.2-mile race before defending his Olympic title at the Tokyo Games on August 8. "In Hamburg, I am going back to the genesis of my marathon career," Kipchoge said in a release.



26 | FUNKE AKINDELE-BELLO

CNN calls her 'one of Hollywood's biggest stars'. Funke Akindele-Bello rose to fame after starring in the popular United Nations Population Fund (UNFPA)-sponsored sitcom *I Need to Know*.

"When I started *I Need To Know*, I never thought I would be this celebrated. I was 20 years old at the time," she said in the interview.



27 | LUPITA NYONG'O

Apart from being an Oscar award-winning actor and having played multiple iconic roles that represent both being a strong black woman and African, the Kenyan-Mexican has recently published a children's book, *Sulwe*.

"This book is also for people who don't know about colorism. To get to know about it. It's a mirror for dark skin girls to see themselves specifically because I didn't have that growing up," Nyong'o said in a 2019 interview with Jimmy Kimmel.



28 | BONANG MATHEBA

In 2016, The House Of BNG CEO, South African Bonang Matheba graced the cover of FORBES WOMAN AFRICA, alongside three other women, with the headline: 'The Millennials: The New Face of Entrepreneurship'. And in 2020, she also made FORBES AFRICA 'Africa's 50 Most Powerful Women' list. All of this because of her work as a reputed media personality and savvy entrepreneur.

29 | SWANKY JERRY

Also known to the world as Jeremiah Ogbodo, Swanky Jerry is a Nigerian celebrity fashion stylist who has dressed the likes of Pearl Thusi, Davido, Nyanda, Yemi Alade, Tiwa Savage, AKA, Sarkodie, and African presidents and first ladies. In 2020, he made the FORBES AFRICA 30 Under 30 list.

"We would usually have to wear the clothes of the locals of each city we visited, to blend in, and I loved it! Growing up within this lifestyle, I became more inspired by my surroundings and began to invest in Nigerian fashion magazines and people-watching at big events due to the elaborate fashion being paraded," he told FORBES AFRICA.



30 | IDRIS ELBA

Born to Sierra Leonean and Ghanian parents, the award-winning English actor who also played Nelson Mandela in the 2013 biographical film *Mandela: Long Walk to Freedom*, has recently shown his support in empowering Africa by slamming Ghana over gay rights. Idris Elba, along with other celebrities like Naomi Campbell, wrote an open letter pledging solidarity for Ghana's LGBTQ+ community. Elba has also been a United Nations Goodwill Ambassador for the International Fund for Agricultural Development. Testing positive for Covid-19 in March last year, he launched a coronavirus relief fund to help prevent the pandemic from creating a global hunger and food crisis.



31 | CHAD LE CLOS

South Africa's golden boy of swimming, Chad le Clos, is no stranger to being seen as a hero and icon. He is the only man to win three consecutive 200m butterfly Commonwealth titles and he currently holds the record for having the most Olympic medals won by any South African. He still managed to obtain three silver medals at the Rio Olympics.

With four Olympic medals under his belt by the age of 24 and already having opened a swimming academy to train the next generation of Olympians, what he achieves next will be nothing short of greatness.





32 | NGOZI OKONJO-IWEALA

"I hope other women will not just emulate me but do better... people ask me how do you manage to be successful but I did not set out to be promoted. For me, success was getting out of bed and running to work," says Ngozi Okonjo-Iweala, the first woman and the first African to hold the office as the Director-General of the World Trade Organization. Okonjo-Iweala has made history, and she was FORBES AFRICA's African of the Year in 2020.



33 | WAYDE VAN NIEKERK

Even after the 400m world record holder suffered a knee injury in a charity tag rugby match in 2017, he remains adamant that he will retain his Olympic crown. South Africa's Wade van Niekerk told *The Guardian* that he might run the 400m faster than he did at his absolute peak.

"I think I can. I've shown a lot of positive signs in the training of being faster than before and I've matured way more mentally. But I know it's one thing doing it in training and a different thing back on the track. So it's really about getting that consistency in terms of being a competitor," he said.



34 | BARACK OBAMA

Born to a Kenyan father, the former president of one of the most powerful nations in the world has consistently proven how he wants to be a part of the upliftment of Africa. Even years after leaving office.

This is evident in the work that his foundation, the Obama Foundation, seeks to do on the continent.

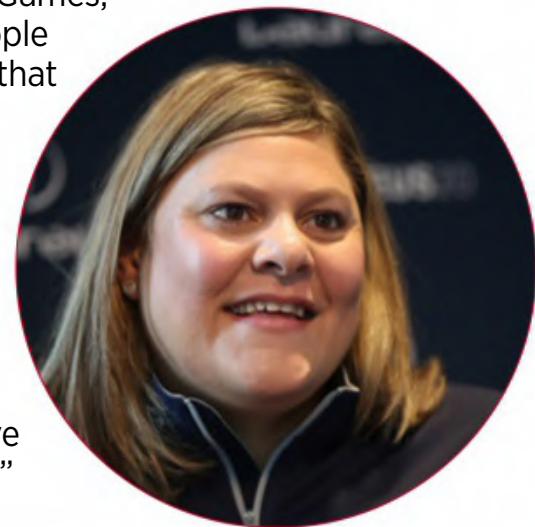
"The Leaders: Africa program seeks to build a growing network of innovative and ethical change-makers who will drive positive change in their communities, the continent, and the world," the foundation's mission statement reads on its website.

"True democracy is a project that is much bigger than any one of us," Obama said in a welcome video on the website. "It's bigger than any one person, any one president, any one government. It's a job for all of us."

35 | NATALIE DU TOIT

The South African Paralympian swimmer has been iconic in her country for always speaking out as a proud African and breaking down the barriers between disabled and able-bodied sport.

In a recent interview with *EWN*, Du Toit said: "After Commonwealth Games, after Athens, when people started to get to know that I was a swimmer, and that, you know, I won a few awards, people started seeing my face before they saw my leg, and they've always been supportive and said 'you know we always follow you, we've seen you swim on TV'."

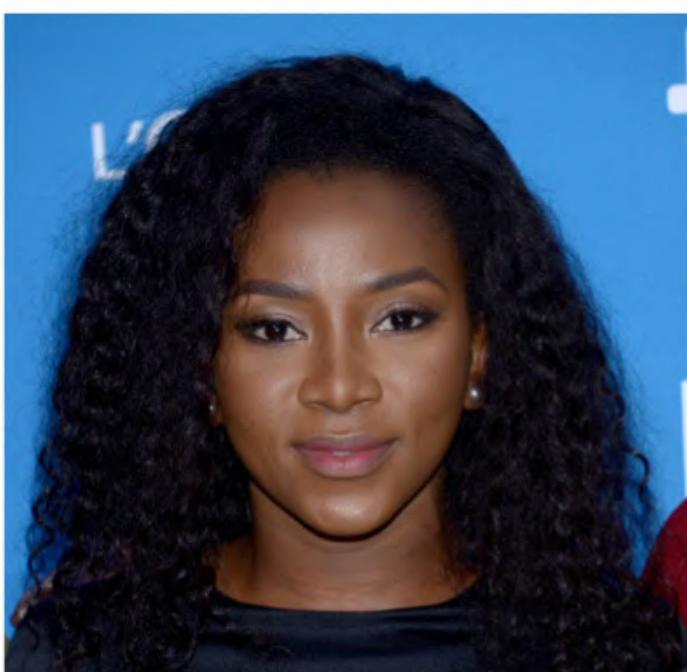


36 | OMOTOLA J EKEINDE

Easily one of the biggest actors to come out of Africa, multi-award-winning Omotola J Ekeinde has appeared in over 200 movies, according to *Entrepreneurs*. In 2013, she was featured on *Time* magazine's list of the 100 most influential people in the world alongside Michelle Obama, Beyoncé, and Kate Middleton.

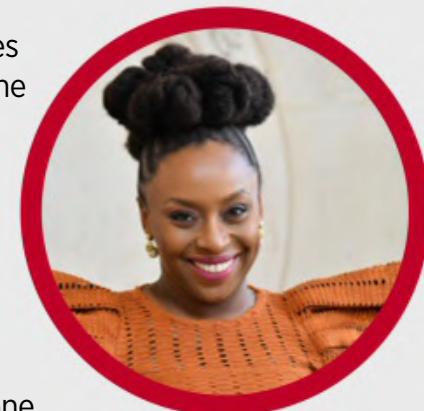
In a report by Nigerian newsroom, *Pulse*, Ekeinde commented on the fact that she would be part of the cast for *Rattlesnake: The Ahanna Story*, Play Network studios' remake of Amaka Igwe's 1994 crime thriller.

"It feels great being a part of this remake... There's a lot of youth and drama, culture. I like that there is a human story to it. People will be able to relate to it because they can find themselves in the story plus it's a classic and you can't go wrong with a classic," she said.

**37 | GENEVIEVE NNADI**

Described as a trailblazer in Nollywood, Genevieve Nnaji's directorial debut movie, *Lionheart*, is the first Netflix Original from Nigeria. It was also the first Nigerian submission for the 2020 Oscars before it was disqualified over its English dialogue.

"We did not choose who colonized us. As ever, this film and many like it are proudly Nigerian," Nnaji said in a tweet.

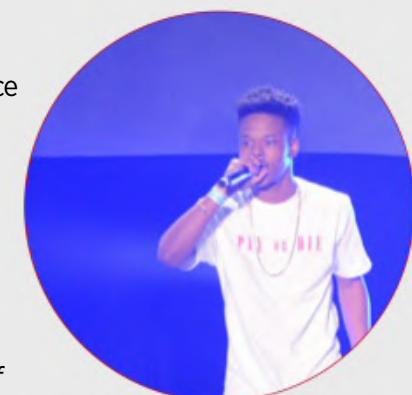
38 | CHIMAMANDA NGOZI ADICHIE

Known for her feminism which comes across not only in her books but in the way she speaks, Chimamanda Ngozi Adichie has brought the power of narrative to all the work she has done. *The Half of a Yellow Sun* author has been described by *The Times Literary Supplement* as "the most prominent" of a "procession of critically acclaimed young Anglophone authors [which] is succeeding in attracting a new generation of readers to African literature", particularly in her second home, the United States (her first being Nigeria).

39 | RICH MNISI

Having recently released a line that both celebrates Tsonga pride but also calls out Gender-Based-Violence, Rich Mnisi as a designer has always been ground-breaking. This is something that he lives by wanting to do every day when he gets the opportunity to design.

"I am a creative person, not a business person, so the business side has always been a challenge for me," Mnisi says in an interview with FORBES AFRICA. "But 2020 has been our best year and being able to create makes me happy."

40 | NASTY C

Nasty C's body of work has been shaped since the age of nine when he started rapping. In 2018, he was one of the Creatives to make the FORBES AFRICA 30 Under 30 list. His hit single, *Juice Back*, and the ensuing remix featuring Davido and Cassper Nyovest, made him a household name.

Recently, the star furthered his international footprint from being featured in *Rhythms of Zamunda - Coming 2 America* soundtrack to also performing on the Ellen DeGeneres show in February. We asked the award-winning South African artist to comment on being labeled an icon by FORBES AFRICA.

"I'm very excited and honored to have been thought of and given such a huge opportunity. I believe that what makes an icon is one's ability to keep striving for greatness no matter the circumstances. I am overly honored, thank you FORBES AFRICA for recognizing me," he says.

How To Become A CEO At 16

After more than a decade of trying to persuade authorities of the value of teaching entrepreneurship in schools, Lydia Zingoni, founder of the Teen Entrepreneur concept, is starting to make some headway.

BY NICK SAID

SOUTH AFRICA HAS TARGETED THE creation of a million new entrepreneurs by 2030, says Lydia Zingoni, but a schooling system reportedly weighed down by a lack of resources, infrastructure and a curriculum that focuses on traditional subject matter makes that seemingly a pipe dream.

Zingoni, founder of the Teen Entrepreneur concept, is hoping to change that and after more than a decade of trying to persuade authorities of the value of teaching entrepreneurship in schools, says she is starting to make some headway.

“The person you want in 2030 to be creating a business is likely in school at this time somewhere in South Africa,” Zingoni tells FORBES AFRICA. “You need to reach them now in order to create that mindset and begin to build the support structure around them.”

Zingoni, who was born in Zimbabwe but has lived and worked in London and now Cape Town for almost three decades, is hoping to revolutionize this space in South Africa and beyond its borders to across the African continent.

“I came to realize this need when I was working for CPUT (Cape Peninsula University of Technology) as the director of information and libraries, and four young people came to my office and said, ‘look, we know we are not going to get jobs, we want information [on opening our own business]’.

“This was back in 2006 when internet resources and opportunities [for online learning] were obviously far less developed.”

Zingoni recognized a growing desire among young people to cut their own path in business, but there was



little practical support from institutions.

She also believed these learnings should start much earlier, before tertiary education, and that schools would be an essential breeding ground for entrepreneurs.

She stepped up her plans in 2009 to form Teen Entrepreneur, a non-profit organization, and went to the Department of Education to push for a program in schools that would expose learners to the idea of entrepreneurship and help them develop their concepts.

"They were not really interested, they said, 'science and maths is really what is important, entrepreneurship is not what we are focussing on'. So I decided to go it alone and left CPUT to create Teen Entrepreneur, which has involved advocating and creating programs to support young people in developing business ideas and skills."

The plan is to create entrepreneur 'societies' in schools where learners can develop their own ideas and get the support they need to turn them into practical businesses.

"It is easier said than done," Zingoni admits. "You can go to a school and talk to the kids for 10 minutes in assembly, but then what? You are not going to convince them that way."

“

Look within your local community, use your passion and talent to see how you can solve your own community's problems. Obviously, there is a social element to it, but it must have a financial gain to convince young people that entrepreneurship is an option.

