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SEPTEMBER 2019

**INSIDE:**

**WEAVING A FORTUNE IN RWANDA**

**CASHING IN ON AFRICAN CUISINE**

**RAGHU MALHOTRA**
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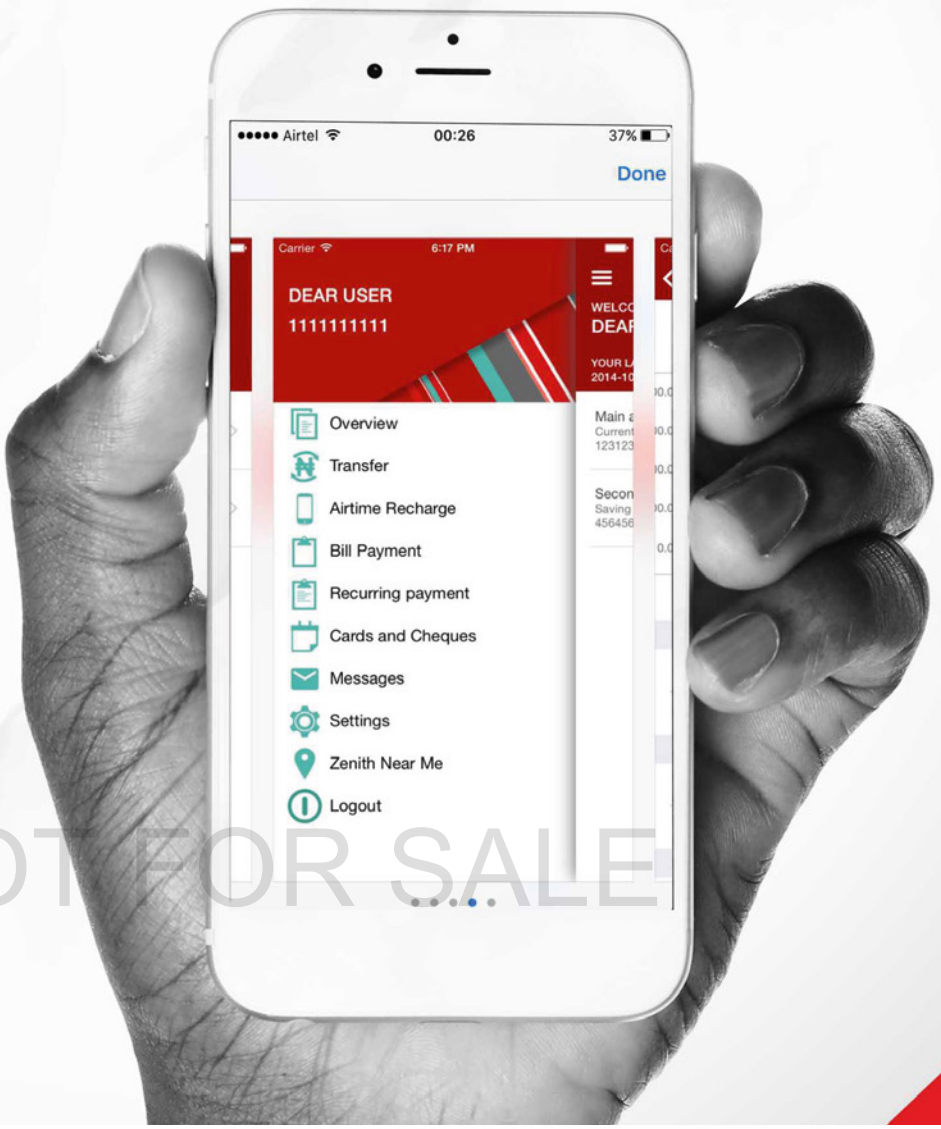
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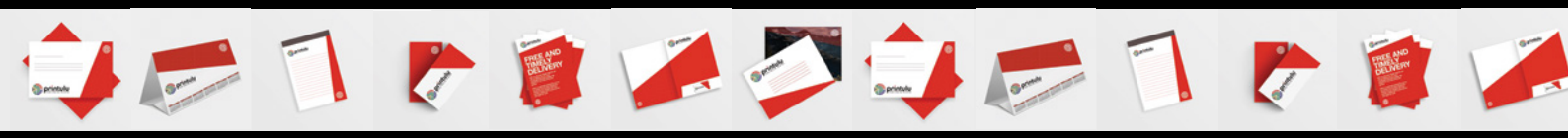
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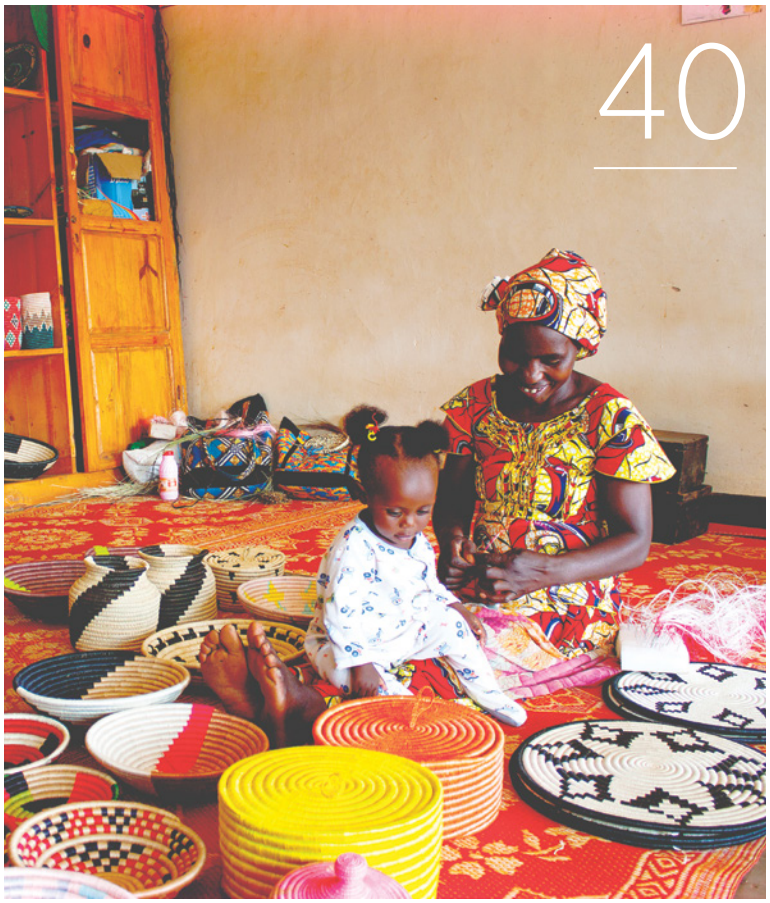
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**FORBES**
ISSN 2223-9073 is published monthly except for two issues combined periodically into one and occasional extra, expanded, or premium issues.

FORBES AFRICA EDITION is published by ABN PUBLISHING (PTY) LIMITED under a license agreement with Forbes Media LLC, 499 Washington Blvd, 10th floor, Jersey City, NJ, 07310.

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Founded in 1917
B. C. Forbes, Editor-in-Chief (1917-54); Malcolm S. Forbes, Editor-in-Chief (1954-90); James W. Michaels, Editor (1961-99); William Baldwin, Editor (1999-2010)

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# SELF-AWARENESS IN THE NEXT FRONTIER

So 2020 is in four months, and it's hurtling towards us. A nice round number, and a year that could have far more outrageous futuristic implications than the entire last decade.

(We did think we would make it to Mars by 2020.)

But how far have we come in the last 10 years? Driverless cars, a cure for ageing, the Chinese economy, isolationism, algorithms, robots in public, legalizing cannabis and Generation Alpha have all dominated both coffee-table and chatroom conversations alike.

The assault of innovations to come makes me want to hark back to a time when life didn't need to be measured in terms of the next big technology to be unleashed on mankind.

I remember meeting the Singapore-based futurist and social entrepreneur Roger Hamilton almost five years ago in Johannesburg when he said: "There will be measureable ways that we will be able to improve our own self-awareness and our own ability to shape our futures far beyond what we have been up to in the past and that's going to be because of our own work on ourselves."

I didn't understand it at the time, but I do get it now that our experience of life and our own self-awareness is going to need to change in the coming years if we are to merge with artificial intelligence.

Will we seek more and more ways to artificially enhance ourselves, be it as half-human and half-cyborg?

Some of the answers could be from nature itself. We have a story in this issue on dung beetles inspiring the robots of the future. It's an interesting take by scientists on bug behavior and some of the tiniest life forms on earth that could lead to leapfrogging technologies. Perhaps then, that is all it takes: drawing lessons from the simplest examples of life.

It is the opportunity to explore such scintillating variety that makes this magazine so interesting to edit. Not only do we laud the captains of industry and titans of social progress, shining an unwavering light on the achievements of passionate young Africans growing our economies, we also look at the other side of the spectrum. At the informal economies that are the next frontier of growth contributing to the greater good.

For example, there is a story on Rwanda's colorful community of basket-weavers in this issue. I had the opportunity to interview American actress Kristin Davis on her recent visit to South Africa, and in the middle of our chat, it was so heartening to hear her too talk animatedly about them; the women in the refugee camps she visited who have turned artisans and entrepreneurs creating sustainable value chains in world markets using the simplest of natural material.

I am hoping we will be able to carry this spirit of art and altruism into 2020 and beyond, where technology will also hopefully free us – and the marginalized – from the shackles of the past.