Zingoni instead approached schools to create a lesson outside of normal hours with up to 50 learners taking part. But it has been painstaking work.

"We have a program that has 11 modules, but the core is how do you come up with a business idea. If you are in Khayelitsha (a township in South Africa's Western Cape province) or wherever, it is not just in major centers where entrepreneurship is an option."

"Look within your local community, use your passion and talent to see how you can solve your own community's problems. Obviously, there is a social element to it, but it must have a financial gain to convince young people that entrepreneurship is an option."

Teen Entrepreneur also hosts weekend programs, monthly indabas and conferences that are in addition to the work they do in schools.

"It has been a slow process. Very slow in fact. The hardest thing has been convincing policy-makers that we need to expose



young people to an entrepreneurial mindset and culture.

But we are getting to where we want to be, although obviously the Covid-19 pandemic has set us back this past year," Zingoni says.

"We are now working with the Eastern Cape government, who love our program. The Department of Education is also now finally running what they call the E3 program (Entrepreneurship, Education, Employability) and they have partnered with us on this. That has given us access to all South African [government] schools. If there was no Covid, we would have already rolled out that program."

But the reach into schools across the country presents a massive logistical challenge, and that is where Teen Entrepreneur has turned to technology.

"If we went into every school, it would mean I am in charge of 27,000 teachers who will present the program," Zingoni says.

"Then multiply that by maybe 50 learners in each program... it is a massive reach."

"In 2016, we decided to create a digital platform for the program, where we could refer the teachers to the portal [to get the information they need]. It took until 2019 to find a partner to assist us, and that was the University of Cape Town's computer department."

"Schools can now get all the information they need online and create their own entrepreneurship societies in that environment."

Zingoni says the program grapples with topics very much relevant to the world of today.

"Sustainability, the environment and climate change are factors we delve into, and it is about creating businesses that are cognizant of these issues."

She adds they have already received interest from outside of South Africa in their program, and the decision to go digital has opened other doors.

"This is not just a South African issue, it is an African problem," she says. "We have had interest from Tanzania, Kenya, Togo... now you can learn online, it is possible to have the program in these countries and it costs nothing to take part." F

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Is your business digitally native?
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Are you applying intelligence around data?

Digital transformation is no longer a choice, it's a fundamental business strategy that must be interwoven with broader operational initiatives.

The world is progressively moving towards digital dependency. From businesses to people "digital consumers" are increasing rapidly. Today's businesses will be measured by their ability to meet and exceed a new set of demanding digital performance benchmarks.

Africa has the benefit of being largely unconstrained by the challenges posed by overhauling legacy systems. This creates opportunities for businesses to leverage digital technologies to revolutionise and disrupt the business landscape. Intelligent adoption and application of digital technologies will enable African organisations to improve bottom-line performance and contribute to growth across the continent.

To compete effectively in today's ever-changing landscape, business must find ways to embrace the opportunities provided by cloud computing. By infusing their unique organisational resources with the power of intelligent IT, today's organisations can set the stage for future success.

Google, in partnership with Digicloud Africa, is fundamentally changing the business landscape in Africa with a host of innovative cloud-based tools. Digicloud and Google aim to drive meaningful digital transformation within Africa and have successfully helped numerous organisations across sectors drive significant gains through the adoption of Google Cloud products.

The Central Bank of West African States turned to Digicloud and Google to assist them in moving to an online, collaborative work environment. The unprecedented nature of the COVID-19 pandemic set in motion one of the most abrupt business disruptions in decades. Organisations were forced to rapidly transition their staff to a remote workplace in order to maintain brand continuity. This was the case for the Central Bank of West African States. With lockdowns imminent, the bank moved 1,300 employees across eight countries from office-based working to secure, online collaboration in one week - without any service disruption - with Google Cloud.

ACBM, a bespoke digital and service-based investment banking company, developed itself into one of the world's first regulated, digitally-native investment banks using Google Cloud solutions. Cloud-native businesses need robust solutions to develop software faster and deliver better customer experiences. Google enabled ACBM to create reliable, scalable applications for its cloud-first strategy.

It's clear that digital transformation is a fundamental business imperative. Google Cloud is the answer for organisations ready to address the growing digital and work transformation challenges in Africa. As the willingness and capacity to invest in more digital products spreads across the continent, Google has established a foothold in these markets, with

the help of Digicloud Africa. Through Digicloud, Google is able to support and serve all regions in Africa.



About Digicloud Africa

Digicloud Africa is Google's chosen enablement partner in Africa. Through Digicloud, Google is creating an ecosystem of Google Cloud partners across the continent. Digicloud supports its partner network by providing the necessary training, tools and resources needed to successfully implement cloud solutions and support to their customers. As customer demands for technology intensify, Digicloud is increasing its investment in supporting its partners to achieve sustainable growth. Digicloud's partner enablement helps organisations build skills around open, advanced technologies in order to go to market with outcome-based solutions.



Survivors And Thrivers

Two African entrepreneurs in the United Kingdom. One tale of grit and gumption in the face of the Covid-19 pandemic.

BY PEACE HYDE

IN 2019, WHEN BERNICIA BOATENG OPENED HER namesake makeup studio, Bernicia Boateng Studios, in London's high street, it made her the first Ghanaian to do so. Her makeup business had grown considerably over the years, as she cultivated some big names as her clientele including, as she says, Nigerian writer Chimamanda Ngozi Adichie and models Leomie Anderson and Jourdan Dunn.

She was beginning to be recognized for her work with features in publications such as *Vogue* and collaborations with beauty and fashion houses such as Estée Lauder and Yves Saint Laurent. When the *BBC* and *Evening Standard* were looking for a voice representing excellence in the makeup industry, Boateng was the go-to name.

But then came the pandemic, the lockdowns, the second wave, and a twist in the fairy tale.

"When I realized that face-to-face contact wasn't something we can rely on anymore, I kind of moved the brand towards education," says Boateng, on her decision to strategize to survive.

But how did she end up in the beauty business in the United Kingdom (UK)?

"I have always wanted to be a makeup artist because my mum loved makeup and it was something I always found desirable. I wanted to be just like my mum who was a very glamorous woman."

I remember she would take us to Selfridges (high-end department store) on the weekends after drama school and she would make us sit down and watch as she got her makeup done and that is where I got interested," says Boateng.

Those were the days before YouTube and social media makeup tutorials, when the only way one could hone the craft was by rolling up the sleeves and learning on the job or from a professional on the shop floor. And that is exactly what Boateng did. After graduating with a business management degree from the University of Leicester in the UK, Boateng got her first job with Mac Cosmetics as a makeup artist, before branching out to become her own professional.

"2011 and 2012 [were the years] makeup took over and it was all over social media with videos on how to recreate makeup and I just realized that there was a gap in the market in terms of doing a luxury makeup look for dark-skinned girls and I wanted to fill that void," she says of the early years.

But now, in order to fill the void created by the pandemic, she has had to give her business an even bigger digital persona.

"When it first hit, the first thing I thought of was taking my work online. A lot of people still want to look good at home and we don't have a lot of control about where we can go or where we can eat but one thing we do have control over is how we look, how we make

ourselves feel and how we make other people feel. So, it was imperative to show people how to look and feel good,” says Boateng.

She began with online tutorials that did so well that they were covered by the BBC. She also began creating more content establishing a more personal rapport with her 115,000-strong Instagram audience, taking them on a journey to enhancing their self-esteem. The result of these initiatives means Boateng has now found a new revenue stream to stay afloat.

But who knows for how long until the pandemic ebbs away?

With the UK experiencing harsh restrictions, startups have all either had to fold up, pivot or start all over.

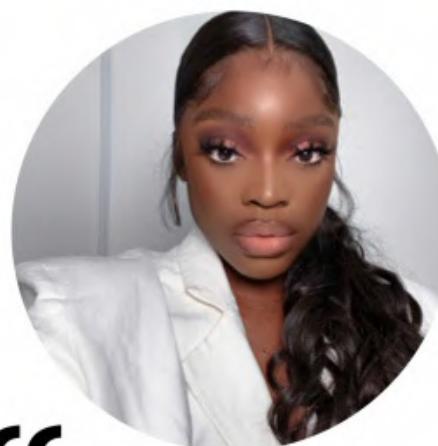
Take for example, Brimms Bottles Limited, founded by P.Y. Adjei, which had to adapt almost immediately to the new economic climate.

After graduating from the University of Greenwich, Adjei worked in the banking sector for about five years before listening to his inner entrepreneurial voice. He began by creating content for a number of magazines before launching his own publication, which he ran for a few years. With Brexit gaining momentum, Adjei had his eureka moment during a chance encounter with a friend that led him all the way to China in search of greener pastures.

“My time there influenced what I am doing today because I got a chance to meet a number of manufacturers and from there, I came across what I thought was a brilliant product,” says Adjei.

That product was a stainless-steel bottle that kept a drink warm for 12 hours or cold for a whole day.

“It looked beautiful to me and the only thing missing was the product packaging. It was mainly boring colors and that is where my creative direction kicked in. I wanted the bottles to have a better design and style and from there I started working on the idea and trying to see what I could do, design-wise, to improve it and build the product and



“

We don't have a lot of control about where we can go or where we can eat but one thing we do have control over is how we look.

– Bernicia Boateng

“

I remember going to see my manufacturer in Germany and they were holding a conference in Frankfurt and we got there and realized that the place was completely empty and that is where I saw how serious [Covid-19] was and how it would impact business.

– P.Y. Adjei

here I am today.”

But nobody could have foreseen the body blows of Covid-19.

“Brimms Bottles kicked off right at the beginning of the pandemic and I remember going to see my manufacturer in Germany and they were holding a conference in Frankfurt and we got there and realized that the place was completely empty and that is where I saw how serious this was and how it would impact business,” says Adjei.

His problems were just about to begin.

He experienced undue delays for the samples he had ordered of Brimms Bottles due to lockdowns implemented all over the world.

“But we managed to work through that during the sample stage but finally when we got the final order in, that got delayed as well, taking about three to four months from China because of the pandemic,” says Adjei.

Initially, the idea was to have his products at a few outlets such as cafes and were also meant for outdoor activities and travels, all of which were unduly affected by the pandemic.

Now, he is leaning more towards the e-commerce aspect of the business.

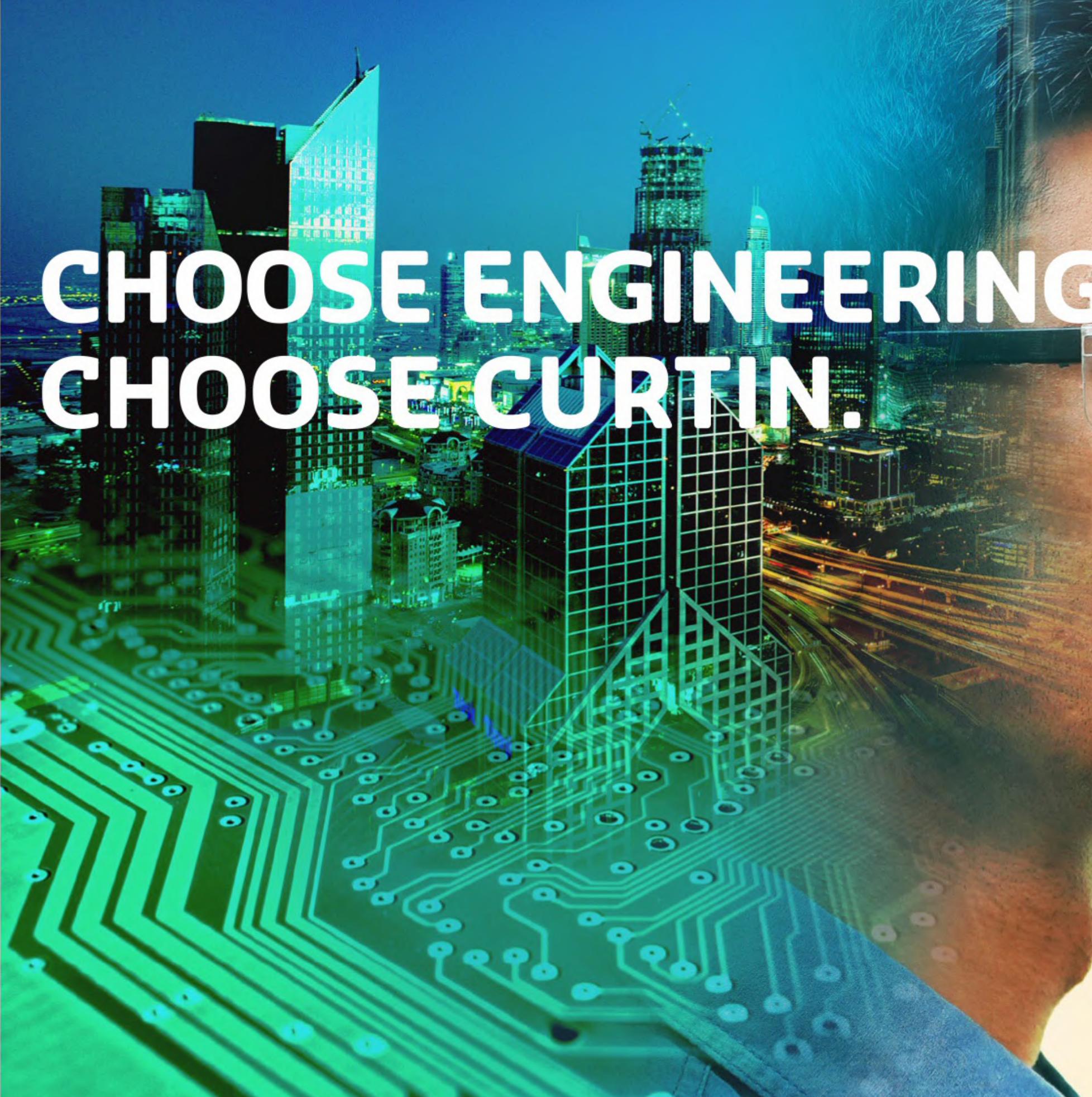
“I used my unique skills in terms of content creation and web design to make sure that my website works perfectly and to make sure I am working to get my products out there.

“I am also branching into co-branding which allows a company or individual to create their bottles and co-brand along with mine so I am diversifying to give the bottles other avenues to survive,” says Adjei.

Going digital is the only way forward for Adjei, Boateng and many other startup entrepreneurs in the diaspora who had just begun on their journey in business, and have had to script their own rulebooks of survival.

Their story is no different from their counterparts across the world.

It's one of grit, gumption and the fortitude to stay the course, no matter what. 



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A Higher Calling

Billionaire Beau Wrigley is building his cannabis company, Parallel, to be bigger than his family's chewing gum business—and he's not banking on getting consumers stoned.

BY WILL YAKOWICZ

IN 2017, WHEN BILLIONAIRE WILLIAM "Beau" Wrigley Jr. was pitched cannabis as a new investment opportunity by his family office's managing director, Jay Holmes, he shut it down immediately. "Are you kidding me?" he said. "I'm not excited about wearing orange and possibly ending up in prison."

Still, Wrigley, heir to the all-American chewing gum fortune, couldn't deny that the burgeoning legal marijuana industry checked off all his investment criteria: a trend in changing consumer behavior, a transforming regulatory environment and multiple applications in health care.

So Wrigley rethought the proposition. He told Holmes to find a target company, and he eventually located one at home in Florida: Surterra Wellness. Wrigley and his team flew down to its 180,000-square-foot operation outside Tampa, the company's biggest facility where cannabis flower is grown. After inspecting the cultivation site—it was the first time the 57-year-old Wrigley, who says he has smoked pot only once in his life, had seen a room full of cannabis—the group boarded the plane home with the flowers' sweet, pungent smell permeating their clothing.

"No one had known where we were, and I think they thought we were out getting high," Wrigley recalls on a sunny afternoon while sitting on the patio of his North Palm Beach estate on Lake Worth lagoon.

Soon after that excursion, he led a \$65 million investment round in Surterra, and in November 2018, he replaced the company's cofounder as CEO. Renamed Parallel, Wrigley's company now has 42 dispensaries across three states, with 39 in Florida and the rest in

Beau Knows

Part of Wrigley's business motivation is to find replacements for Big Pharma drugs. He believes innovative cannabis products can "change the face of health care."



Massachusetts and Nevada, with new ones slated to open in Pennsylvania and Texas. To date, it has raised a total of \$400 million largely from Wrigley and other high-net-worth individuals.

The latest funding round, which closed in 2020, valued the \$250 million company (2020 sales) at an estimated \$2 billion.

In 2019, Parallel spent more than \$100 million on a Boston-based startup, Molecular Infusions, which is working on a THC-infused seltzer. Parallel is also in talks for a roughly \$150 million acquisition of a three-store dispensary chain in Chicago, which would bring the company to the city synonymous with the Wrigley name.

It's also exploring going public in Canada via a SPAC deal, according to two people with knowledge of the discussions. Wrigley denies that the company will go public.

In just three years, Wrigley has transformed Parallel into a new kind of cannabis company. On a mission to build the first mainstream marijuana brand, he has stacked his management with executives and advisors from some of the largest and best-known corporations in the world—including Coca-Cola, Walgreens and Patrón Spirits. Wrigley believes his cannabis concern could one day rival his family's chewing gum business, which he sold to Mars, Inc. for \$23 billion in 2008.

"I think this can be bigger than the Wrigley company," he says. "At Wrigley, we brought joy to people's lives. This is much bigger than that."

Parallel is not the largest cannabis firm in America—Massachusetts-based Curaleaf is—or even the largest in Florida (that's Trulieve), but it has slowly and methodically built up its operations.

Its strategy is markedly different from that of Curaleaf, which pulled off an aggressive national rollup strategy headed by its billionaire chairman, Boris Jordan. Instead of a national land grab, Wrigley has mostly focused on Florida, which he calls "New York South" and where medical marijuana is legal.

Florida has a growing population of 21 million and more than 100 million visitors every year, and Wrigley expects that when it legalizes cannabis for recreational use, his company will grow by a factor of ten.

“

In comparison to Wrigley, this is also a crosscultural product... Just like we sold in 180 countries, cannabis plays everywhere.



Parallel Lines

Among Wrigley's cannabis brands is Jimmy Buffett's Coral Reefer, which includes vapes, balms and gummies—but no gum.

"The potential is huge in Florida alone," he says.

The hidden value in Parallel lies in its investments in medical and recreational R&D. The company inked an exclusive partnership with biopharma company Eleszto Genetika in Budapest, Hungary, in 2019. Through a yeast-based microbial process, Eleszto Genetika can genetically sequence rare cannabinoids and engineer specific effects at commercial scale. One future product Wrigley is excited about is CBN, a cannabinoid

“

I see us [as] in the era before Steve Wynn came and made it a destination experience.

that helps improve sleep.

“Call it an ‘Ambien killer,’ ” he says.

Parallel is also looking at THCV, which has the same euphoric effects as THC, the main psychoactive compound in cannabis, but is an appetite suppressant—meaning no more “munchies,” he says. The idea is to create a noncaloric alcohol replacement that “makes you feel better, is not more addictive than a cup of coffee, has no side effects,” he adds. “And, oh, by the way, it suppresses your appetite.”

He goes on, his Italian water dog, Rio, sitting at his feet: “One of these products is bigger than the entire company.”

Wrigley, who uses his company’s THC drops in lime LaCroix to unwind, says cannabinoids have the potential to improve “quality of life,” whether by easing one’s pain, reducing anxiety or helping promote a good night’s rest.

Parallel also has something no other cannabis company has: the Wrigley name.

Morgan Paxhia, cofounder of a San Francisco-based \$150 million cannabis investment firm, believes Wrigley is primed to build a successful, mainstream cannabis company. “It’s ingrained in their DNA,” Paxhia says. “Multigeneration, family-driven—this is how we build big, durable legacy brands.”

Wrigley was born into one of America’s great business dynasties. His namesake great-grandfather, William Wrigley Jr., started William Wrigley Co. in 1891 as a manufacturer of soap but pivoted in 1893 to produce Wrigley’s chewing gum instead. The company was handed down through the generations, and Beau’s father ran it until the day he died, in March 1999. Beau, who started working at the company over his summer break when he was 13, was 35 years old when he became CEO and chairman the day after his father passed away.

He is credited with breathing life into a 100-year-old family business by helping replace its natural-gum formula with a more cost-effective synthetic base and expanding its reach by acquiring Life Savers and Altoids.

In October 2008, Wrigley closed the deal of his lifetime—

he took Wrigley Co. private by selling to Mars, Inc., another company owned by a family of billionaires.

Understandably, many assume Wrigley will produce a cannabis gum one day. After launching into a three-minute explanation of the science and molecular biology behind ensuring the release of the right flavors for the appropriate amount of time from chewing gum base, he says he’s concerned about how expensive the R&D process could be—as well as the risk of appealing to children. Still: “Never say never,” he says.

Much like Wrigley Co., Parallel has global ambitions.

According to an investment document obtained by Forbes, Parallel is exploring cannabis and hemp cultivation licenses in Southeast Asia. (Wrigley admits he has spoken to government officials in the region but says talks have slowed during the pandemic.)

“In comparison to Wrigley, this is also a crosscultural product,” he says. “Just like we sold in 180 countries, cannabis plays everywhere.”

When asked what his ancestors would think about his foray into the industry, Wrigley takes his time to answer. Standing on a wooden walkway leading to the main entrance of his estate, he is flanked by two ponds filled with koi. Flags on a small putting green nearby wave in the breeze off Lake Worth.

“Gosh, at first blush they would roll over in their graves,” he says with a smile.

Although pot is still illegal under federal law, 43 states have created their own legal markets of one kind or another, and with Democrats now in control of Congress, national legalization seems closer than ever. “I don’t consider our business illegal,” he says. “It’s caught up in a political quagmire for the moment.”

Wrigley, who has a net worth of \$3.1 billion, says he feels lucky to be a part of helping an industry transform from black-market to legal. The last generation of entrepreneurs who made that claim turned the desert town of Las Vegas into a city home to multibillion-dollar public corporations.

Wrigley compares the cannabis industry today to Vegas in the post-Mafia period before luxury hotels dominated the Strip.

“I see us [as] in the era before Steve Wynn came and made it a destination experience,” he says.

“Anyone can put up a table with green felt and gamble. But he created this whole experiential thing with the art, the Bellagio, the fountains, and it became a destination.” Wrigley believes Parallel can become the world’s first gold-standard cannabis company by changing how Americans view marijuana, much like Wynn made over Sin City’s image. “It isn’t about getting high,” he says. “It’s about quality of life.” 

Africa As A Massive Logistics Opportunity

Mohammed Akoojee, Group CEO of Imperial, is optimistic about continental growth and reflects on the challenges and opportunities in the logistics supply chain.

BY CHANEL RETIEF

A NEW GLOBAL CEO SURVEY RELEASED BY PricewaterhouseCoopers in mid-March says that CEOs are voicing record levels of optimism in the global economic recovery.

It's a sentiment Mohammed Akoojee, the Group Chief Executive Officer of Imperial Logistics, a company listed on the Johannesburg Stock Exchange, conveyed in an interview with FORBES AFRICA in February, on the opportunities and optimism in a crisis-ridden world.

The world Akoojee inhabits is that of logistics and global supply chains that were disrupted when the pandemic hit in 2020, but then, he says: "This has definitely been an opportunity to reinvent ourselves."

Imperial, a global logistics company focusing on areas such as healthcare, automotive, chemicals and commodities among others, provides services in about 20 markets across the African continent, and aims to take its clients and products "to some of the world's fastest-growing and most challenging markets".

"If you look at the activities we do in the logistics supply chain, we do everything from transport, warehousing, right through to sales and marketing and demand generation on a product to an end market across Africa," says Akoojee.

Having assumed his current role at the age of 40 in February 2019, Akoojee says 2020 was not easy, especially referring to some of the industries that took the brunt of the pandemic.

"July and August were challenging because, you know, the liquor and tobacco industries were still restricted and we could not trade them," Akoojee says.

"Clients have battled with [the] impact [of the] supply chains on their businesses which means our services are needed even more. Especially because a lot of companies that have been manufacturing or have been importing have had to rethink their supply chains based on what the pandemic has done."

Akoojee states that the logistics sector had no choice but to quickly recover from that shortfall.

"It's been a six-month period for us in this financial year of 'stop-start,'" he explains. "We would just start getting momentum and then there is a hard lockdown. It does make life challenging, particularly in logistics, because [in] supply chain disruptions, the stop-start type of thing has got massive implications on manufacturing."

Born in the small commercial town of Zeerust in South Africa's

North West province, from a young age, Akoojee says he grew up feeling prepared that "things happen to you without you knowing them".

Recalling his humble beginnings as "typical of a young Indian boy growing up", Akoojee chuckles as he says: "I did not know 100% where life would take me but knew that if I educated myself in the field of accounting and business, it would open opportunities for me."

Akojee has been with Imperial for 11 years.

"I've had various roles in the organization, from an M&A executive to running a big part of Imperial in Africa to becoming the group CFO to being involved with unbundling of our motor interests, and then becoming the CEO two years ago. It's been a journey. But it's been an incredible one and my journey is not done here."

Akoojee believes that the group has a strong market positioning in Africa.

Although the hardest hit in Africa was South Africa, Akoojee is happy to report that business was not as bad in East and West Africa. In fact, it's not all bad news.

"I am positive because our business is in good shape. You know, despite us going backward on profits, we are winning a lot of new business. We have seen good top-line momentum in our commercial function, and our pipeline of opportunities is significant."

Akoojee's confidence also seems to be driven by his passion for Africa.

"We have identified Africa as a massive logistics opportunity. We've got a strong network footprint. And why are we excited about the logistics industry in Africa is due to the lack of infrastructure. But the fact that there are so many people on the continent; our services, and the type of logistics we do, talk to that."

How does he manage to see opportunity in adversity?

"I always look at the glass half full rather than half empty... you can look at this crisis as either a massive setback or an opportunity," Akoojee says.

"You're going to have setbacks in life, you're going to have things that go wrong. And for me, it's how you react to those things. For me, the key to a successful company, a successful person in all aspects, is how you react to failure." 



Mohammed Akoojee



Down To The Elements

Are better batteries the answer to a fossil fuel-free world? Scientists are looking again at the minerals used to make lithium-ion batteries to address their sustainability and technology that can scale electrochemical energy storage going forward.

BY TIANA CLINE

THEY'RE IN OUR mobile phones, laptops and digital cameras. They power up remote-controlled drones and toys, hearing aids, wearables, pacemakers and are what you'll find in electric cars. Making their debut towards the end of the 1990s to power consumer electronics, lithium-ion batteries were both a strategic resource and the foundation of a wireless, fossil fuel-free society.

"The development of better batteries is strongly connected with the evolution of our society," says Teodoro Laino, the manager of Accelerated Discovery at IBM Research Europe.

With an estimated life span of two to three years (or 300 to 500 charge cycles), the technology underpinning lithium-ion batteries may have opened up opportunities for market growth over the past 20 years, but there's room for advancement. Batteries as we know it have a storage problem. And as we transition towards more sustainable and renewable sources of energy, like solar power and wind, battery storage has become a bottle neck. Scientists are relooking at the minerals used to make these batteries, and how technology can scale electrochemical energy storage going forward.