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RENUKA METHIL,
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Photo by Motlabana Monnakgotla

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PUBLISHER'S NOTE

# ENTREPRENEURSHIP 101

BY RAKESH WAHI, FOUNDER AND PUBLISHER, FORBES AFRICA

I ALWAYS LOOK FORWARD TO THE annual FORBES AFRICA 30 Under 30 event. It's a reality check on so many things I have no clue about and still need to learn. What strikes me the most is the confidence these budding entrepreneurs and young leaders exude. They are fearless on stage and speak their mind with no inhibition. It is very inspiring to hear them and being part of a team that has built a platform for sharing stories is rewarding. For those that choose to learn, these events are genuinely a two-way exchange.



My takeaway from this event is the enormous talent that sits on our continent, and the wealth of knowledge and enthusiasm of the participants. Their dexterous handling of presentations, gadgets and subject matter is fascinating. Most people in our generation were shy of standing up to speak; now, everyone has their hand up to say something meaningful. This year, we had 120 young leaders on the FORBES AFRICA 30 Under 30 list, who achieved excellence in their chosen vocations.

We heard great stories of success unfold on stage, of their trials and tribulations as they embarked on their respective paths to success; in business, sports, technology and art. One of the young men who made it to the list this year came up to me and said he had heard me speak at a small private event years ago; he was inspired and proud to come up and say he made his dreams as an entrepreneur come true. Wow!

It brings me back to a very important question – what does it take to be an entrepreneur?

The first notion that some people have is that doing your own thing gives you the freedom to do as you like. Conceptually, it is correct because time, which is your most precious resource, is now to be managed by you as you deem fit. In fact, being an entrepreneur leads to a lifetime of responsibility because you are the one everyone will turn to. There is no longer a 9-to-5 existence but a relentless 24x7 schedule. The essential qualities needed in my opinion are: competence, passion, hard work, having skin in the game, commitment and building a complementary team. There is however, a unique quality in an entrepreneur – perseverance. In this journey, one fails again and again; it's the ability to rise up after every fall that defines a true entrepreneur.

During my lifetime of emerging market investments, I also cultivated another quality that came with experience; knowing when to call it quits. People at times do not read the warning signals; they persevere without reassessing things and stay in denial on something that may be fundamentally wrong. These things may include the wrong shareholders, increased cost of capital, evolving regulatory framework, fluid government commitments and changes to variable costs and taxes, which are less likely to improve over time. As a group, we have at times spent large amounts of money on feasibility studies and pre-ops but walked away when something came up that did not appear to be right. This is such an important lesson and allows you to do something more valuable with your time.

Most young entrepreneurs that day at the 30 Under 30 event asked me about raising money for startups. This is mainly about building personal credibility that is a journey of a lifetime. It's keeping your word to all your stakeholders and making sure that you communicate with them in a timely manner. Related to it, is about using money judiciously, especially when it has been entrusted in your care. Investors don't just back a good project; they back an entrepreneur who can be trusted and has the qualities to succeed.

There are two other values that determine success. The first is something that has taken a lot of good people down. And it is ego! If you can't put it behind you, then you will have a serious problem. There is so much one needs to tolerate over the lifetime of a business and one thing that must never come in the way is your ego. Every action must be in the best interest of your business. Finally, it is the intangibility of lady luck! I cannot underscore enough the role luck plays in our lives. There are millions of variables in our lives and some lucky people have all the stars aligned when they start while others continue to face hurdles irrespective of how hard they try. This is one of those unexplained anomalies that creates one of the greatest disparities in life but is a harsh reality. There is no solution to this and if you are unlucky, then pray that people in your team have better luck than you.

While we impart wisdom to the younger generation, there is so much to learn from them. I walk back with a lot of encouragement because the youth question everything. They are here to change the world by turning everything on its head; the constant search for a more efficient way to do things. What is most fascinating for me is that with each passing year, I find more meaning to the ubiquity of hand-held devices and the endless possibilities we are looking at in the future. As a consequence of my prehistoric mindset, my children joked that my iPad was a coaster; evidently, not for the next generation.

Photo by Motlabana Monnakgotla

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# BRIEF 360



## SOUTH AFRICA PASSES NHI BILL

On August 8, South Africa's minister of health Zweli Mkhize introduced the National Health Insurance bill in the National Assembly.

The bill promises universal health coverage to every South African, and details how the new system will work in South Africa.

It is compulsory insurance. An NHI Fund is to be established as a single purchaser and single payer of healthcare services in South Africa. Stated plainly, it is akin to a very big state-run medical scheme or insurer, but without competitors. So it is like SAA without Comair or Safair, GEMS without Discovery.

Under current legislation, a medical scheme member generally chooses the doctor, hospital and specialist and the medical scheme refunds that expense to the member, or for convenience directly to the provider of the service.

Under NHI, the Fund purchases the healthcare service "on behalf of the user" (mainly South African citizens and permanent residents) at accredited healthcare providers free of charge at the point of care.

The Fund will also determine the payment rates for services and "must negotiate the lowest possible prices for goods and health care services without violating applicable law".

## RUSSIA'S FACEAPP ATTRACTS MORE THAN 100,000 SEARCHES IN SA

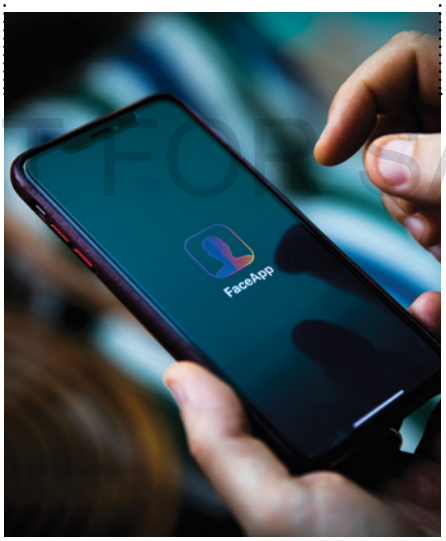
South African internet users have generated more than 100,000 search queries for FaceApp in July, while only generating 50,000 for Mandela Day in the same month.

However, privacy experts have warned of possible threat.

The two-year-old Russian made app saw the internet going crazy as it went viral with users posting their aged likenesses on social media in the #faceappchallenge.

The app uses artificial intelligence to create a rendering of what users might look like in a few decades.

Privacy experts, however, warned that the app may pose a threat to users' privacy as it stores photos on its servers, with US Senate minority leader, Chuck Schumer, appealing to the FBI to investigate the app, *The Citizen* reported.






## SUDAN PROTESTERS SIGN DEAL WITH ARMY

Sudan's army and the country's pro-democracy movement have signed a final power-sharing deal at a ceremony in the capital, Khartoum.

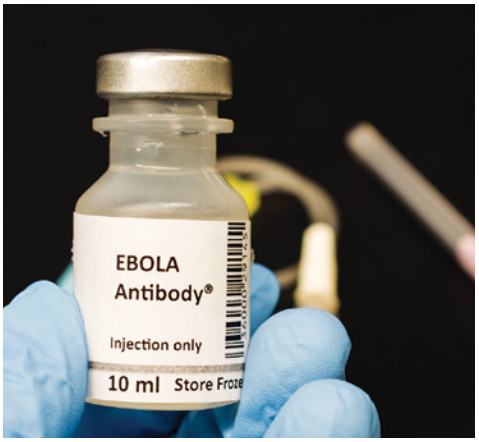
The August 17 agreement paves the way for a transition to civilian rule following the military overthrow of President Omar al Bashir in April after months of protests, *Al Jazeera* reported.

Under the agreement, a military leader would head the 11-member council for the first 21 months, followed by a civilian leader for the next 18. It would also establish a cabinet appointed by the activists and a legislative body.

Sudan's sovereign council would include TMC head Abdel Fattah al-Burhan, the deputy Dagalo and Lieutenant General Yasser Al-Atta, the TMC's spokesperson told *Sky News Arabia*.

Under a power-sharing agreement, the sovereign council would include five members selected by the TMC, five picked by the main opposition coalition, and one agreed upon by both sides.

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## EBOLA NOW LARGELY CURABLE?

In August 2018, an Ebola outbreak struck a conflict zone in the Democratic Republic of the Congo's (DRC) North Kivu province. It soon spread elsewhere throughout the nation of 81.3 million people, many of whom are embroiled in battles over DRC's valuable minerals.

By April, the outbreak had become the second worst ever recorded, and by June it had killed at least 1,357 Congolese.

But a recent clinical trial that compared the efficacy of Ebola treatments brings good news.

"From now on, we will no longer say that Ebola is incurable," said Dr. Jean-Jacques Muyembe, the director general of the Institut National pour la Recherche Biomédicale in DRC, which has overseen the trial. "These advances will help save thousands of lives."

One of the drugs, REGN-EB3, is a cocktail of three monoclonal antibodies against Ebola made by Regeneron Pharmaceuticals of Tarrytown, New York.

The second, mAB114, is derived from a single antibody recovered from the blood of a person who survived Ebola in the DRC in 1995, and was developed by the US National Institute of Allergy and Infectious Diseases.

## EARTH NARROWLY AVOIDS 'TRAGEDY'

Asteroid 2019 OK came scraping past our home planet on July 25, approaching Earth from a distance of just 45,360 miles (65,000km). The asteroid flyby took the world by surprise as it only appeared on our radars the day before.