BLOOD BATTERIES?

Lithium-ion batteries contain other elements, besides lithium, that have created global controversy in how they are mined. How big technology companies extract cobalt and copper from the Democratic Republic of the Congo (DRC), for example, has been linked to human rights abuses, environmental destruction and child labor. "There's now something called a battery passport which shows you the environmental stewardship used in mining and processing those minerals," explains Dr Mahlanyane Mkhulu Mathe, the manager of the



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There's a lot of lithium dissolved in the ocean; the only problem is finding out how economically advantageous it is to extract lithium from sea water as opposed to mines.

– Teodoro Laino, manager of Accelerated Discovery at IBM Research Europe

energy materials, materials science and manufacturing at the Council for Scientific and Industrial Research (CSIR).

“Heavy metals like cobalt are present in batteries and cobalt is only mined in a couple of places in the world. These elements, even more than lithium, are going to face extensive logistic problems in terms of materials availability and scaling the current lithium-ion technology to eight-plus billion inhabitants on this planet,” adds Laino.

Mining lithium is somewhat less tricky – there are more locations where it can be found, ranging from Australia to Chile and China. The issue with lithium is that extracting it requires a lot of water – approximately 500,000 gallons per metric ton – and the chemicals used impact the environment.

FAST, CLEAN AND GREEN

According to data from EV-volumes, a Sweden-based consultancy, just under 64 million cars were sold in 2020 worldwide and only 4.2% of those cars were electric. While this percentage is up from 2.5% in 2019, many countries are still looking to phase-out fossil fuel vehicles – in other words, cars that run on petrol or diesel – to reduce transportation-related emissions.

The result of this is that the automotive industry is turning to electric vehicles (which studies show are more ecological) but in order to replace all cars, we need better batteries. Right now, in order to scale electrical mobility, more lithium will be required.

“The reality is that the transportation sector and energy go hand-in-hand,” adds Laino. “With electric mobility, we will need more lithium than can actually be mined in the mines. There's a lot of lithium dissolved in the ocean; the only problem is finding out how economically advantageous it is to extract lithium from sea water as opposed to mines.”

Lithium mines are essentially huge basins of sea water that have dried up naturally over the course of hundreds of millions of years. They have a high concentration of lithium salt unlike in the ocean where everything is diluted which makes extracting lithium more intensive, ecologically.

“Lithium is an abundant element. There is no shortage of it. It's the other elements, like nickel and cobalt, that are restricted to a few geographical areas,” explains Laino.

AFRICA'S ELECTRIFICATION

The impact of mining rare earth elements, along with the need to fast-track the discovery of better battery materials, ties into the 2030 Agenda for Sustainable Development – universal access to affordable electricity. But what do batteries have to do with a more efficient and resilient grid?

“If we envision the future of electrification, it is going to be distributed energy. The continent has a lot of wind and solar energy but unfortunately it's impossible to store that now,” adds Dr Solomon Assefa, Vice President at IBM Research for Africa and Emerging Market Solutions. “It's important to accelerate the discovery of new materials, and how we use the materials in an effective way.”

IBM Research are relooking at the scientific method with a new, technology-centric research paradigm they're calling ‘Accelerated Discovery’ – using artificial intelligence and cloud technologies together with advances in computer infrastructure (like quantum computing and robotics) to speed up scientific discovery and address urgent challenges like electrification.

“We've been using the same old techniques when we think about sustainable development but now we have the tools to really rethink how we can save humanity and the planet,” explains Assefa.

At his lab in Zurich, Laino is looking into developing batteries that do not contain nickel or cobalt in the cathode material; batteries which reduce the formation of dendrites (the spiky structures that plague lithium batteries, causing short circuits and occasionally fires) resulting in a safer battery that recharges quicker.

“Batteries are nothing more than energy storage. The only difference is the amount of time in which you are releasing that energy,” says Laino. “We need to address the sustainability problems. How can we replace those heavy metals that are required in the batteries and that are legally available from a production perspective?”

Flammability and charging time are both key concerns for the growing electronic vehicle (EV) industry. According to the Institute for Energy Research in Washington, between 2021 and 2030, around 12.85 million tons of EV lithium-ion batteries will go offline worldwide, and over 10 million tons of lithium, cobalt, nickel and manganese will be mined for new batteries.

There is an abundance of minerals in Africa, yet, according to Mathe, there is no country that has the capacity or the entity to make (or even recycle) lithium batteries just yet. The future of electrochemical energy storage is not simply about sustainability or moving away from fossil fuels, but the acceleration of science using next-gen technology to design better batteries that meet our growing need for electrification going forward. F



5by20® is The Coca-Cola Company's global initiative to enable the economic empowerment of **5million women entrepreneurs** across our value chain by 2020. Through **5by20** programs, we enabled women entrepreneurs to overcome social and economic barriers by providing them with business skills training, access to financial services and/or assets, and access to mentoring networks.

The Coca-Cola Company and its partners are proud to celebrate exceeding our **5by20** goal by enabling the economic empowerment of more than •••••••••••••••••••••
6 MILLION WOMEN 
around the world •••••••••••••••••••••

OVER 2 MILLION WOMEN
were enabled economically
in **33 African countries**



RESULTS BY VALUE CHAIN SEGMENT

61% of women enabled are retailers



PARTNERS

Women's empowerment and progress against all the Sustainable Development Goals requires the collective effort of governments, civil society, and private sector organizations. Over the last 10 years, we have worked with various partners to provide business skills training, mentoring networks, and financial services to help women entrepreneurs improve their livelihoods, families, and communities.



Designing A Circular Economy And A World Without Waste

As the climate crisis becomes the greatest challenge of our times, the world's largest beverage company, The Coca-Cola Company, has taken the initiative to make all its packaging recyclable by 2025, and use 50% of recycled materials for its cans and bottles by 2030.

ONE MILLION PLASTIC BOTTLES ARE bought around the world every minute. Even though we're staying home and businesses are producing less waste, the world still has a growing plastic pollution problem. According to Reuters, the coronavirus pandemic accentuated a trend where people are creating more, instead of less, plastic waste. One of the world's largest beverage companies, The Coca-Cola Company (TCCC) has taken the initiative to help solve this packaging problem through its ambitious World Without Waste (WWW) environmental programme, launched in 2018. Through WWW, the company is working towards making all its packaging recyclable by 2025, using 50% recycled materials in its bottles and cans by 2030. TCCC also aims to collect and recycle a bottle or can - regardless of where it comes from - for every one they sell by 2030.

"For us, as a bottling partner, this is where the rubber hits the road. We make sure that it's not just an empty statement, but we live it," says Tshidi Ramogase, Head of Public Affairs, Communications and Sustainability at Coca-Cola Beverages Africa (CCBA), TCCC's largest bottling partner across the continent.

Coca-Cola's global World Without Waste (WWW) vision has three key elements: Design, Collect, and Partner. Because Coca-Cola's goal is to create economic opportunities in local communities, the WWW initiative relies on like-minded industries, government, stakeholders, and communities to collect and recycle packaging. A report released by the Centre for International Environmental Law showed that certain packaging can have a bigger impact on climate change than the fuel used to ship it to market.

"If we're going to use a package, let's think about where it will end up. It's not just about buying it and that it's consumer-friendly and convenient. It's the entire full life cycle of the bottle," explains Ramogase.

PET IS NOT TRASH

After collection, The Coca-Cola Company and CCBA work

closely with recyclers to create a second life from each and every bottle. PET (which stands for polyethylene terephthalate – a form of polyester) is a versatile material. Recycled PET bottles can be used to make many products like new PET bottles, automotive parts, home textiles, polyester stable fibre and industrial end-use items.

"PET is not trash and plastic bottles are not trash! Recycling creates social impact. People that collect and sell PET, the companies that set up recycling businesses, employ people. That's why the partnership element, the third element, is critical. Every time we look at our packaging, we have to look at opportunities," says Ramogase.

Under the Design pillar of World Without Waste, in South Africa CCBSA introduced 2 litre returnable bottles PET bottles, which have a R9 deposit. "The point of returnable PET is to give consumers an alternative to one-way bottles," says David Drew, Sustainability Director for Coca-Cola Africa Operating Unit. "We want the bottle back. We want people to return the bottle. That's why we've made sure that there's an incentive (the R9 deposit) to do so," adds Drew. Another initiative under the WWW Design Pillar is the transition of the iconic green Sprite bottle to a clear bottle in 2020. Coca-Cola Company initially started this colour change of the Sprite bottles in South Africa, but there are plans to roll this out throughout the rest of the continent. The reason behind this transition is that while green PET can be recycled in a number of ways, it can be recycled into fewer things than clear PET. "Clear and light blue PET are used for bottle-to-bottle recycling" explains Drew. "Whilst our Sprite bottles were recyclable, they couldn't be

Every time we look at our packaging, we have to look at opportunities...

– Tshidi Ramogase, Head of Public Affairs, Communications and Sustainability at Coca-Cola Beverages Africa (CCBA)



recycled back into bottles that we could use.”

“The objective is about sustainability and doing things the right way that are going to ensure that we leave this planet a better place than when we found it. The by-product of that may be the value of PET going up for waste pickers. The by-product of doing the right thing is new jobs for people, the opportunity for plastic value to go up and recycling capacity to go up,” adds Thabiso Mabitsela, Sprite Senior Brand Manager, Coca-Cola Southern and East Africa Business Unit.

RECYCLABILITY STARTS WITH DESIGN

Located in Wadeville, Johannesburg, Vijay Naidu and Chandru Wadhwani are the Joint Managing Directors of Extrupet, one of the largest and most advanced recyclers of PET bottle material on the African continent. “We’re soon to be a global population of eight billion people on this planet and the reality is if you’re wanting to transport food, water, liquids, to that quantum of people, plastic comes with the lowest carbon footprint,” says Wadhwani. “The danger is not recognizing that and moving to the alternatives that will actually do more harm to the environment than good.”

Extrupet specialize in reclaiming and converting waste PET bottles into high quality recycled PET raw material. Wadhwani sees plastic as a valuable product with an end-of-life use because it is circular. At the same time, he wishes more product owners would be mindful when it comes to design, like Coca-Cola is doing with Sprite’s refreshed look. While bales of green PET sit and wait to be recycled, clear bottles can go into the bottle-to-bottle recycling value chain straightaway.

The coronavirus pandemic initially put a decline on the

tonnage of post-consumer PET bottles the recycler could buy, as a registered essential services supplier to the food and beverage industry, Extrupet felt a strong sense of responsibility to keep the PET value chain alive.

“Even though we directly employ close to 500 people... the indirect job creation from projects like this runs into the thousands. We saw how difficult it was for the [reclaimers] during lockdown and still. Every bottle that we can take in is going to have a value, down the value chain to the waste-picker,” says Wadhwani.

To support this, Coca-Cola in South Africa has introduced a COVID-specific intervention for the recycling value chain, putting extra funds into PETCO as well as buy-back collection centres. “If they don’t have the money to buy the raw materials, the collectors will stop earning money and collection will literally drop,” says Drew.

A World Without Waste is about extended producer responsibility, collection for a common purpose and ubuntu. Through The Coca-Cola Company and its partners, recycling not only provides economic opportunities, it ensures a better future for the next generation to come. **F**

– By Tiana Cline



Replenishing Africa's Water Systems And Transforming Lives

The Coca-Cola Company is working with its partners to bring improved access to water and changing the landscape of life for six million people in Africa.



Coca-Cola is looking at new technologies and programs that can help it achieve a global benchmark of 1.2 litres. “How do we take this to the next level to ensure that the water we do get, we use sustainably?” asks Brasler.

The answer lies in The Coca-Cola Foundation’s flagship African water stewardship program called RAIN, or Replenish Africa Initiative. Backed by a \$65 million-dollar commitment, RAIN runs water-based projects that are tailored to address specific community needs. “RAIN is ultimately about Coca-Cola working with others to bring improved access to water for six million people in Africa,” explains Dorcas Onyango, Sustainability Director for Coca-Cola Africa Operating Unit. “Water is a local issue and RAIN is working in 41 countries and over 4,000 communities. We are looking at every aspect that is locally relevant in a community to make sure that people have access to clean water.”

“Over 300 million people on the African continent lack access to safe water and sanitation. We built RAIN to try and address that need,” adds Carlos Pagoaga, Senior Director Community Partnerships at the Coca-Cola Company.

RAIN’s success is defined by how many people the project could reach at a level which could scale. When Onyango joined the program in 2009, the United States Agency for International Development

ONE OF THE GREATEST CAUSES OF POVERTY in Africa is often overlooked – a lack of access to clean drinking water. By 2025, half of the world’s population will be living in water-stressed areas with one in three people, globally, not having access to safe drinking water, according to the World Health Organization (WHO). Admittedly, The Coca-Cola Company is a large consumer of water which is why water security is central to its sustainability goals. “Without water, we don’t have a business, yet in water-risk areas, we compete for water. In areas where the municipalities do allocations of water, we have to be a responsible citizen in terms of how we use that water,” says Mark Brasler, Former Head of Quality, Safety, and Environment, Coca-Cola Southern and East Africa. As part of a water use minimization workstream,

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RAIN is ultimately about Coca-Cola working with others to bring improved access to water for six million people in Africa.

– Dorcas Onyango, Sustainability Director, Coca-Cola East Africa

(USAID) gave the program a dollar for every dollar they had invested.

“We invested \$30 million and they invested with us almost the same amount. Subsequent to that, there have been several other great organizations, and we’ve been able to progress from certain types of interventions to a broader set of interventions. It means we are solving the life problems and the relationships that people have with water,” adds Onyango.