Measuring between 190ft and 426ft across, the space rock packed the potential power to wipe out an entire city, killing thousands in the process. Unfortunately, a scientist has warned there are even bigger asteroids that could end human life on Earth as we know it, Express reported.

If an asteroid like 2019 OK hit Earth, the immediate blast radius would have only been one of the many worries to follow.

The force of impact would have rained boulder-sized debris "faster than bullets" over a region measuring 13,000 square miles (35,500 square km).

The asteroid would have also created a shockwave travelling outwards over "hundreds of kilometers".



## THE GENTLE GIANT FACING 'A SILENT EXTINCTION'

For most of his life as a Samburu warrior, Lesaiton Lengoloni thought nothing of hunting giraffes, the graceful giants so common a feature of the Kenyan plains where he roamed.

"There was no particular pride in killing a giraffe, not like a lion... (But) a single giraffe could feed the village for more than a week," the community elder told *AFP*, leaning on a walking stick and gazing out to the broad plateau of Laikipia.

But fewer amble across his path these days: in Kenya, as across Africa, populations of the world's tallest mammals are quietly, yet sharply, in decline.

Giraffe numbers across the continent fell 40% between 1985 and 2015, to just under 100,000 animals, according to the best figures available to the International Union for Conservation of Nature (IUCN).

But unlike the clarion calls sounded over the catastrophic collapse of the elephant, lion and rhino populations, less attention was paid to the giraffe's private crisis.

"The giraffe is a big animal, and you can see it pretty easily in parks and reserves. This may have created a false impression that the species was doing well," said Julian Fennessy, co-chair of the IUCN's specialist group for giraffes and okapis.



## BILLIONAIRE'S WAREHOUSE ROBBED OF $19.5 MILLION

A gang of thieves used hammers, chisels and angle grinders to break into RLG (Richemont Luxury Goods), which is part of Johann Rupert's Richemont business group, getting away with $19.5 million worth of jewelry in the heist.

The *Sunday Times* has detailed how the gang took nine hours to conduct their operation at RLG offices in Johannesburg which supplies boutique jewelry stores with items such as diamond watches by Montblanc and Cartier, two of the brands owned by Richemont.

The group of 15 individuals were targeting luxury watches, necklaces and earrings recently flown into the country with a retail value of $19.5 million, the publication added.

The gang of thieves completed the operation in under 10 minutes, and this included replacing the locks so that security would not realise there was forced entry, according to the publication.

Rupert is the chairperson of the Swiss luxury goods firm, and according to *Forbes*, has a reported net worth of $5.3 billion.

*– Compiled by Unathi Sologu*

Photo by Patrick Strattner via Getty Images; Photo by Manjurul Haque / EyeEm/ Getty Images; Photo by Claire Gillo/Digital Camera Magazine/Future via Getty Images; Photo illustration by Manuel Romano/NurPhoto via Getty Images; Photo credit should read MOHAMED EL-SHAHED/AFP/Getty Images; Photo by Ridofranz

# ZAMANI HOLDINGS SECURES A BETTER FUTURE FOR AFRICANS

Ithuba Holdings, the SA National Lottery fulfils its national service and bolsters sustainable development in the SA.




Charmaine Mabuza, co-founder and CEO of Zamani Holdings

Courage, Resilience, Integrity, Empathy, Ubuntu and Excellence. These are the remarkable qualities that have shaped the powerhouse that is Charmaine Mabuza, co-founder and Group CEO of Zamani Holdings.

From humble beginnings, Charmaine Mabuza, always had a vision to transform the lives of all South Africans, especially the less fortunate. Her hope is to create and leave a legacy of empowerment and socio-economic development to Africa and its people.

"I became very impatient with the rate of social and economic transformation in the country. It really unsettled me. But all the conviction I had at the time was that I had to do something to honour the challenges faced by people from disadvantaged backgrounds," said Mabuza.

She had a business idea she strongly believed could achieve this. Together with her husband, Advocate Eric Mabuza, Charmaine established the family owned and managed business, Zamani Holdings, with the aim of realising this vision. From as early as 1999, Zamani Holdings has played a vital role contributing towards socio-economic development in South Africa, with a special focus on education, youth development and women empowerment.

In 2013, under the courageous leadership of Charmaine Mabuza, Zamani ventured into the gaming industry, with the primary objective of securing a better future for South Africans. The company attracted a B-BBEE consortium investors to create Ithuba Holdings, an Special Purpose Vehicle (SPV) created to operate the South African National Lottery.

Ithuba became part of the Zamani group of independent companies, comprising Zamani Capital, Zamani Marketing and Management Consultants, Zamani Bets, Zamani Gaming, and Paytronix Systems.

With Mabuza at the helm, Ithuba was up and running and successfully operating

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the National Lottery, five months after it was awarded the licence, making this a record breaking roll out in the history of African Lotteries, and worldwide.

So when Ithuba became operator of the SA National Lottery, Zamani acknowledged it had a national service to fulfill to ensure that the money raised through Ithuba would benefit the most vulnerable in society. Therefore, Ithuba addresses key national imperatives; namely increased economic participation of previously disadvantaged black South Africans and socio-economic disparities which still exist amongst most sectors of our population; and where poverty remains the biggest challenge.

The leading team at Ithuba realised that it also had to take some calculated risks for Zamani to achieve success and realise its goal of giving back to communities. This partly meant innovating and changing how people do things.

With this context and less than a year after being awarded the license, Ithuba progressed the National Lottery into the digital sphere, making games available online and integrated with banking partners to make lottery games accessible on their banking apps and internet banking platforms. These innovative changes and additional self-service channels enhanced the end-user experience; and modernised the National Lottery brand.

In the 2019 fiscal, ticket sales on banking platforms attributed 14.1% of Lottery sales, while online gaming grew 2.2% of e-commerce sales.

Ithuba has also increased the National Lottery footprint by installing 9 000 lottery terminals in areas where communities previously had difficulties accessing the gaming infrastructure. In those regions, Ithuba partnered with informal businesses to provide them with this infrastructure. Resulting in a new revenue stream to help sustain and grow those businesses.

Overall, these interventions resulted in higher lottery ticket sales because of the wider geographical and digital footprint of the National Lottery. Consequently, in the 2019 financial year, Ithuba contributed

> **THE RATE OF SOCIAL AND ECONOMIC TRANSFORMATION REALLY UNSETTLED ME**

R1.6 billion towards socio-economic development initiatives from the ticket sales, through its annual contribution to the National Lotteries Distribution Trust Fund.

The company also made record-breaking payouts in the history of the SA National Lottery, the largest in the history of African lotteries being R232 million.

Ithuba's success would not have been possible without our innovative and technological advances which can be attributed to the world-class ICT infrastructure support provided by its technology partner, Paytronix Systems. Paytronix is one of Zamani's subsidiaries established in 2002.

Undoubtedly, when Charmaine Mabuza led the team at Ithuba to recognise the value of innovation, it was with the view of securing the long-term prospects for the company, its sustainability and profitability.

Having broken down the walls of patriarchy and racial divide, that often diminish women in business and deny them equal rights, Charmaine strives to develop female entrepreneurs to navigate the difficulties of doing business. She also expects all those around her to deliver excellence in order to see the changes they want to see on the continent.

Charmaine has also raised the level at which business needs to start having discussions when it talks about transformation and seeing Africa not just South Africa succeed. "If we want to see Africa succeed, it is vital that businesses always think about the best interest of their employees, their customers and the communities in which they operate."

Again when it comes to this, she leads from the front. Mabuza has built Zamani on the founding principle of Ubuntu. Her drive for success has always been about helping others, and doing so with unquestionable ethics and integrity. Today this is lived out in Zamani through a well thought through CSI programme that is not a nice-to-have, but rather a critical component of business success.

Zamani's CSI programmes are aligned to its core business activities and focused on areas of real long-term sustainable impact. These include the Eric and Charmaine Mabuza Scholarship Foundation which funds the tertiary education of young people in South Africa. Recipients have gone on to qualify as doctors, chartered accountants, quantity surveyors and ICT specialists. Education is close to Charmaine Mabuza's heart. Being the eldest child of a single mother to matriculate, Mabuza started out her entrepreneurial journey at that point to ensure her younger siblings received quality education and completed school. Education, Mabuza believes, is the key to transforming Africa.

**Zamani CSI scope also includes:**

- The Mabuza Village Housing Project, where the company built in excess of 10 houses for employees with over 10 years of service to the company
- A youth employment initiative which placed 11 young people in various departments in the company on a 12-month internship programme.
- A women empowerment programme that identified 65 female retailers to develop, train and upskill in order to improve their business skills.
- A media initiative to raise awareness and instil a sense of responsibility around preventing violence against women, especially femicide.

Charmaine Mabuza has positioned Zamani Holdings and its group of companies for better economic prospects not only of the company but of many South Africans. As for Ithuba Holdings, this 'best-in breed' company will continue to innovate and further entrench its competitive advantage, attract more players and enhance the user experience. At the heart of why the business exists is people. Therefore as the company moves forward so do the people it touches.

# PRINCE NED NWOKO, NIGERIA'S LEADING LAWYER AND PHILANTHROPIST

Meet Prince Ned Nwoko, the 59-year-old lawyer who runs one of Nigeria's most successful Law Firms.



Prince Ned Nwoko

Prince Ned Nwoko is a Nigerian born lawyer and businessman. He is a Senior Consultant with Ned Nwoko Solicitors, a London-based law firm engaged in management and verification of foreign debts of third world countries, including their component states. He also served on the Vision 2010 Committee of Nigeria and is a member of the capital market. He served as Chairman of the External Committee of Vision 2010. Nwoko is also the Chairman of Project Tourism Nigeria, a Nigerian government initiative aimed at advancing the country's struggling entertainment and tourism industry. Nwoko was also a former Member House of Representatives, representing Aniocha North/South and Oshimili North/ South Federal Constituency of Delta State.

**1. Walk me through your education and professional background**

I had my primary and secondary school education in Nigeria before proceeding to the United Kingdom (UK) where I studied for a first degree in law and history from the University of Keele. After this I attended Kings College, university of London, where I obtained an LLM in maritime and commercial law and where I was called to the English bar, at Lincoln's inn, before I joined the crown prosecution service as a prosecutor. I was later qualified as a solicitor of the supreme court of England and Wales. In terms of my professional career, I worked with two firms (Kumars Solicitors and Pascaldiers & co Solicitors), before setting up my own firm in London: Ned Nwoko & co solicitors. I was also secretary general, Nigerian legal practitioners UK; an elected member of the law society, England and Wales and visiting adviser, citizens' advice bureau, London. I was recognized as the best black lawyer in England in 1995. I made my wealth from acting on behalf of various states in connection with their foreign loans and then engaging in reconciliation and recovery of over deductions.

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**2. What were some of the typical challenges you encountered in your entrepreneurial Journey?**

There are obvious pitfalls before entrepreneurship in a warped undeveloped nation like ours. Policies, Programs and Institutions of government particularly are not stable and organized. Every new government that comes emerges with new changes that have no correlation with the systems of the predecessor, no matter how sound or realistic. Often, there are no clearly defined official precepts and guidelines for entrepreneurs to thrive. The enabling environment is scarcely there. Corruption, decay in public utilities, frustrating bureaucratic bottle necks and haphazard policy direction and implementation make doing business here a Herculean task. For me, I have dual cultural and historical experiences. I grew up in a society where teething challenges abound not just in business but everyday life. I also have British assimilation with my long sojourn in England, a society where things work prim and proper in seamless order and minimal stress. My background and professional orientation which exposed me to two different climates - African and western world prepared me to brace up to challenges as an entrepreneur

**3. What advice do you have for today's young entrepreneurs?**
Sincerity and fidelity to their chosen business paths. Build honest and dedicated staff no matter how small and be committed to the needs and sensibilities of customers and all stakeholders. Trust helps a great deal in business. Young entrepreneurs also require utmost concentration in order to succeed in business. An entrepreneur who desires growth must have an eye on the ball like a footballer keen to score goals. Sharp focus is key.

**4. Do you have any entrepreneurship empowerment project yet or in View?**
Firstly, I am building a university in my Idumuje Ugboko hometown. The school will resume classes soon. You must have heard of STARS UNIVERSITY (Sports Technology, Arts and Research Sciences). It is unique. The first sports university in sub Saharan Africa. It is designed to offer specialized courses in sports development as well as conventional academic programs. Most importantly, it will create jobs; forge popular prestige, enlightenment and exposure to the wider society. A key component of the university is to train and empower young entrepreneurs that will drive businesses in Africa and establish their own corporate empires. We want to breed Entrepreneurs that will change the course of history in Africa. Most of the mentees in the program will be placed on scholarships under Prince Ned Nwoko educational foundation. The entrepreneurial empowerment centre on self-sustenance and economic independence. The twin drivers of development Nigeria desires most to wake up from socio -economic slumber.

**5. Tell us about Mount Ned and how it came about. Passion or Business?**
Mount Ned resort is first and foremost a passion. I am a lover of nature. Also, I have an emotional attachment to African and Arabian history and architecture because I believe that civilization originated from these two great regions. The inspiration to build Mount Ned resort came from my deep long-standing exposure to these two worlds. The Mount Ned Nwoko Resort located in my ancestral home is reputed as one of the most wondrous architectural sites in Nigeria. It is a multi-billion Naira resort and home to some of the rarest African and Arabian antiquities. It rests at about 35 kilometers from Asaba Airport and less than 30 minutes' drive from the capital city of Delta state. It is a Tourism destination settlement in Nigeria, rich in exotic wildlife with traditional settings tinged with modernity. Mount Ned is listed by the Delta State Tourism Board among 21 accredited sites. It is a serene haven of peace, with mild climate in both dry and rainy seasons. The outstanding features of the resort include a 100 feet tower, a grandiose Arabian styled mansion, Olympic sized swimming pool, standard tennis court and a tropical park, with a zoo, home to crocodiles, ostriches, Horses, Sea Eagles, Porcupines, Monkeys, rabbits and other animals.


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The Executive Management office of each organisation will host an Ibrahim Leadership Fellow for a 12-month period. The Fellowships are open to young professionals, mid-career and new executives up to the age of 40 or 45 for women with children. The Fellows will be nationals of an African country with 7-10 years of relevant work experience and a Master's Degree.

**The application process opens on 12 August 2019 and closes on 14 October 2019.**

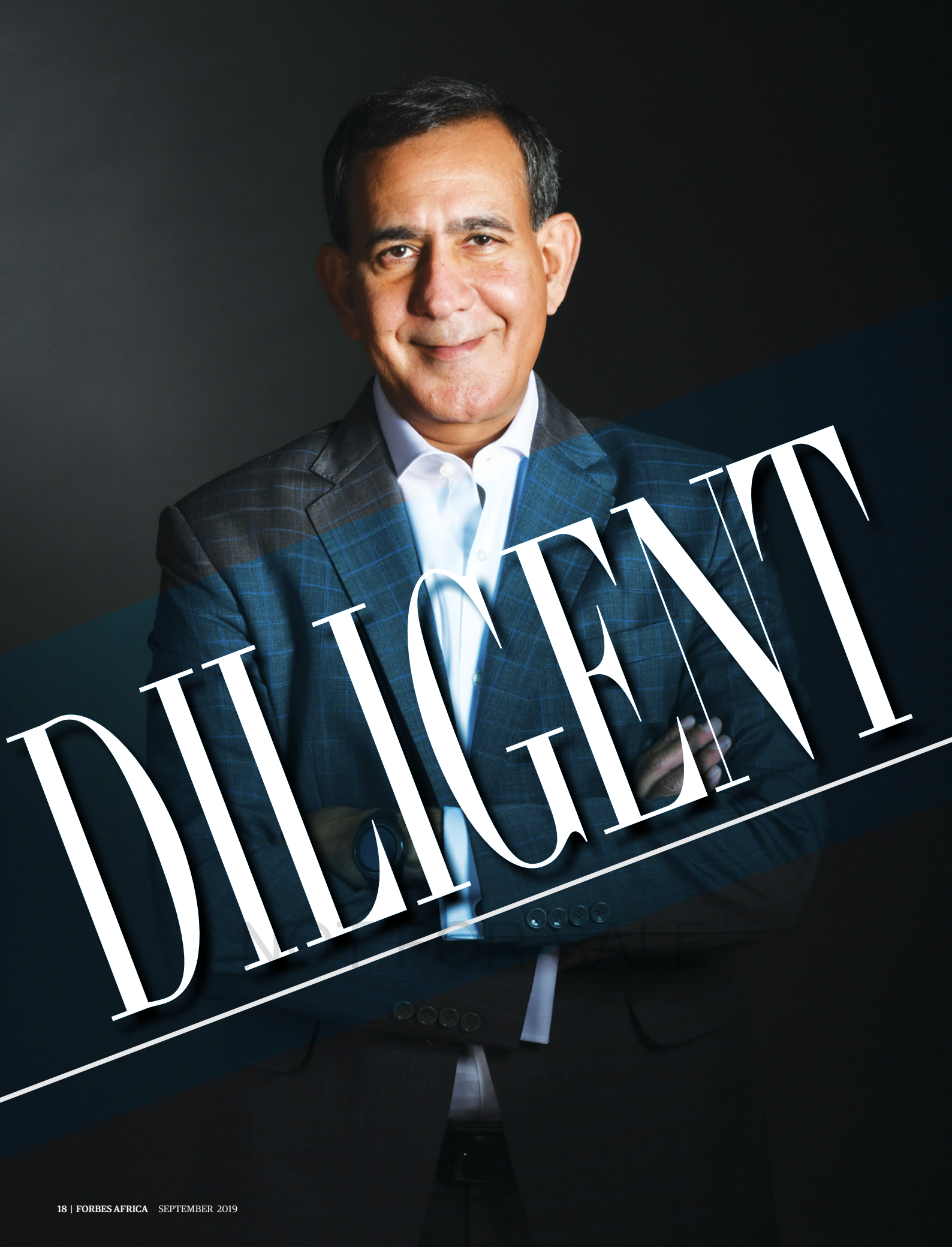
**For more information about the Fellowship programme, eligibility and application process please visit:**

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# DILIGENT

# ABOUT DIGITAL

Mastercard knows only too well that technology can drive inclusive financial growth with simpler and more efficient ways to do business and life. And Raghu Malhotra, the man spearheading this trajectory in Africa, is also focused on social progress.

BY RENUKA METHIL

IN MANY WAYS, RAGHU Malhotra is like the brand he works for, leaving his footprints in different parts of the world, and in some cases, the most unlikely corners.