FROM TOP TO TAP

From the Upper Tana-Nairobi Water Fund to the Greater Cape Town Water Fund, RAIN partners with NGOs that have the expertise to deliver impact. One initiative meant clearing invasive, alien plant species (such as pine trees) from Cape Town’s critical catchment areas.

Removing invasive species from priority zones means reclaiming the amount of water they take up. This allows for more water reaching the dams which supply the municipalities and agriculture. Louise Stafford is the Source Water Protection Director for The Nature Conservancy in South Africa. She establishes water funds, such as the Greater Cape Town Water Fund, working with stakeholders to secure water for different cities and regions. One of the first private sector donors of the Greater Cape Town Water Fund was The Coca-Cola Company. Even though the Cape Town drought of 2018 is behind us, population growth and associated increase in demand means that the demand for water is on the verge of outstripping the supply.

“The city is looking at other options such as desalination, ground water exploration, increasing the dam capacity but the one element that was missing up until recently was working with nature,” explains Stafford. Nature-based solutions are one of the most cost-effective and sustainable ways of augmenting water. “The city is now investing in nature-based solutions as part of its new water strategy.”

Focusing on seven priority areas in the Western Cape Water Supply system, Stafford’s team worked out they could gain up to two month’s water for Cape Town by clearing invasive plants in the key catchments at a cost of other options such as desalination. “We started very small, but with the support of Coca-Cola, we have created 260 jobs, and in the first year, working together, we cleared 9,000 hectares,” says Stafford.

The goal is to clear 54,000 hectares within the seven priority sub-catchment areas by 2025. Seed funding provided by The Coca-Cola Foundation into the Greater Cape Town Water Fund has resulted in 20% of the invasive trees cleared so far, attracting many other partners and funders to train enough rope access technicians (half of who are

female) so that the project can hit its goals. Thus far, 12,000 hectares have been cleared and an estimated five billion litres of water has been reclaimed for the greater Cape Town region.

IMPROVING ACCESS TO CLEAN WATER

Nairobi is the capital of Kenya as well as the industrial and business hub of the country. Ninety-five percent of Nairobi’s freshwater supply comes from the Tana River but the river is slowly deteriorating and today, 60% of Nairobi’s residents do not have access to reliable water supply. With the support of The Coca-Cola Foundation’s Replenish Africa Initiative (RAIN), Water & Sanitation for the Urban Poor (WSUP) has been working with Kenyan city authorities to enable more than 600,000 urban residents across five cities to access clean water, safe sanitation and improved hygiene. Managed by the Global Environment & Technology Foundation, RAIN is a flagship African community program for The Coca-Cola Company that contributes to the achievement of the United Nations’ Sustainable Development Goal on clean water and sanitation access.

In Kaptagat, a low-income settlement in Nairobi, a new sewer line has transformed the lives of its residents. The village sits on the top of a hill and waste from the toilets used to flow down into the Nairobi River. “We are proud. This place, Coca-Cola changed it... and the people who live here are seeing change,” says Francis Ndungu, Community Chairman. RAIN has not only improved access to clean water and sanitation for Kaptagat residents, it has created income-generating opportunities in communities with high levels of unemployment, transforming shacks into buildings that contain public toilets and bathrooms.

George Mbire is a small business owner running one such facility. “It has been a great help to the community and public around here. Before we got the facilities, it was terrible... but since we got the sewer line it has been fine. There are no complaints and even the community around us are very happy with the systems that they got from Nairobi Water and Coca-Cola and we are grateful for that.”

Ndungu’s daughter, Sarah Wamaitha, adds, “It has been amazing



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Through the implementation of 120 projects to date, RAIN has reached more than 4,000 communities and positively impacted over 6 million people across 41 countries.

to finally have fresh water. Before we used a lot of money to pay for exhausters to pump the dirty water out, but now it's flowing very well, and the rainwater doesn't flood our place anymore as there is proper drainage."

Kaptagat residents faced a dire sanitation situation which had to be addressed – no one was connected to the trunk sewer. In Biafra, another low-income settlement 20km south of Kaptagat, illegal water connections used to run along the surface of the roads. Thanks to WSUP and the local municipal water utility service provider, Nairobi City Water and Sewerage Company, these have been uprooted and replaced by legal, underground water pipes.

"The request had come from the community to the informal settlements region at Nairobi City Water and Sewerage Company that they were really keen on improving their sanitation. We went through a design and planning process together with the community and enabled the implementation of the project," explains Eden Mati, WSUP Kenya's Country Program Manager.

Where people in the community once had to travel by foot up to 10km to get clean water, they can now easily access prepaid water dispensers which have also been installed. The water dispensing technology uses a pre-paid token system, where residents can load any amount from five shillings to pay for clean water. Each dispensing station is managed by a young person from the community who controls the master token as part of an income-generation project. They are also responsible for ensuring the upkeep and maintenance of the dispenser and reporting anything that needs fixing to the water utility company.

"I love these pre-paid dispensers because it is handing over power to the user. They can access water 24/7 and it's affordable at half a shilling. People used to have to pay five shillings for 20 litres," says Gertrude Salano, a Program Monitoring and Evaluation Officer at WSUP. To ensure projects like Biafra are sustainable, WSUP anchors each project within mandated institutions such as the local water utility who have the technical know-how and the financial ability. Salano's vision is that what she has created can be replicated by the water companies, ensuring the right to access safe water and sanitation for all.

Only 40% of Nairobi's residents have access to reliable water supply with the Tana River supplying 95% of Nairobi's water and 50% of the country's electricity. To help restore and conserve the Tana River, and with support from The Coca-Cola Foundation and The Nature

Conservancy (TNC), a water management plan known as the Upper Tana Nairobi Water Fund, the first water fund in Africa, was created.

"Those who live in the city can benefit from water downstream and put in financial resources to support those in the watershed," explains Fred Kihara, Africa Water Funds Director at TNC. "When you look at a company like Coca-Cola and our work, we have lots of shared values. We both care for sustainable water supply."

The business case for the Water Fund demonstrates that a \$10 million investment in source water protection activities for the Upper Tana region has the potential to return up to \$21.5 million of improved economic productivity over 30 years. RAIN's strategic investment reflects the core sustainability values of Coca-Cola and its commitment to protect and conserve water while empowering communities through water access. Since RAIN launched in 2010, the program has supported over 120 projects across 41 different countries, reaching 4,000 communities. In addition to impacting six million people, RAIN has empowered over 480,000 women and girls by providing increased economic opportunities.

Without clean water, breaking out of the cycle of poverty is almost impossible. With water access, you can foster economic development, empower communities and give them dignity for generations to come. F

– By Tiana Cline



Helping Women, Helping The Continent

From equipping female entrepreneurs with business skills to restoring hope and dignity to those exploited, Coca-Cola's women economic empowerment agenda is changing lives and creating future leaders in Kenya.

FROM FRUIT FARMERS TO ARTISANS TO RECYCLERS and retailers, The Coca-Cola Company committed to economically empower five million female entrepreneurs by 2020 through its 5by20® programme. 5by20 is The Coca-Cola Company's global initiative to enable the economic empowerment of 5million women entrepreneurs across our value chain by 2020.

Working closely with the Women Enterprise Fund (WEF) in Kenya, an autonomous government institution that empowers women socially and economically through subsidised credit and business skills training for enterprise development, The Coca-Cola Company entered an invaluable partnership in 2014 to enhance their core operations and ultimately scale 5by20.

"When you look at society, women are the backbone of the family. Without the women, there is no society. A woman goes through a lot and by empowering her, giving her the necessary tools to be able to stand, and help her family to stand, is very important," says Judith Midamba, WEF's Marketing Research and Communications Officer.

With 5by20, The Coca-Cola Company and The Coca-Cola Foundation equips women entrepreneurs to overcome social and economic barriers by providing business skills training, access to financial services and assets, connections with peers and mentors and other assets to help women entrepreneurs improve their livelihoods, families and communities. The women participating in 5by20 work in roles across the company's value chain and by the time the 5by20 programme came to an end in 2020, over 6.2 million had been empowered worldwide, with just over 2 million of those women residing on the African continent. The Coca-Cola Company not only managed to meet, but exceed its ambitious 5by20 goal, proving once again that investment in women spurs economic growth and promotes sustainable development.

Cynthia Mary Gathomi is a strawberry farmer from Limuru, a town in central Kenya, and part of Kwamanga Women Group. "Each and every member has a small farm. We sell the fruits, we take them to Nairobi and the supermarkets," she says. "The WEF is very supportive to our families. We have children and they're in school. You don't have to buy seedlings; you pay for school fees."

Embakasi is one of the fastest-developing divisions in Kenya. It is filled with factories and female entrepreneurs, like Winnie Odiyo, a



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The Women Enterprise Fund is very supportive to our families. We have children and they're in school. You don't have to buy seedlings; you pay for school fees.

-Cynthia Mary Gathomi, Kenyan Strawberry Farmer

store owner, who started her own business with the help of WEF because even with a degree, it can be tough finding work in Kenya.

"We started hustling. You cannot sit down and wait. WEF gave us a loan that we divided amongst us. We went for three days of training, sponsored by Coca-Cola and WEF, and we were taught how you can still be a hustler and open a shop. We were taught book-keeping, how to run a business, so many things," says Odiyo.

"We're self-employed," adds Bella Atieno, another store owner from Embakasi. "We don't depend on others. The amount you get paid when you are employed is not as much as you get when you have your own business."



We started hustling. You cannot sit down and wait. Women Enterprise Fund gave us a loan that we divided amongst us. We went for three days of training, sponsored by Coca-Cola and WEF, and we were taught how you can still be a hustler and open a shop. We were taught book-keeping, how to run a business, so many things.

- Winnie Odiyo, Kenyan Store Owner



FROM SEX WORKERS TO COMMUNITY LEADERS

According to a survey by ICROSS, an NGO working in East Africa, there are around 20,000 sex workers in Kenya, most of whom are women. Kenya does not criminalize sex work, but there are a number of other laws which can be used to oppress sex workers and women are regulated to the side lines. In Naivasha, Water & Sanitation for the Urban Poor (WSUP) worked with Life Bloom Services International, and supported by The Coca-Cola Foundation's RAIN initiative, to develop a sanitary pads sale and distribution business. The name of the sanitary pad is Nawiri, the Kiswahili word for bloom and many of the sales agents are former sex workers, giving these women an opportunity to improve their lives.

"Life Bloom is a women-led organization that seeks to transform sex workers and give alternative sources of income for women so that they can run their lives with their families," says Emily Kirigha, WSUP's Project Manager in Kenya.

Naivasha decided to focus on menstrual hygiene management, training teachers and school-going children, and forming hygiene clubs where children are sensitized on menstrual hygiene management through the public health office. "The women engaged by Life Bloom could go and replicate the same information at a household level for men and girls at home," adds Kirigha.

Mostly importantly, Nawiri sanitation pads are affordable for low-income women and girls. According to Damaris Mwihaki, a Life Bloom mentor, the girls she speaks to come from households that cannot even afford one pad. "I've been working with the community since I was a

teenager. I know the needs of the girls. This has helped so much – it is like taking a girl to a holiday. Most of these girls are drop-outs because we live in a slum," says Mwihaki.

Something as simple as a sanitary pad has given back dignity to women facing different types of exploitation, be it sex work or even human trafficking. Through the Life Bloom social initiative, reformed sex workers are now mentoring young girls to help them choose a different path in life, they're also helping young girls return to school to finish their education.

"Counselling is the first approach that we utilize. We bring them close. We offer them a safe space. We mentor them in ways that they can get economic stability away from sex work," explains Mariba Mwenda, a Monitoring and Evaluation Officer at Life Bloom. "Nobody ever dreamed of becoming a sex worker. Nobody ever dreamed of being in the streets out in the night. We all dreamed of big careers but due to the poverty levels and lack of good parenting, there is a cycle where you find that most of the girls that are being exploited... are children to the sex workers."

In partnering with WSUP and RAIN, Life Bloom has supported thousands of women who have experienced abuse and exploitation, giving them education, employment opportunities and the hope of a more dignified future.

SUPPORTING COMMUNITY RESILIENCE

Coca-Cola may be a global company, but they're still a local business at heart, deeply rooted in the communities that they serve, proudly touching millions of lives every day. By investing in women's economic empowerment over the past decade, The Coca-Cola Company have created shared value in hopes of a better shared future - enabling improved livelihoods for women, their families and their communities, while inclusively expanding Coca-Cola as a business throughout Africa. **F**

– By Tiana Cline

Microsoft's mixed-reality headset enables surgeons to view 3D holographic images of a patient



SMART MEDICINE

Advancements in medical technology for beyond Covid-19.

BY NAFISA AKABOR

MEDICAL TECHNOLOGY CONSTANTLY pushes boundaries with its innovations. Over the years, we've seen disruptions like 3D bio-printing; the Internet of Medical Things; virtual reality for mental health; robotic surgery and nanomedicine – precision healthcare at a molecular level.

Early in the pandemic, telemedicine took center stage as patients and healthcare workers turned to technology out of necessity, but it remains to be seen if its popularity will last.

It was also during the pandemic that Microsoft experimented with its mixed reality (MR) headset, the HoloLens 2. The headset enables surgeons to view 3D

holographic images of a patient, obtained from X-rays or CT scans, and supports hand gestures and voice commands.

Recently, at its annual Ignite conference in March, the company announced Microsoft Mesh, a mixed-reality platform built on Azure that can be accessed on the HoloLens as well as other VR headsets, smartphones, PCs, Macs and tablets, making it more mainstream.

The HoloLens 2 project was led by Professor Thomas Gregory who used the original HoloLens for its first MR surgery back in 2017. He brought together 15 surgeons across 13 countries to perform a series of MR orthopedic operations.