On a scorching summer's day in June 2016, Malhotra traveled 100km east of Jordan's capital city Amman, to a camp with white tents named Azraq built for the refugees of the Syrian Civil War.

In the desert terrain and hot, windy conditions, people had to queue for hours on end for plates of food handed out of visiting trucks. But some of them, displaced and homeless overnight, expressed their gratitude to Malhotra, President for Mastercard in the Middle East and Africa (MEA).

Mastercard, a technology company that engages in the global payments industry, had distributed e-cards, as part of a global collaboration with the World Food Programme, to the refugees that they could now use to purchase food and other supplies from local shops.

"I spoke to the people myself and saw what their lives were... Even those who were doctors with their families and were displaced... They said to me 'you have restored dignity to our lives; you have no idea how demeaning it is to queue up to be given food'... We actually digitized how that subsidy for food was given. Some of these things go beyond economics," says Malhotra.

Beyond economics.

That very simply sums up Malhotra's mandate for Africa as well.

The New York-headquartered Mastercard, ranked No. 43 on *Forbes'* list of the World's Most Valuable Brands, with a market cap of $247 billion, which connects consumers, financial institutions, merchants, governments and business, is fostering key partnerships across the African continent to help drive inclusive economic growth.

The idea, Malhotra says, "is to get our global skill-set to operate in its most efficient form in every local economy, at the same time, we must do good, and it must be sustainable."

He calls Africa the next bastion of growth for various industries.

"As a company, we have stated we are going to get 500 million new consumers globally. And Africa plays a big part of that whole story... We want to be an integral part of various economies here," says the man responsible for driving Mastercard's global strategy across 69 markets.

"It probably took us over 20 years to get the first 50 million new consumers, in my part of the world, which is the Middle East and Africa (MEA). It took us probably five years to get the next 50 million, and last year alone, we put over 50 million consumers [in the formal economy] in MEA. That is part of our whole African story, so this is just not rhetoric; we are actually building our business on that basis."

Home to four of the world's top five fastest-growing economies, Africa has the fastest urbanization rate in the world, the youngest population, and a rapidly expanding middle class predicted to increase business and consumer spending.

It's a continent of opportunity for global players like Mastercard with an eye on the potential of a booming consumer base and small and medium entrepreneurs, most of whom are still not a part of the formal economy. A large proportion of Africa is still unbanked. There is enough business opportunity in offering people digital tools so they can lead respectable financial lives.

But it is in knowing that financial inclusion is not just about technology, but more about solving bigger problems, as the World Bank says in its overview for Africa: "Achieving higher inclusive growth and reaping the benefits of a demographic dividend will require going beyond a business as usual approach to development for Africa. Going forward, it is imperative that the region undertakes the following four actions, concurrently: invest more and better in its people; leapfrog into the 21st century digital and high-tech economy; harness private finance and know-how to fill the infrastructure gap; and build resilience to fragility and conflict and climate change."

And in order to enable financial access, Mastercard has a balanced strategy in place, with the right partnerships for inclusive growth on the continent, Malhotra tells FORBES AFRICA.

"Every emerging market has different segments of people and you need to get the right product for the right segment. What we do is a balanced growth strategy across the continent based on timing, opportunity etc... Of course, because the bottom of the pyramid is much bigger, I think what we need is to adapt things differently; that is where the inclusive growth story comes from. That is where the opportunity is, but there is a second part to it..." And that, he summarizes, is advancing sustainable growth, doing good and bringing more transparency and efficiency.

> **WHEN I SPEAK TO VARIOUS GOVERNMENTS AROUND AFRICA, I SEE A COMMONALITY OF WHAT THEIR NEEDS ARE... A LOT OF THEM REALIZE RUNNING CASH ECONOMIES IS A VERY INEFFICIENT WAY OF DOING THINGS.**

The new pragmatic dispensation of governments in Africa towards ideas, technology and innovation has surely helped open up the stage to newer segment-driven products, especially as Africa already has such global laurels as Safaricom's mobile money transfer and micro-financing service M-Pesa that took financial access to a whole new level. Also, sub-Saharan Africa remains one of the fastest-growing mobile markets in the world.

Malhotra says he finds African governments consistent in how they are rolling out their digital vision, and in trying to collaborate towards creating better ecosystems for their economies, though each is unique with its own dossier of problems.

"When I speak to various governments around Africa, I see a commonality of what their needs are and I also see a commonality in how they are trying to respond. So I think a lot of them realize running cash economies is a very inefficient way of doing things... Also, the consumer base is much more open to new technology because there is no bedded infrastructure or legacy infrastructure. I think where governments need to start thinking a bit more is how much do they want to do completely on their own."

Part of this transformation on the path to financial progress is alleviating the burden of cash. Cash still accounts for most consumer payments in Africa. Mastercard, which started out as synonymous with credit cards, continues its efforts to convert consumers from cash to electronic transactions, and move beyond plastic.

### A cashless continent?

In an interview with us in mid-2016 in Johannesburg, Malhotra had said: "People consider the likes of Facebook and Apple as digital giants that have transformed things, and they really have, but if I really think of a company that 50 years ago digitized cash, I would like to believe we were the pioneers of what is called the digital economy. Obviously, you require technology and infrastructure to continue the transformation."

And the first challenge to converting a cash economy to electronic is education.

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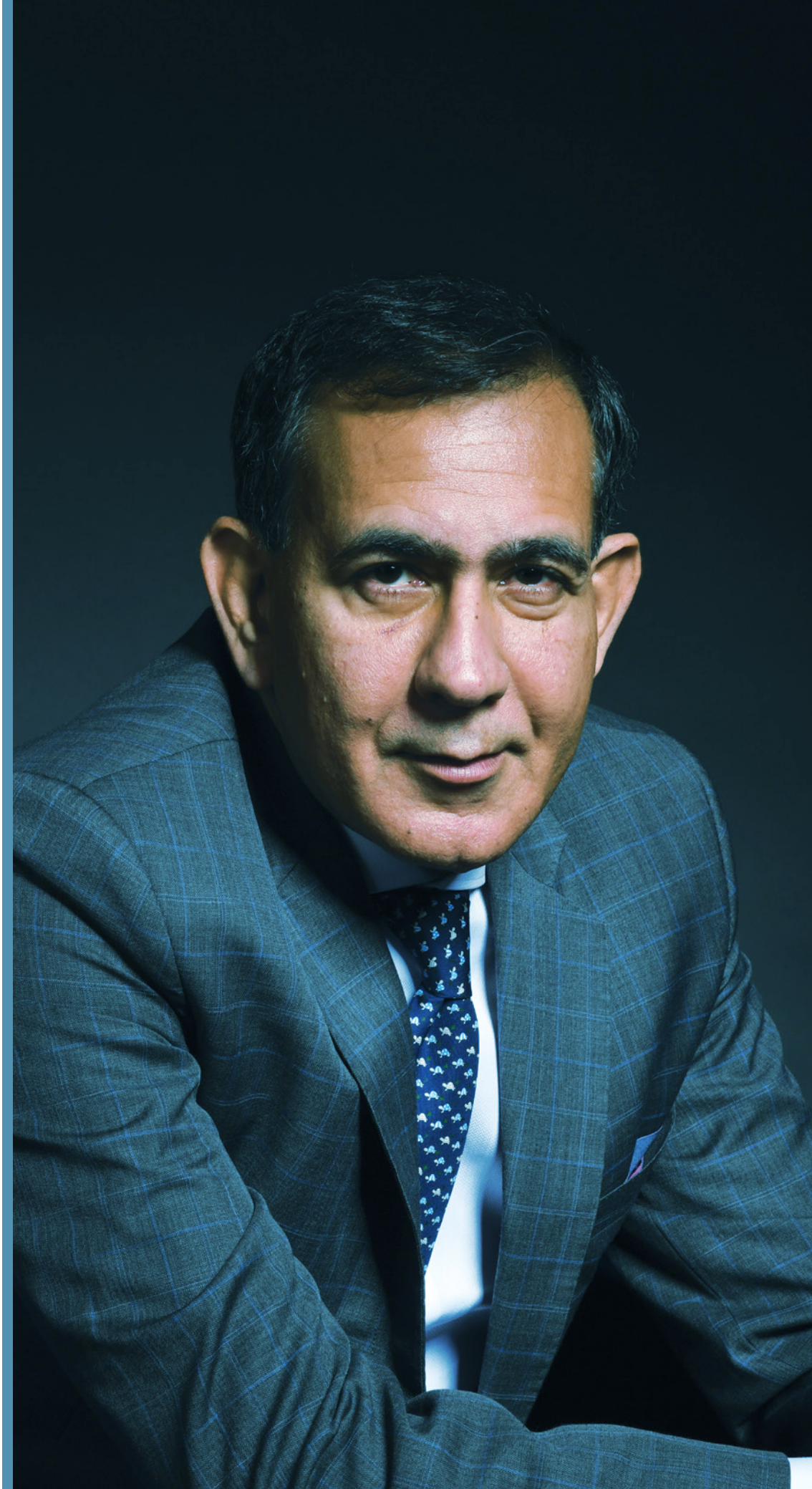
Photos by Motlabana Monnakgotla

"There is a common perception cash is better. But if you lose your wallet, and if you have cash in it, you will never see your cash again but you actually have a chance of getting your card back. Secondly, cash is a very inefficient form. Somewhere, the world has forgotten it started with the barter system: you moved to mineral trade, then diamonds and gold, you changed that to coins, silver and gold, you changed that to bullion and then moved to cash. Cash has been a phenomenon only for the last 600 years or so. The time has come to digitize it. Why can't we just accept that and move forward?

"Once you get over that hurdle, you start with infrastructure, and that's where partnerships with governments and different stakeholders come into play," he had said.

It's these conversations and partnerships that have been bringing the Dubai-based Malhotra to Africa's shores several times a year. During our interview in July this year, he said: "Just to give you a flavor, I visited four African countries over the last 15 days."

Mastercard is ramping up investments and expanding its reach across Africa. New offices have opened in Senegal and Cote d'Ivoire, with another on course in Zimbabwe. There are more people on the ground, closer to the local markets. Over the last five years, the company's





employees in Africa have gone up by over three times, and 40% of all new hires in MEA are in Africa. The company has also stepped up the backing of African fintechs, investing in a number of firms such as Flutterwave and DukaConnect, and e-commerce platforms such as Jumia. In Rwanda, Mastercard has provided a grant of $1 million, spread over three years, to advance economic growth and financial inclusion.

In 2015, the company opened its first Lab for Financial Inclusion in Kenya partnering with the Bill & Melinda Gates Foundation. Some of the innovations made here are then exported to other parts of the world, attests Malhotra.

"We have some outstanding examples of products and platforms that have been created in Africa."

Agriculture is one of the focus areas alongside education and MSMEs (micro, small and medium enterprises).

One of the thrust areas for Mastercard is a farmer network that connects buyers and sellers of farming goods, providing them with a digital identity and enabling them to sell produce, buy inputs and receive payments for seeds and fertilizers via their feature phones, bringing more transparency into the value chain.

The other example is Kupaa, a digital payments tool that is making paying school fees easier by allowing caregivers to pay them via a basic cell phone in small amounts and allowing multiple individuals to contribute funds to the child's education.

"Most people at the bottom of the pyramid cannot afford to pay school fees on a monthly or quarterly basis, but they can on a daily basis, if they are daily wage-earners. We have created a platform that is almost like crowd-funding that allows to pay for kids' education," says Malhotra.

"There are many global organizations that looked at this model saying that it is truly a real example of public-private sector partnerships that are about inclusive growth. I am very encouraged on how other people are taking to these platforms."

Solar energy is also in the mix, with a product called M-KOPA enabling Ugandans to have power in off-grid homes. They make 'pay-as-you-go' Quick Response (QR) transactions for solar energy solutions.

"Clearly, we are trying to do things differently in bringing many platforms and cobbling them together... You should expect more and more such innovations coming from us in the future," says Malhotra with exuberance.

Salah Goss, Vice President and Head of Mastercard's Lab for Financial Inclusion in Nairobi, who has had extensive experience in the financial inclusion arena, calls it a "human-centric design".

"It's about giving communities that are excluded access to services they care about; it's not financial inclusion just for a bank account, but to support an economic livelihood. It's about adding efficiency and choice, safety and security. And that happens with digital. We are laying the superhighway of digital transactions, so, people can benefit and connect to the global economy," says she.

What Mastercard has also realized as important is partnering with – rather than countering – mobile network operators to build a stronger payment ecosystem on the continent.

"I admire the mobile companies on how they became interoperable between themselves, [and that] is how they created

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scale. Because they created scale, the cost of hardware went down very dramatically," says Malhotra.

"The concept of interoperability is really important... It's the right way of doing things for the consumers. I feel mobile companies have suddenly embraced that and therefore, our partnership with mobile companies is exactly in the same line, saying can we drive efficiency and scale for you to create the right value you want to create for your customer. So it is about working together with them on various points."

Another important focus is Mastercard's investment in women, who are traditionally underserved in Africa. Goss says they "suffer from financial exclusion, and part of the work is to break the cycle of invisibility".

For instance, according to the Mastercard Index of Women Entrepreneurs in 2018, only 18.8% of South African business owners are female, compared to 46.4% in Ghana, which is ranked as the country with the highest women-led companies in the world. This number could be improved, with the right support to aspiring female business-owners.

### 'The purity of the people in Africa'

This year, Malhotra was appointed as a member of the United States' (US) President's Advisory Council on Doing Business in Africa. His role will be advising the president of the US, through the secretary of commerce, on ways to strengthen commercial engagements between the US and Africa.

"I am honored to be on that council... It's going to have various facets to it. I don't have all the details as yet, but the idea is to say 'hey listen, Africa is a continent on the move, many things are changing'. It's a look into the future as well and to also, hopefully, try and address the various barriers that currently exist to ensure better commercial arrangements between the US and Africa."

Coming out of the aegis of the US President's Advisory Council, adds Malhotra, is Prosper Africa, an initiative that unlocks opportunities to do business on the continent, to increase two-way trade and investment between the US and Africa.

All this will see Malhotra intensifying his trips to Africa, a continent he has been visiting for the last decade. Yet, each time, even before he lands on African soil, he says he is captivated by its beauty.

"I don't think the world has really understood how beautiful this continent is. The first thing that stood out for me when I came out of a plane in Africa, was the sky," he recalls. "I find purity in the environment. Every single time I go to an African country, when I look up, it gives me the same feeling. It doesn't matter whether it's a rainy day or how the clouds are on a clear day. There is something there, so when people say that humankind was born in Africa, I kind of get it. The purity of African nations and the people is a real joy. Through all the chaos, there is purity. That's what stands out for me."

> **WHEN PEOPLE SAY HUMANKIND WAS BORN IN AFRICA, I KIND OF GET IT. THE PURITY OF AFRICAN NATIONS AND THE PEOPLE IS A REAL JOY.**

With a career spanning more than 25 years, prior to joining Mastercard in 2000 in New Delhi, Malhotra, the son of an army colonel in India, served in a variety of roles at Citicorp, American Express and ANZ Grindlays Bank.

"I joined Mastercard because I wanted to join a company where I wanted to run a business slightly away from banking. Nobody in the world was willing to give a risk manager the job as a head of a business. But Mastercard gave me a chance. I used to run area countries for South Asia and then I realized what a great industry it was. There was a huge shift taking place with the world moving to a digital form. That is really where my journey with Mastercard began," says the lean leader, nattily dressed in a grey power suit for FORBES AFRICA's cover shoot in Johannesburg.

There is a disarming smile when you quiz Malhotra about his favorite Africa sojourns. Top of the list was his impromptu visit to Victoria Falls on the border between Zambia and Zimbabwe, following a business trip in South Africa.

"I was in South Africa and had a choice to fly all the way out to Dubai, and I said 'forget it, I am going to go hiking' and decided to go to Victoria Falls [in Zimbabwe]. I hiked, went ziplining over the gorge, took a helicopter ride over the falls, and did a boat ride through the river. I felt one with nature, and very much in harmony with the land."

He experienced similar exhilaration many years ago in Argentina, when on his own, he went glacier-climbing over a weekend, after a business trip.

"You are just alone and at that point of time, maybe it must be the rarefied air there, I got clarity in my head and I started thinking it's really nice to be by yourself from time to time, as busy as you are, being the leader you are, the husband you are, the father you are or could be, or the uncle you could be. If you don't spend time with yourself, you are not really being your whole self. This just means don't spend all your time trying to make other people happy, take some time off for yourself too, and I think that really helped me," says Malhotra as advice to fellow business travelers living out of a suitcase most of the year.

Back home in Dubai, the other half of the power couple is Malhotra's successful banker-wife Banali. They have two daughters, aged 19 and 11.

Soon coming up in the glistening Middle Eastern city, is Expo 2020, which Mastercard is partnering with, rolling out a raft of its payment, biometric, AI and wearable technologies. The glitzy showcase will draw tourists from around the world for "a converged digital experience".

But Malhotra will be back to Cape Town in February, he promises, to celebrate his 50th birthday. There is no other place but Africa he would rather be, to mark his next crucial milestone.

# 'YOUR POLITICAL AFFILIATION CAN ALSO AFFECT YOUR JOB'

Ghana has the most women-owned businesses in the world, but female entrepreneurs still face daunting discrimination when it comes to funding.

BY PEACE HYDE

WHAT DO 90% OF women-led enterprises in Ghana have in common? It is a simple answer – they don't operate at scale because of a lack of funding available to them, according to Lexy Owusu-Boahene, the founder and managing director of LX HR Solutions, a HR consultancy based in Ghana.

A 2018 report agrees with her assessment. According to the Mastercard Index of Women Entrepreneurs (MIWE), Ghana is the benchmark for women's business ownership. And with a population size of about 29 million, the country is projected to have the fastest-growing economy in the world in 2019, according to the International Monetary Fund (IMF).

At 46.4%, the MIWE report indicates that Ghana has the highest rate of women-owned businesses in the world, irrespective of the fact that it is predominantly seen as a patriarchal nation, women's labor force participation is estimated to be 96.1% according to the same report. However, a majority of women-led businesses in Ghana are subsistence businesses.

"Most businesses in Ghana are stuck at the micro level and unable to expand because of a lack of access to funding," says Owusu-Boahene.

For the past four years, her HR consultancy business has been providing services ranging from HR policy and strategy, talent management solutions, organizational culture as well as recruitment and selection for both public sector and private sector clients.

"Funding is always an issue. Being young and female in a male-dominated country and working with the type of people I have worked with; it takes a lot for people to take you seriously and I don't blame it on culture alone but it is just simply what they are used to. It stems from experience and they are just used to seeing women at home."