Shoulder surgeries were chosen because it requires 3D planning



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At Robots Can Think, we strive to use AI for good, to place AI in a meaningful way in the hands of all, from Sandton to Kagiso, to deep rural Eastern Cape.

— Natalie Raphil

and modeling of the shoulder.

Professor Stephen Roche, orthopedic surgeon at Groote Schuur Hospital and the University of Cape Town in South Africa participated in three surgeries; one in South Africa and assistance with two others in France and Germany.

“Technology is playing a bigger role in surgery, research, and healthcare and certainly during Covid-19, where trainees have not been able to operate, this has highlighted the use and need for technology in training and teaching,” says Roche.

The HoloLens 2 lets us manipulate images in real-time so intraoperative findings can be checked with surgical planning, he adds.

“It allows us to access the internet during surgery and more importantly, we can bring a surgeon into the theater virtually for advice, which would be a massive benefit for a continent like Africa, with many of our colleagues working in poorly-resourced areas.”

Another company targeting disadvantaged communities in South Africa is a start-up called Robots Can Think, which adapted during Covid-19 by 3D-printing personal protective equipment (PPE) for healthcare workers.

Natalie Raphil, founder of Robots Can Think, says that during level 5 of the lockdown in South Africa, when imports and exports were at a standstill and PPE was in demand, she read about healthcare workers using cloth to cover their face and nose due to PPE delays.

“I have access to a 3D-printer and decided to print face shields and masks with the 3D-printing material I had available.

I then distributed them to medical staff in public hospitals, those in Alexandra in Johannesburg and so on,” says Raphil.

Raphil has a PhD in Artificial Intelligence (AI) from Stanford University and started Robots Can Think three years ago with a current focus on the medical and healthcare sectors.

After questioning the inclusivity of AI for the visually and hearing impaired, she realized things needed to change.

The start-up came up with an AI module that is fitted on to existing walking sticks, and once activated, assists the visually-impaired to navigate outdoors.

“The device captures real-time images and the AI then recognizes objects such as traffic lights, traffic light colors, how many vehicles/pedestrians (essentially objects) are in front of the visually-impaired, all the while navigating them to their final destination.”

The device then either communicates back to the visually-impaired via speech through a Bluetooth device or via sensory pulses emitted from the device to the hand holding the stick.

The AI walking stick is still in a testing phase, and runs on proprietary software that includes image recognition, image/text to speech, and text/speech to sensory conversion software, hosted on-premise.

Raphil credits Robots Can Think’s partner, All Round Tech, for its engineering genius in developing the AI module for walking sticks.

Once approved, it will be made available to purchase; supplied to medical organizations; and will be donated to the needy.

Over the next two years, Robots Can Think will focus on exploring medical tech to enhance the continent’s adoption of AI, invent products that are easily accessible to all and continue to use AI for good, says Raphil.

“At Robots Can Think, we strive to use AI for good, to place AI in a meaningful way in the hands of all, from Sandton to Kagiso, to deep rural Eastern Cape in South Africa.” **F**

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It allows us to access the internet during surgery and more importantly, we can bring a surgeon into the theater virtually for advice, which would be a massive benefit for a continent like Africa, with many of our colleagues working in poorly-resourced areas.

The Three Letters Driving Entertainment

An insatiable hunger for programming and digital technology has led to an explosion of Over-The-Top (OTT) channels. An African perspective.

BY PAULA SLIER



BRoadcasting in Africa has come a long way in the past 20 years. Before smartphones, wireless internet, small cameras and non-linear editing became mainstream, the industry relied on a somewhat messy fusion of then ground-breaking technology like satellite transmission and old-fashioned communication.

I remember working in television in Nairobi in 1998. The video editor and I were seated in front of the editing suite. At the far end of the corridor waited the cameraman; after him, the passageway turned sharply to the right and 12 meters further on stood the producer. Another sharp right turn, another corridor and in the distance was the satellite operator.

“Now!” shouted the video editor from some 40 meters away as he pressed play on the machine.

“Now!” repeated the cameraman from his corner.



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Now you have an entire family watching different things in different rooms at the same time. We are digesting content in a very different way. We have a choice which gives us opportunity to watch when, how and what we want.

– Christina Foley, Managing Director of United Kingdom-based Marvel Media Consultancy

According to Digital TV Research, at the end of last year, collective OTT revenues in Africa reached \$392 million and are set to rise to \$1.7 billion by 2026. The bulk of the market is, and will continue to be, Subscription Video On Demand (SVOD) packages.

“Now!” echoed the producer.

“Now!” confirmed the satellite operator as he uplinked the video.

Fast-forward two decades and the industry has completely changed. The jobs of five people have amalgamated into one. Far from being the passive consumer of media, audiences are now producers and journalists in their own right.

“Gone are the days that the nuclear family would schedule time to watch something around the TV as a family unit,” says Christina Foley, Managing Director of United Kingdom-based Marvel Media Consultancy.

“Now you have an entire family watching different things in different rooms at the same time. We are digesting content in a very different way. We have a choice which gives us opportunity to watch when, how and what we want.”

The result is an insatiable hunger for programming and digital technology. This has led to an explosion in the last few years of Over-The-Top (OTT) channels through which content is delivered via an internet connection rather than a traditional cable or broadcast provider.

According to Digital TV Research, at the end of last year, collective OTT revenues in Africa reached \$392 million and are set to rise to \$1.7 billion by 2026. The bulk of the market is, and will continue to be, Subscription Video On Demand (SVOD) packages that allow users to consume as much content as they desire at a flat rate per month. Revenues from such services like Netflix and Disney+



will grow from a current \$299 million to \$1.5 billion in the next five years.

“Absolutely OTT is the future everywhere, not just Africa,” says Foley.

“News and entertainment will use OTT. A lot of the mobile companies like MTN and Cell C are putting together their own content packages so when they sign up new customers they can offer them this on top for a fee.”

But the switchover from analogue to digital broadcasting has been delayed in many African countries because of low internet penetration rates – the continent has a total internet penetration level of just under 40% compared with penetration in the rest of the world at 63.2% – limited WiFi and the high cost of data.

Martin Brasg, a broadcast consultant who’s worked with clients across the continent for the past three decades, blames this on internal politics.

“Traditional broadcasters hold monopolies over internet services and are not willing to let go. In South Africa, for example, for years they’ve been putting the brakes on cheap internet. Until a few

years ago, Telkom, the country’s biggest provider of communication services, was the only company that could install fiber broadband connection. This was until the second network operator Neotel came on board. Since then a number of fiber-to-the-home operators started being more prolific in South Africa, enabling more consumers to have broadband at home.”

The potential for Africa is huge. According to Internet World Stats in December 2019, more Africans (526 million) accessed the internet than North Americans. But whereas Kenya, Tanzania and Nigeria are ahead of the curve and have taken advantage of good quality internet and a deregulated internet industry, other African countries are lagging behind. Several are listed among those with the lowest internet speed and yet the most expensive communication and internet costs in the world.

“Things in South Africa started to change around three to five years ago,” reflects Brasg.

“Consumers have also been moving away to free-to-air operators like OVHD (open view



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We believe that the growth of digital streaming services in Africa means that the continent is primed for the democratization of content.

– Dr Amadeo Rahmann

HD) that offer a library of TV shows, films and original programming.”

The lack, and theft, of infrastructure in Africa has also set up OTT to expand enormously over mobile networks, points out Joanne Raphael-Katz, Managing Director of South African-based Exceptional Rights. Katz has been delivering OTT and VOD content to mobile and TV customers for the past two decades.

“Consider that in South Africa there are approximately 14 million TV households but 53 million smartphones. This makes OTT via mobile a force to be reckoned with,” she says.

“Mobile is so accessible and payment is by time, making it ideal for the underbanked. Phones are upgrading and always improving – a smart phone with a rich media screen doesn’t have to be the latest iPhone or Samsung. There are plenty of devices to suit all brackets of income and allow for OTT via mobile.”

Africa is on record as having the fastest growing mobile telecommunication market but when it comes to content via mobile there’s still a long way to go.

User-generated content – content created by people rather than brands – like TikTok have become popular overnight. “Apps and concepts like this will always change and shape the world and how we use our mobile. The

spectrum is being opened and auctioned and will change the amount of content we consume. Content providers can also now supply their channels to DStv via IPTV (internet television) to their platform, doing away with expensive satellite expenses,” says Katz.

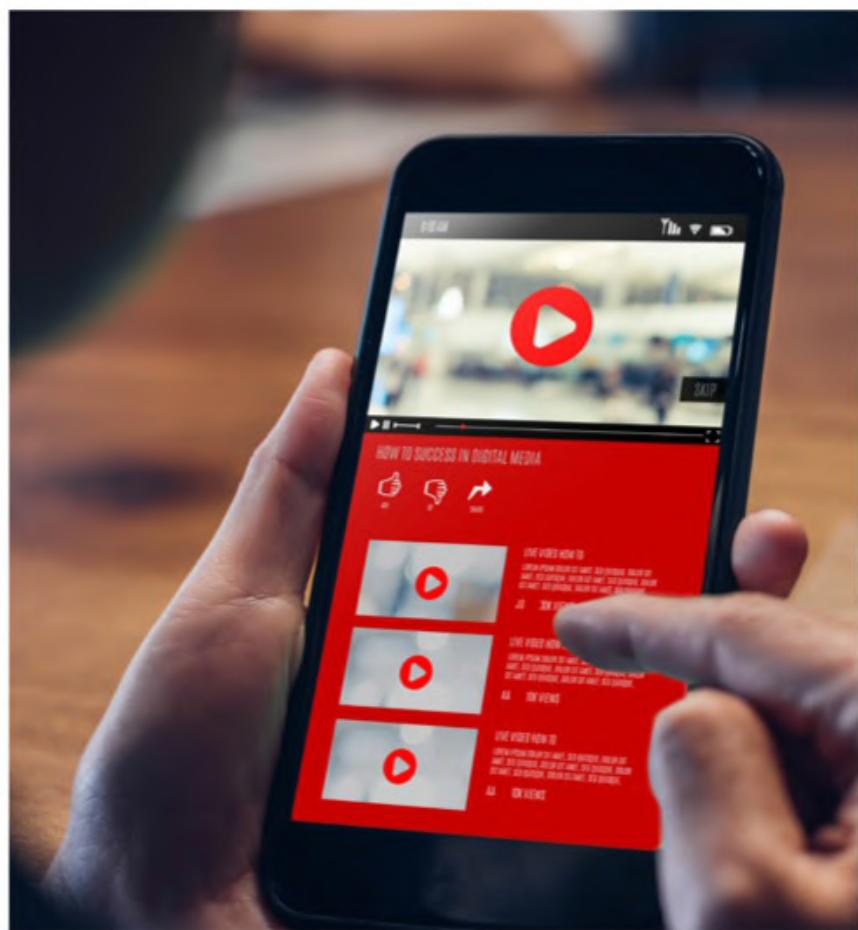
But inevitably as more players enter the OTT market, competition is growing.

Dubai-based mobile technology company, Mondia, is one of many penetrating the market. In the last three months, it launched its time-based entertainment platform, Monsooq, in South Africa and Nigeria. Utilizing time as currency, users can buy entertainment time just as they would mobile airtime and use it to consume any content they choose. At the moment, the platform offers over 20,000 hours of entertainment.

“We believe that the growth of digital streaming services in Africa means that the continent is primed for the democratization of content,” says CEO Dr Amadeo Rahmann.

“Covid-19 has had such a dramatic impact on economies globally, deeply affecting consumers’ disposable income. We believe this model will have huge appeal in emerging markets.”

With a population set to double to 2.5 billion over the next 30 years, Africa also offers a vast and growing youth demographic for broadcasters and content producers. As the world of entertainment continuously evolves, consumers too will benefit greatly, accessing information as rapidly as they want – on demand and on the go. **F**



GAME ON!

In Africa, a new creative renaissance is seeing tech geeks give up their nine-to-five jobs to take to full-time video game development. It's not a level-playing field yet but they are engaging a growing hyper-connected audience.

BY KAREN MWENDEREA



THE YOUNGEST continent in the world has a new obsession – mobile gaming. What's newer is local content created by Africans for Africa.

Take 39-year-old Khumo Moerane, the developer of *Kea's World* and founder of the Africa Space Programme Video Games Studio in Johannesburg, South Africa.

He is using a modern medium to tell old tales, celebrating and preserving African folklore among children and adults.

Today, he solely designs and develops African video games. And has reached another level altogether.

The scene was set in the late 1980s, in Ga-Rankuwa, a large settlement in the north-west of Pretoria, the capital of South Africa, when his parents bought him his first console, a third-generation 8-bit home video game called *Sega Master System*. He was instantly hooked.

"But back then, you were like 'man, there are no South Africans or Africans that are making games'. So, in this sense, it was almost like a far-fetched dream; something that would never happen," he tells FORBES AFRICA.

After studying graphic design, Moerane moved to Cape Town in 2012 where the gaming life found him again.

With friends, he hosted monthly FIFA tournaments for gamers, playing for eight to 12 hours at a stretch.

In 2017, Moerane quit his job as a graphic designer at news broadcaster, eNCA, and went on pursue a Master of Science in Video Game Enterprise, Production and Design at Birmingham City University in the United Kingdom under a Chevening Scholarship.

His very first creation, *Kea's World*, is a free-to-play gaming app downloaded



“

But back then, you were like ‘man, there are no South Africans or Africans that are making games’.

– Khumo Moerane

by users across the world. In May 2020, he was featured by Apple in its Africa Month Promotion and again on Heritage Day on September 24.

Moerane's aim is to continue to inspire and promote native languages and African folklore.

"So it's like now how do I use games to inspire other people, inspire kids, but then we're using characters that look like them. Because I think all this time we've been playing games with characters, but we can't relate to them," he says.

ROOM FOR DEVELOPMENT

Like other sectors, the global gaming industry too lacks representation when it comes to women, Africans and people of color. But beyond that, it is also difficult to

sustain a career in gaming on the African continent due to lack of funding and investment.

Sithe Ncube, the founder and director of Prosearium, an initiative to get 1,000 African women to create and self-publish their own games, says: “Sometimes you can see the common thread among communities across the continent, which is usually related to the lack of accessibility of resources when compared to the Western games industry... It is difficult to find local game publishers and financing options almost throughout the continent.”

Her journey with gaming began in 2013 in Lusaka, Zambia, post an inspiring meeting with a local game developer. She sought out more of them, which led her to host small events teaching the tools of game development to beginners.

She slowly began to realize how significant the problem was for Africans keen on entering the field.

“Outside of South Africa, there are not many places one can study game development related courses on the continent,” she says.

So in 2014, Ncube moved to South Africa to study computer science and entrench herself in the local game development scene.

“In South Africa, there is an art-focused and often experimental approach to game development that often mirrors what you see in other places outside Africa,” she says.

Michael Preece, an advanced gaming player based in Johannesburg, knows this only too well. He has spent thousands of hours playing hundreds of different titles across multiple platforms for over 12 years.

Yet, of all the games he has played, only a small percentage of them are those developed in Africa by Africans.



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It is difficult to find local game publishers and financing options almost throughout the continent.

— Sithe Ncube, founder and director, Prosearium

“The sad reality is that most African-based gaming studios are rather small and don’t develop especially well-known IPs, [they usually develop] Indie and mobile games, which, to be frank, aren’t even remotely the biggest markets,” he tells FORBES AFRICA.

The gaming market is competitive with established commercial game developers, yet, the cost to download content in Africa and the digital divide are crippling issues, making this field prohibitive for the talented few.

But not all hope is lost.

African creators and game developers like Moerena are rising to take on the challenge to ensure there is more African representation.

Ncube says that in West Africa, there is a proliferation of locally-created mobile games and therefore, a new talent pool of people developing related skills.



In Cameroon, there are studios creating distinct intellectual property that tell local stories.

In Zambia, there are young hobbyist individual developers creating and sharing games to showcase their skill.

According to a report by the *BBC* in 2019, the video games market in Kenya was worth \$50 million in 2016 and is expected to double this year.

“As industries become more visible, we’re bound to see more variety crop up around the continent,” says Ncube, full of hope.

“

I also suspect there would be fierce competition among telcos who have been trying to get into the gaming business to try to fill the gap in distribution and sales.

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University graduates are now actively pursuing game development as a career option.

– Dawit Abraham, founder and CEO, Qene Games

ETHIOPIA’S ENDLESS CREATIVE INSPIRATION

In Ethiopia’s capital, Addis Ababa, a young gaming enthusiast is bringing more visibility to the industry.

Dawit Abraham is the founder and CEO of Qene Games. He is also a game developer and android application engineer.

“The industry in Ethiopia is still in its infancy with only a few active studios present. Ethiopia doesn’t have Google and Apple merchant accounts that would have allowed Ethiopian game developers to sell their games across the world. The industry is also yet to be recognized and supported by the government,” he tells FORBES AFRICA.

However, despite these challenges, the industry is alive and kicking.

“Gaming communities actively get together and build

The market of mobile gaming is predicted to be worth \$56.6 billion by 2024 taking up 59% of the global games industry by 2021.

games on hackathons and game jams. University graduates are now actively pursuing game development as a career option,” he says.

“Ethiopia, as a country with more than 3,000 years of history and culture, has a large pool for creative inspiration. From the artistic styles that have been around for millennia, unique music styles, and many fascinating legends and folklore, our game developers have an endless source to feed their creativity and imagination.”

Hubs of creativity and inspiration thus make countries like Ethiopia great places to begin when seeking ideas for original and unique games especially against the backdrop of the continent’s burgeoning creative economy.

Abraham believes that as more publishers become interested in the African market, the more game developers and games we will see.

“I expect that we would see a rise in the number of mobile game developers and also the quality of games coming out of Africa. I also suspect there would be fierce competition among telcos (telecommunication operators) who have been trying to get into the gaming business to try to fill the gap in distribution and sales,” he says.

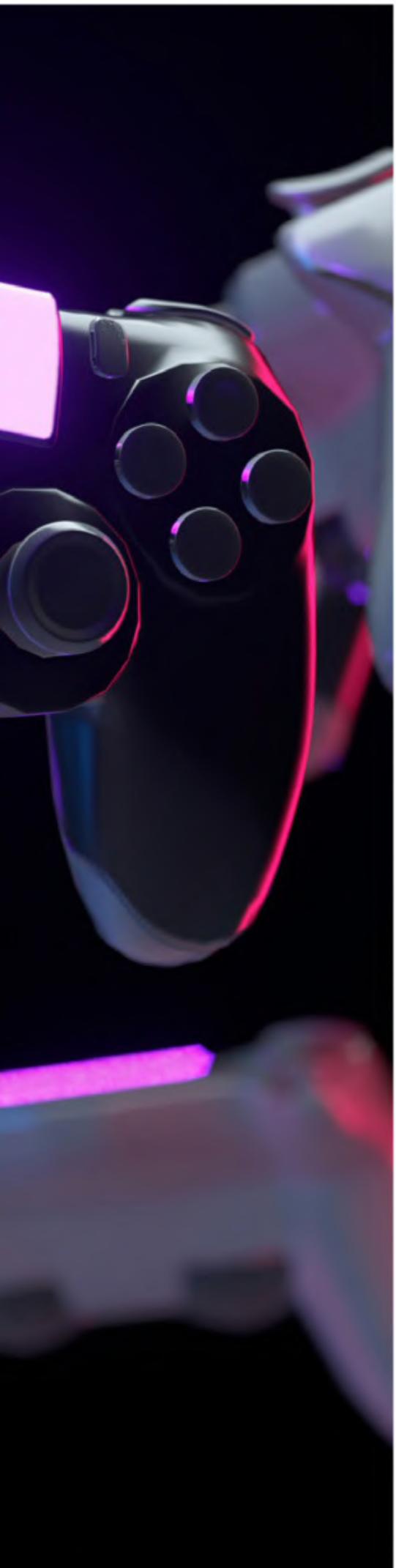
Augmentative Reality (AR) and Virtual Reality (VR) gaming experiences are also great opportunities for the African tourism industry to explore.

Companies such as Guzo Tech in Ethiopia have received grants for their work in AR tourism showcasing the country’s historic sites.

COVID AS A GAME-CHANGER

Meanwhile, another game developer is also representing his country in the global gaming





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We have very social hyper-engaged populations. Social gaming is a perfect fit.

— Cordel Robbin-Coker

arena.

Cordel Robbin-Coker is a Sierra Leonean who grew up in the United States.

About three years ago, he launched Carry 1st, which is a leading mobile games publisher serving first generation African smartphone users.

“I never really thought it was conceivable to have a successful career in gaming so at some point I put my console away and got a job!” he tells FORBES AFRICA.

He spent the first decade of his career in corporate finance and private equity.

Thankfully, Robbin-Coker found his way back into the gaming industry and is making real impact through what he knows best.

As featured in *Forbes*, his company raised \$4 million to catalyze gaming in Africa.

Tapping into the smartphone generation was a smart move for Robbin-Coker as the African continent has the highest number of millennials and Generation Z compared to the rest of the world.

“As more of them get smartphones, there is

an extraordinary demand for digital services, with entertainment and connection being at the top of the list. We have very social hyper-engaged populations. Social gaming is a perfect fit,” he says.

Over the last year, Carry 1st has been focused on completing the transition from game studio to a regional publisher with third-party game studios.

Their first publishing partnership was with Abraham’s Qene Games.

With many big plans to expand, Robbin-Coker says that the pandemic has provided more opportunity to thrive than he ever thought possible.

“For our business, we transitioned from three offices to zero. Going fully remote has forced us to strengthen our processes and our dissemination of the company culture and values. We’ve been able to recruit top industry talent in Europe to complement our strong core on the continent. The pandemic has honed our focus on what matters most as a company and in our personal lives,” he says.

According to *ironSource*, a platform that builds technologies that help game developers take their game to the next level, there are 2.51 billion gamers worldwide and it is predicted that by 2022, 45.9% of the population will be mobile gamers.

The market of mobile gaming is predicted to be worth \$56.6 billion by 2024 taking up 59% of the global games industry by 2021.

According to the *Africa Gaming Market – Growth, Trends, and Forecasts (2020-2025)*, mobile gaming is gaining popularity in remote parts of Africa.

“For example, more than 290 million people in North Africa use mobile phones. The mobile market in the region generates USD 90 billion annually,” the report states.

The scene is set in Africa, and the game has begun, with some clear winners emerging. 

THE LUXE FACTOR

Personal shoppers attest to seeing an interesting shift in the spending habits of the ultra-wealthy. The Covid-19 lockdowns have led to pent-up consumer demand and an unexpected boom in their business.

BY PEACE HYDE



WITH RETAIL MOST affected by the Covid-19 pandemic, both companies and consumers have had to revisit their shopping philosophies. And this also applied to Africa's vast contingent of luxury personal shoppers and high net-worth individuals, who would otherwise travel abroad for their Louis Vuittons and Valentinos. The retail therapy continues online for those with deep pockets and greater

choices in a world of evolving e-commerce.

For the retail entrepreneurs and personal shoppers, this has meant consistently reinventing the wheel – but this time, they seem to be laughing all the way to the bank.

Take 31-year-old United-Kingdom-born Nigerian Lisa Omeleh, the founder of Classles, a company that has grown from being a personal shopping service, specifically offering discounted luxury goods for its members, to a social media-based personal shopping brand, with over 300 annual clients.

A typical day for Omeleh pre-Covid would involve attending luxury fashion events such as London Fashion



Week, hobnobbing with the rich and famous, and meeting with the head honchos of high-end brands on behalf of her clients.

These days, she spends most of her time tapping into her enormous network of luxury resellers and shopping assistants from some of the world's most premium brands such as Cartier, Tiffany and Hermès, to source the best products for her affluent customers.

"The most expensive items [I source] will typically be jewelry and Hermès Birkin bags or Kelly bags. If I am sourcing Hermès bags, I usually [charge] a 10% to 20% commission on top of the bags. The bags range from \$10,000

to \$11,000 (resale price) and then if you are talking different types of skins such as crocodile or alligator, it can go upwards of \$30,000. Jewelry can go from \$14,000," reels off Omeleh.

Her clients, she says, are the daughters of presidents, wives of governors as well as high-net-worth individuals. Omeleh has seen her business grow, but Covid-19 ushered in a new era, one in which her customers rely on her expertise to keep up-to-date with fashion trends on the other side of the Atlantic.

"A lot of people see fashion as frivolous but it is a necessity for a lot of people. I have made much more money



I have made much more money and doubled my income in the pandemic than any other time because I assume people are bored and are shopping or are looking for something to do.

– Lisa Omeleh

and doubled my income in the pandemic than any other time because I assume people are bored and shopping or looking for something to do. Or they are hoping that by purchasing expensive items, they have something to look forward to when the lockdown is over. Also, a lot of my relationships with sales assistants on the shop [floor] is bearing fruit and they are sending me stuff so I can push out to my clients because they still need to make their sales even though the shops are closed,” says Omeleh, who has seen an average spending of between \$15,000 to \$20,000 per client since the pandemic hit last year.

It has been a good run for Omeleh, who graduated from the University of Greenwich in the UK with a journalism and public relations degree, yet, stumbled on a career in high fashion.

“I felt I was always good at building strong relationships with clients and I made a lot of contacts with people abroad and on the ground here in the UK as well, so I transferred the skills to my business. It got to a point where I was making more money than my nine-to-five and I haven’t looked back since,” says the astute self-made entrepreneur.

With Covid-19, Cassandra Okoroafor, of Bespoke Luxury Shopper Limited, also noticed a similar spike in demand for her personal shopping services.

“When the pandemic started in March, I only made \$11,000 and then, by May 2020, it was crazy and I had an influx of new clients,” she says.

Her journey into the glamorous world of luxury personal shopping began in 2016 when she was doing her master’s program in London. At the time, she was looking for a way to earn extra cash and stumbled on the idea of personal shopping. After creating a business plan, Okoroafor decided her niche would be primarily focused on helping ultra-rich clients who do not have the time to shop on account of their busy schedules.

Similar to Omeleh, Okoroafor’s business utilizes social media to attract clients by nattily promoting products and selling an aspirational lifestyle.

“The business moved me away from the traditional view of depending on men to survive and taught me that I can work and buy everything by myself. The biggest challenge was getting clients to trust me. You are asking people to spend over \$9,000 for [an item] and coming from Nigeria, with the stigma of scams, it affects people’s willingness to trust you. Even now, I leave my name as ‘Cassy’ because if I use my surname, some clients may start thinking I am from Nigeria and all the negative stereotypes that come with it,” says Okoroafor.

To overcome this stigma, she and Omeleh rely heavily on referrals from other clients. At the start of the pandemic, Okoroafor noticed an interesting shift in spending habits among her 200-strong client base spread across Nigeria, Ghana, the UAE and South Africa.

“I have ultra-wealthy clients and middle-class clients. I noticed my wealthy clients cut back on spending on luxury items during the pandemic and they were more into wellbeing products and more comfort clothes to wear at home. But then, my middle-class clients started spending a lot of money on luxury bags and shoes and I think it had a lot to do with staying at home and doing nothing. I was calling it ‘boredom shopping’; they spent more money at home trying to pass the time.”

By December 2020, her wealthy clients returned, mainly

because they had to buy gifts for family and corporate clients during the Christmas period.