Furthermore, the prevailing sexism is always a barrier that women need to overcome when it comes to fund-raising.

In Ghana, it's easy to find successful micro-enterprises in the vicinity run by women, who not only manage their business but also financially support their families and educate their children. These are often home-based businesses that have the potential to scale but the entrepreneurs are unable to do so.

"So the question remains, is access to finance the biggest challenge? Or are there other critical factors such as business models that need to be addressed in the funding ecosystem for women?" says Franklin Cudjoe, Founder of IMANI Centre for Policy and Education, a think tank based in Accra.

"What I have also found is an issue is the type of government you support. Your political affiliation can also affect your job and it is sad that the type of political party you support can affect your business opportunities. Women don't raise as much money as men even when they are qualified to do so. When you go to a bank, not only do you have crazy interest rates for taking out a loan to do a business but you also have to deal with a negative perception as a female entrepreneur," adds Owusu-Boahene.

Although Ghanaian women have fairly equal access to formal financial institutions and saving mechanisms, scoring 84.6% for women financial inclusion on the MIWE report, constraints such as high interest rates charged by the financial institutions is seen as the key cause of business discontinuance.

> "FUNDING IS ALWAYS AN ISSUE. BEING YOUNG AND FEMALE IN A MALE-DOMINATED COUNTRY...

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AKOJO Market is a platform selling products made by African designers

"We often hear of the government launching several schemes and initiatives to apparently help more women scale by increasing access to finance for entrepreneurs but they exclude a majority of women-led enterprises especially in the agricultural sector. For things to improve, we need to change the narrative around women entrepreneurs in Ghana," says Vanessa Gyan, founder of Sincerely, Vee, a lifestyle brand with a TV show and a foundation.

"Most traditional banking institutions have a high-risk perception while lending to women entrepreneurs, due to their perceived limited understanding of financial technicalities, lack of collateral, as well as networks. They wrongly believe that women-led enterprises often do not adhere to the applicable financial reporting standards, which further leads to a higher rejection rate from banks," avers Kwame Opoku, a futurist and serial entrepreneur based in Ghana.

Natasha Buchler and her cofounder Annie launched AKOJO Market, a UK platform selling carefully curated products made by African designers. The company identifies and champions independent, artisanal businesses in Africa who operate a sustainable and ethical supply chain by providing them with an online platform to sell internationally, and a community to join and grow from. She believes in spite of the many challenges women face, now is the time for women led startups to take the risk.

"It is a hugely exciting time for startups in Africa, and especially for women. The rise of accelerator programs, incubator hubs, social media and mentorship schemes is giving female entrepreneurs the chance and – importantly – the confidence to plug an idea and run with it.

"The networking opportunities in major cities such as Lagos, Accra, Nairobi, Kigali and Kinshasa, to name a few, are growing daily. There are of course practical challenges faced by many entrepreneurs in Africa - many start-ups require the use of tech, which isn't ideal in places that have intermittent Wi-Fi connection or power outages," says Buchler.

The company also has a social focus, which is to empower more artisans, more women and more entrepreneurs to be financially independent, to send their children to school and to be in business in five years' time with a growing workforce.

"The very nature of a startup is that something is being disrupted or introduced as new. It can be challenging to break old habits and patterns and to introduce a new way of working, consuming and behaving. It requires a huge amount of confidence and conviction, which can be tricky, particularly when presenting to male audiences," says Buchler.

When it comes to access to finance, the male-dominant financial services sector is another challenge. According to Opoku, lack of adequate women relationship managers is a key reason for women entrepreneurs avoiding bank visits.

According to the International Finance Corporation (IFC), women employees constitute less than 20% of the workforce in banks.

"With low representation of women in the financial sector, unconscious gender biases of our patriarchal society often influence the investment decisions, leading to high rejection rates for women-led businesses," says Opoku.

"There is a huge disparity globally between female and male entrepreneurs raising money. According to statistics published last year, 98% of venture capital (VC) funding went to men (and reportedly 0.2% of venture deals to black women). The official reason: lack of deals in the pipeline, though from our experience of fund-raising and of female-founded businesses we work with, this seems hard to believe," says Buchler.

But the opportunities for investors to tap into this largely underserved market are endless.

"Africa is largely an untapped resource and the next phase of industrialization is likely to come from here. Secondly, African products create opportunities for high returns for investors and as experience has shown us, the success of women in business is good for not only the profitability of the business but also the development of the entire community," says Opoku.

The question remains what can be done in Ghana to encourage 'women investing in women'? Can the established and high-net-worth women in Ghana collaborate to build a positive narrative and business case of investing in women entrepreneurs?

This is a debate that must be addressed. The current programs on 'empowering' women are clearly not passing the mark and to see a real change on the ground, there needs be a new way of thinking if Ghana wants to eventually see an inclusive society. In the meantime, more encouraging reports are welcome in shifting the narrative.

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Marcus Byrne, a professor at the University of the Witwatersrand holding a beetle specimen made of metal

# WELL DUNG, BEETLE!

**In a world that's embracing new technology, inspiration is being found in bug behaviour. The hard-bodied dung beetle is now key to robotics research, in Africa too.**

BY KAREN MWENDERA

UNDER A SCORCHING African sun in the Kalahari Desert, 70kms outside Vryburg, a town situated in the North West Province of South Africa, researchers from the University of the Witwatersrand (Wits in South Africa) and Lund University, Sweden, monitor the movements of a dung beetle in windy conditions.

The insect, with a rotund body and metallic luster, resembling a miniature cyborg, is expertly rolling away a ball of dung, oblivious to the gaze of science.

The researchers aim to explore more about what influences the dung beetle's movements.

They find that it uses visual cues such as the sun, polarized light, color gradients, intensity gradients in the sky, and even the Milky Way, as external reference points.

The insect uses the sun as a direction tool but what happens after dusk? The researchers find that in windy conditions, the dung beetle switches from using the sun as a navigator to using the wind.

Astounded by this discovery early this year is Marcus Byrne, one of the researchers from Wits.

Having studied dung beetles for over 20 years, he believes that this new knowledge from a tiny being could influence the bigger world of artificial intelligence (AI) and robotics.

"We have gone from massively complicated to as simple as possible, using insects as a model," he says.

In Byrne's office at Wits, dozens of dung beetle replicas sit on his bookshelf that's also heaving with thick volumes and encyclopedias on entomology.

A large poster of a dung beetle, almost in flight, hangs on a wall. To tech geeks and film buffs used to the sci-fi genre, this would look more like a still from the *Transformers* movie series.

Byrne excitedly scavenges for an apparatus used to illustrate how the dung beetle's brain works.



> **"THIS IS WHAT WE CAN LEARN FROM INSECTS, YOU CAN SOLVE WHAT APPEARS TO BE A COMPLEX PROBLEM BY ACTUALLY HAVING VERY SIMPLE SET OF RULES.**
> – MARCUS BYRNE

The insect has a navigation feature, such as switching from the sun to the wind, and an orientation feature that Byrne explains in detail.

Orientation means the dung beetle is able to maintain its body in a straight line to a specific direction, whilst navigation means that it is able to know where it is, relative to something else.

Being able to switch between the two is an amazing skill for insect life to have, according to Byrne.

Some dung beetles can operate with one of the systems while others can operate with both.

For Byrne, the dung beetle species the researchers worked on was only able to use its system of orientation.

"What makes this feature of the dung beetle key to researchers and robotics, is that unlike other insects such as the bee, the dung beetle does not need to be trained to do an experiment," he says.

"She will just roll the ball if you put the dung ball down. And if she is in the

NOT FOR SALE

Photos by Karen Mwendera; Photos supplied; Photo via Getty Images; Photo by Chris Collingridge

mood, she will roll that ball," he says.

When a dung beetle is in searching mode, it uses its sense of smell to find the dung.

After the dung is found, it rolls it up into a ball and then switches to a visual system to recognize the ball.

"It switches its brain from smell to vision. And we think that that's because it has a very limited set of neurons. It probably has less than a million neurons in its brain."

The dung beetle, despite the size of its brain, can process information and decide which sensor to use.

"They are scanning the horizon to look for a large dark object against the horizon and that's probably a ball, and you could teach a robot to do that," adds Byrne.

"What you have is a compass with a fallback system that if one cue is not available, another one can be incorporated and if all of the visual cues fail, it still has a mechanical cue," he says.

In this way, Byrne suggests, it could aid in the development of robots and AI.

"This is the sort of thing that the air force, GPS and anyone who wants to orientate across the planet, [would] want their machines to be able to do," he says.

"What if the power goes off and what if the battery goes flat or someone shoots down the satellite? Now, you have a natural full-proof system that does not require any external energy inputs, it just uses the signals in nature.

"This is what we can learn from insects, you can solve what appears to be a complex problem by actually having a very simple set of rules," he says.

**Learning from the beetle brain**

The dung beetle has a miniscule brain, with less than a million neurons, when compared to the brain of a human being which has over 100 billion neurons.

But despite this, the beetle is still able to use its neurons to process two different sets of inputs at the same time,



Benjamin Rosman with the robotics used at Wits

and can pick from a wide array of inputs to complete a task at any given time.

"It can choose between the polarized light input and the sun input using the same neuron, it just codes the information in a different way," Byrne says.