“So, it was good for me because the middle-class clients compensated for the sales when my wealthy clients cut back. Sales went up by 31% in 2020 compared to 2019,” attests Okoroafor.

Making a healthy commission requires an uncanny knack to handle a number of cost variables as well as uncertainties in the supply chain. Firstly, you have the issue of sourcing and logistics to contend with.

“They are the hardest part because when you are doing high-priced items and so many of them at a time, you have sleepless nights because you are trying to sort out shipping. Shipping to Nigeria is not as straight-forward and can be very expensive. For example, if you lose an item, there isn’t much insurance on that product. I only had a shipper lose one item before and that was a lot of headache,” recalls Omeleh.

Then, you have the issue of fluctuating currencies to deal with.

“Another problem is exchange rates and trying to convert the naira to pounds. So, you need to figure out how to incorporate



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The middle-class clients compensated for the sales when my wealthy clients cut back. Sales went up by 31% in 2020 compared to 2019.

– Cassandra Okoroafor

that into the business in order to make a profit. For the first year, I didn’t make that much money,” says Okoroafor. Her clients spend more on jewelry than any other item.

The growth in her business has led to Okoroafor diversifying her portfolio to accommodate more demands.

“Firstly, I have VIP Sourcing, where I have to source rare items like Hermès bags. For example, in 2020, I sourced a three-toned croc Hermès bag and it was shocking to source that during a pandemic. I even sourced a bike from BMW once and it is the highest service I offer clients. Then, I offer services like buying home décor and clothing. I charge a personal shopping commission on items, which is 10%. Then I create pieces for clients and charge a fee for styling them as well,” she says.

Clearly lucrative, the personal shopping industry attracts professionals from all backgrounds.

Take the case of lawyer-turned-CEO of Hays Personal Shopper Limited, Abisola Ola-Saheed.

She started out in this space in 2015 initially for its flexible working hours as she started a family. Today, it is turning over more than her legal job and after making a career switch as a full-time personal shopper, Ola-Saheed is also reaping in the unexpected rewards of the lockdown.

“2019 was my biggest year followed by 2020. The pandemic has not affected me in anyway because people are still shopping the same way. My clients are saying if they die, no one will enjoy their money so, they would rather shop and enjoy themselves now than save. In 2020 alone, I had over 200 clients,” says Ola-Saheed.

Her secret strategy is giving her clients as much attention as they require in order to close a sale.

“We shop for high-net-worth clients and we source hard-to-get pieces. You are being trusted with a lot of money so with the amount of money coming into your hands, you need to give them 24/7 attention.”

By all accounts, it seems the trend, especially with wealthy African consumers, is geared towards stress-free, bespoke shopping.

Brands are also increasingly leaning on personal shoppers and their loyal client base to help them retail hard-to-sell products during the lockdown and as a result, for now, it appears the outlook remains favorable for enterprising Africans in the diaspora willing to go the extra mile – and the last mile – to meet the insatiable shopping demands of their clients back home. **F**

'More Opportunity For Africa To Sit At The Main Table'

FIFA president Gianni Infantino has long acknowledged the potential of the African continent, both on and off the pitch, but admits much more needs to be done to move the game forward, starting with good governance, before all else, to create the right environment for success.

BY NICK SAID

IF AFRICA IS TO EMERGE FROM DECADES OF greed and corruption to become a genuine power in world football, then it requires reform and strong leadership, all built around a united front that puts the game first, according to FIFA president Gianni Infantino.

He has long acknowledged the potential of the continent, both on and off the pitch, but admits much more needs to be done to move the game forward, starting with good governance, before all else, to create the right environment for success.

Former Confederation of African Football (CAF) President Ahmad Ahmad was recently banned by FIFA's ethics committee, which said in its statement: "In its decision, following an extensive hearing, the adjudicatory chamber ruled that, based on information gathered by the investigatory chamber, Mr Ahmad had breached his duty of loyalty, offered gifts and other benefits, mismanaged funds and abused his position as the CAF President, pursuant to the FIFA Code of Ethics."

The CAF president automatically takes up a vice-president role within FIFA, and now with the elevation of South African billionaire Patrice Motsepe to the highest seat at CAF, which was orchestrated by Infantino, there is the promise of better governance and commercialization of the organization's competitions beyond the continent.

"Africa has incredible potential, but what we need is to structure and organize the development of football on the entire continent in a way that allows this talent to flourish and obtain results at senior level for men and women," Infantino tells FORBES AFRICA.

"The question of where and when concrete results will be coming on the global stage is not a matter of 'if', but 'when'. But the sooner the organization is done in a coordinated and united way,



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Africa has incredible potential, but what we need is to structure and organize the development of football on the entire continent in a way that allows this talent to flourish and obtain results at senior level for men and women.

– Gianni Infantino

the quicker this will be.”

But Infantino admits this optimism can only become a reality if the leadership on the continent, through CAF, are serving the game and not themselves.

“To compete at the highest level, the organization has to be done in a certain way, reforms need to be implemented, everybody is aware of that, and the unity on the continent needs to be found, backing these projects, which go from good governance, infrastructure development and new competitions, to academies and training for young players.

“So all of these things are at the heart of the debates we are currently having, and I would wish that the whole continent can unite behind these topics with strong leadership to take Africa

to the top of world football.”

Covid-19 has complicated things for FIFA members the world over, but perhaps especially so in Africa where maintaining health protocols and running competitions at the same time are made more difficult by a lack of infrastructure.

But Infantino says he is unwavering in his view that Africa can fulfil that potential if it has the right people at the very top of the game.

He wants to see Europe’s domination of the sport, both on and off the pitch, rivalled in other parts of the world.

“The next five to 10 years are crucial. We need to make sure that football becomes truly global. We always say that it is, but if you scratch a little bit under the surface, you will see that top-level football is very much concentrated in

just a few clubs and countries, and we need to globalize that much more,” he says.

“I have been sharing my vision for the coming years, saying our objective and aim is to have at least 50 countries that can aspire to be world champions, and not just five or six.

“To have 50 clubs, from all over the world, aspiring to be world champion of clubs and not just a few from one continent.

“We will do that by investing in our youth, boys and girls, with new competitions at regional, continental and global level.”

Under Infantino, FIFA have increased the number of teams competing at both the men’s and women’s World Cups, providing more opportunity for Africa to sit at the main table.

But they must seize this opportunity, he says.

“Africa will have nine or 10 teams (up from five) at the 2026 World Cup. And they will have four instead of three participants at the Women’s World Cup [in 2023].

“So there is a lot of work to be done in preparations for these events, in the period from now to 2025, and that makes this phase crucial for African football.

“You want to go to these events and play a protagonist’s role, you don’t want to just go back home after three games.” 



BY TSHILIDZI MARWALA

The writer is the Vice-Chancellor and Principal of the University of Johannesburg, and author of the book: *Leading in the 21st Century*.

IN HIS BOOK, *Decolonising the Mind*, Ngũgĩ wa Thiong'o writes about the politics of language in African literature. Ngũgĩ observes that languages serve as carriers of cultures and for communication. He also observes that languages such as English and French in Africa are hegemonic and serve as cultural bombs threatening the very existence of many languages. Ngũgĩ also observes that writing in African languages can serve as a bullet-proof method to save languages from extinction. In South Africa, we have seen multiple languages phasing out, and these include Cape Khoikhoi, Korana and N|uu.

With the advent of the fourth industrial revolution (4IR), where artificial intelligence (AI) is digitizing languages and enabling automated machine translation, what does it mean when a language is excluded from translation machines? This is an important debate because future communication will involve diverse language-speakers communicating in their languages, listening

Develop African Languages, Capture The Underlying Culture, And Preserve Digitally

through devices installed in their ears, and hearing machine-translated words in their native tongues. These machines will be so efficient that they will filter out the original words, and the person hearing it will only hear the translated words. If a language is excluded from these devices, then it might be in danger of extinction.

Google Translate (GT) translates some African languages, including Swahili and Yoruba. Languages such as my native tongue Tshivenda are not included. Of the included ones, GT does not perform well in translating them. This is because GT's statistical nature fails to capture the grammar and cultural content of African languages. But this does not mean that sometime in the future, AI will not advance in capturing these attributes.

Our languages are rich and deserve special attention. They are very different from Indo-European languages, a family of languages spoken in Europe and some parts of Asia. For example, in Tshivenda, a Bantu language, *ndi ya hayani* means 'I go home'. If we are to transform this into the past tense, it becomes *ndo ya hayani* meaning ('I went home'). In essence, in Bantu languages, when you transform into the past tense, you change the pronoun (the person) and take him/her into the past tense. In English, however, you transform the verb (action) into the past tense. What is the meaning of all of this? Does it mean that the people who speak Bantu languages are more people-oriented (*ubuntu*), whereas the Europeans are more action-oriented? Does this explain why Europe's economies and all its dominions are more prosperous than those of Africa?

Ngũgĩ thinks that Europe is prosperous because Africa and other colonies made it rich. Another interesting aspect of the difference between Indo-European and African languages is that when one translates singular nouns into plural, one changes the prefix for Bantu languages and the suffix in Indo-European languages.

For example, *muthu* meaning 'a person' becomes *vhatu*, meaning 'persons'. These rules are difficult to code using AI, and as a result, AI-enabled translators cannot capture the underlying culture, possibly with devastating consequences.

The death of African languages is not only because of hegemonic languages such as French and English. It can happen because many African languages are spoken.

For example, with 17 million people, Zambia has 72 languages making the number of people per language spoken to be 236,000.

Julius Nyerere, the first President of Tanzania, simplified this by adopting Swahili as a national language. Is there a need in Africa to adopt one indigenous national language to create economies of scale?

As Ngũgĩ observed, to sustain our languages, we need to write in them. We also need to translate foreign books into our African languages.

As work emerges in all areas of knowledge, we need to have an industry that translates into our indigenous languages. For this translation industry to be sustainable, it is essential to have economies of scale and hence the need to adopt a single African language.

In conclusion, we need to take our languages into the digital space and create online dictionaries. We need to use AI technologies to unify the translation of similar languages and increase economies of scale.

We need to develop algorithms that translate spoken/written words and translate the terms' context, idioms, and cultural content.

We need to invest in our languages. As new words emerge, we need to develop African versions of these words swiftly. We need to distribute our languages to all media, whether radio, television, the internet, including social media, etc.

Languages carry our history, our culture, and our identities. Let us preserve them.

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Against all
odds

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The Disappearing Giant Of Madagascar

A travel tale, in search of the Parson's chameleon, deep in the forest, in pouring rain.

WORDS AND PHOTOGRAPH: RAMDAS IYER

CHAMELEONS ARE BIZARRE-LOOKING REPTILES that have captured the interest of hobbyists since the 1800s. They come with a prehensile tail like monkeys, turret-like eyes with a 360-degree vision that operates independently. Their amazing body patterns include horn-like crests and dinosaur-like projections. Their incredible ability to change color depending on their mood, and the sheer joy of watching them catch insects with their long sticky tongues have created a huge pet market in the West.

Out of the 217 species of this slow-moving reptile species known to us, 96 hail from the island of Madagascar. Here, all the species are endemic and over half of them are categorized as threatened or extremely near extinction. Research has shown that all chameleons found in Africa, Asia, and some parts of southern Europe originally left Madagascar several million years ago by drifting on flotsam across the oceans to evolve independently.

Both the smallest of the species, the micro-leaf chameleon (*Brookesia micra* at 55mm) and the largest and most endangered, Parson's chameleon (*Calumma pasonii* at 60cm) are endemic to the island.

Plate tectonic events show that Madagascar, with India attached to it, broke away from Africa some 165 million years ago. Around 85 million years ago, Madagascar separated from India along with all the resident dinosaurs that lived in it. On this large island, geological forces thrust up the high mountain range that runs up its spine creating four dramatically different climates. As a result, rainforests in the east, deciduous forest in the west, rocky mountains in the middle and semi-desert spiny forests in the south, created an environment for over 20,000 species of flora and fauna to evolve for 85 million years found nowhere else.

Humans arrived here less than 2,000 years ago.

My love for these animals started when I raised two distinct species, locally-bred, several years ago: a project with my teenage son.

That love eventually took me to Madagascar where I photographed over 26 species on my travels there. The crown jewel of the species, the Parson's chameleon, was indeed a trophy to be tracked and photographed in the wild.

The Parson's chameleon is the most sought-after in the illegal trade, often going for over \$6,000 for a healthy specimen sometimes the size of a house cat. It has been reported that over tens of thousands exported to the United States in the 1990s perished without reproducing. Even today, hundreds of thousands of different species are also plundered from the many national parks that were originally established by the French colonial government (1897-1958). The pet trade has been the biggest scourge for the survival of these creatures.

In the Andasibe-Mantadia National Park, a montane rainforest at an altitude of 1,000m, I had my first glimpse of this magnificent creature. On a steep slope in a moss and lichen-covered wet forest, I found one perched at eye level and quietly hissed as I approached her. Deep in the forest, in pouring rain, I had, alas, met my Parson's in her habitat. When I left the park, I had a good feeling that in this well-protected park, future generations can enjoy her progeny.

At the famous Ranomafana National Park, despite a hard search, I could not spot the Parson's. However, my tracker reported that there was a grove near his family compound adjacent to the forest where they have been found often. We immediately rushed to this small village where we found three chameleons within an hour.

This allowed the opportunity for a large bluish-tinged male Parson's to walk on to me whose prehensile tail wrapped itself tightly around my forearm while its turret-like eyes moved in many directions, occasionally looking at me with existential doubt.

Less than 10% of Madagascar's primary forests and 25% of secondary forests survive today. Identified as a biodiversity hotspot, the attention of conservation experts has finally turned towards Madagascar in the past decade. Better late than never. **F**

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