When it reads polarized light, the spikes in the neurons are a different pattern from when it reads sunlight.

"This is also dead cool because you have limited computing power and you don't have to build a new transistor or a new wire or a new gateway for this information.

"You can use the same communicating system. You just code the information differently.

"It is very difficult to convince even an intelligent computer what is the most important piece of information it needs to deal with at any given time," he says.

After learning about Byrne and his work on dung beetles from an online article, another professor from Wits was interested to see how they could collaborate.

> **"ON THE ONE HAND YOU, CAN LOOK AT INSECTS TO SOLVE ROBOTICS PROBLEMS AND IT'S A GENERAL THING WE DO IN AI BECAUSE THERE'S ALREADY A PROOF OF CONCEPT. LIVING CREATURES CAN DO INTELLIGENT THINGS.**
> – BENJAMIN ROSMAN.

Benjamin Rosman is a principal researcher at Council for Scientific and Industrial Research (CSIR) in South Africa's capital Pretoria with a focus on machine learning, AI, robotics and

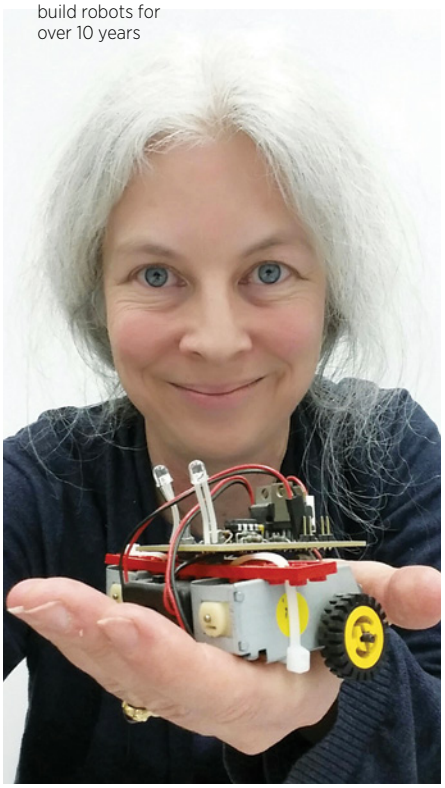


A beetle landing on dung at night



Two dung beetles engaging in a roller fight

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Barbara Webb has been studying insect behavior to build robots for over 10 years

automation.

He also spends his time lecturing at Wits teaching bright-eyed students about the world of robotics, something he is passionate about.

"Robotics and AI have a long history and relationship with understanding living organisms," Rosman says.

He grew up interested in making computer games but later found AI and robotics much more intriguing.

Now, he believes that the world of robotics has a thing or two to learn from insects.

"On the one hand, you can look at insects to solve robotics' problems and it's a general thing we do in AI because there's already a proof of concept. Living creatures can do intelligent things," Rosman says.

Robots can be built from understanding the way the insect brain works, for example, the artificial neuron networks Byrne mentioned earlier.

But the roles too can be reversed where these robots can help humans understand insects.

"So you can study these natural



A *Eudicella* Beetle designed with watch parts by Mike Libby

**THERE ARE A LOT OF DIFFERENT THINGS IN SCIENCE FICTION AND THERE ARE A LOT OF THINGS IN REAL SCIENCE THAT CREATE CONTEXT FOR THIS TYPE OF WORK TO DEVELOP.**
– MIKE LIBBY

phenomena to get a better idea of how to build robots or systems or solve problems, and the flip side of that is you can build robots that help you understand the natural phenomena," Rosman says.

**Insects saving lives?**

With modern inventions such as self-driving cars at the cusp of commodification, the word 'autonomous' is on everyone's minds.

Byrne believes that insects such as the dung beetle also have a say in this.

But, forget self-driving cars, Byrne believes learning from the dung beetle could also potentially save lives.

He explains how this could work in a life-threatening situation.

If a robot is programmed to navigate and orientate like the dung beetle, it could do so autonomously if sent into a building that is burning.

The robot would be able to maneuver around the building, find people and alert where the humans are trapped in the building even without being programmed.

"It's a life-saving device that even if it gets burned in the building, it is not a big deal," Byrne says.

On another continent, a researcher from Scotland created robots inspired by insects.

Barbara Webb, a professor of robotics at the University of Edinburgh, has been studying insect behavior to build robots for over 10 years.

"Recently, we focused on navigation behavior in insects; so how ants and bees are able to get back to their nests. They started by keeping track of how fast they have moved in each direction and so we have a few hypotheses on how they do that and what brain mechanism is behind that," she tells FORBES AFRICA.

By studying the insects' brains, she and her team were able to implement and test out the theories they had and built a robot that used a similar mechanism.

One of the robots they built was made of wheels, a mobile phone and mirrors to keep track of their navigation and recognize a route to detect familiarity.

"Insects typically have 360-degree vision and so we try to copy that by having a mirror near the camera to have that kind of 360-degree view," she says.

"The main reason we are interested in looking at them is because they have managed to do this kind of behavior such as navigation with very small brains, and if you compare that to self-driving cars, which has had very successful research now, but they depend on having very complicated, very detailed sensing, lots of information about the maps of the world that they are moving in and very high degrees of computing, and yet none of them are available to the insect but they still manage to get around very well," she says.

**Is it a bug, robot or cyborg?**

The material environment has always taken inspiration from insects and animals.

Biomimicry, as it is called, is an innovative approach to the design and production of materials, structures and systems modeled on biological entities.

Some examples can be seen in modern-day inventions such as the bullet train, inspired by the kingfisher, or wind turbines modeled after humpback whales, and the list goes on.

But an entrepreneur and multi-disciplinary artist in the United States has taken biomimicry to a whole new level.

Ever seen a cyborg-looking-beetle with machine-made parts looking like something out of a sci-fi film?

Well, Mike Libby, founder of Insect Lab Studio in Maine, incorporates this form of aesthetics to his contemporary designs.

He customizes preserved insect specimens with mechanical components, to create art that illustrates science-fiction.

His journey began when he found a dead beetle, dissected it and incorporated into it with watch parts and gears making it look like something out of a *Transformers* film.

"There are a lot of different things in science fiction and there are a lot of things in real science that create context for this type of work to develop," he tells FORBES AFRICA.

He collects beetles from licensed dealers all over the world, including Africa.

One of the beetles he has collected is the African flower beetle that feeds from the pollen and nectar of flowers. Its biological name is *Cetonidae/Eudicella Gralli Orientalis* and is 3.5 inches wide.

Libby customized this beetle with his own idea of an exoskeleton, giving it brass and steel parts, gears, a crown, springs, screws, watch jewel, pulley and belt.

Today, he sells these pieces for $500 to over $8,500 to clients all over the world.

"Just a couple of weeks ago, I sold a small beetle to a gentleman in France whose wife's birthday was coming up and I think that's where 50% to 60% of the gifts end up, as special gifts," he says.

He has also created art using crabs and lobsters.

If he can do this using dead bugs and broken technology, imagine what the next few years could be with moving AI, robotics and living insects?

Perhaps we are closer than we think to living in a world with one of the *Transformers*' contraptions next door.

**Africa's dung idea**

There are about 800 species of dung beetles in South Africa alone, and a wider variety of them on the rest of the continent.

With all this wealth of insects and diversity on our content, it is safe to say that Africa is at a higher advantage than most to develop technological solutions from the natural environment.

With AI and the fourth industrial revolution on the rise, Africa should have clear advantage to merge AI, robotics and insects.

Rosman believes the same.

"I think we have a lot of opportunity here. In the research space, we are always looking for what are the advantages of being in Africa. And I think one of the things we can think about is this kind of natural diversity," he says.

"The diversity of animals we have here is another big strength which can come into the way we think about machines doing intelligent things."

Therefore, for Africa to get ahead, ideally, we need to leapfrog into such technologies.

However, there are challenges.

"There's the technical challenges of how do we build these systems that can work in those kind of ways. Then there are questions around how it interacts with our politics, particularly the unemployment situation," Rosman says.

The big question, Rosman says is: "Should we be spending government money on building autonomous dung beetles?"

However, the plus side of such innovative tech is the potential it has to encourage young Africans to get involved in STEM (science, technology, engineering and math) fields.

It is important to educate and inform the masses on such trends and how it could enhance our daily lives.

As tech advances, it is possible that we will live in an autonomous world where we don't have to tell our tech what to do, it will already know what to do and when.

"That's the world we want to live in, that our technology helps us without us even having to think about it... and I think that's the kind of thing we could get more easily by studying how animals and insects interact in these kinds of ways," Rosman says.

Dung may be the currency for the beetle, but maybe the beetle can be the currency for our technology.

With the natural environment at our finger tips, Africa may just have the potential the world has never seen before, thanks to a small, unassuming, rotund insect with a steely resolve.



## THE POWER OF ROLLING STONES

In the 1960s, dung beetles from South Africa were introduced in Australia to help improve the quality and fertility of cattle and reduce the population of flies that feed off cattle dung.

The African dung beetle was also introduced in North and South America for the same reason.

Dung beetles assist with nutrient recycling, aeration, soil penetration and pest control.

"They are massively important in any agricultural economy," Byrne says, adding that the value of dung beetles is in the billions as they play a crucial role in natural and agricultural ecosystems.



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# THE ENTREPRENEUR EMPLOYEES



The economy is changing, and so also the way people work. A singular income is not enough, and employees are finding creative, lucrative ways to work for themselves beyond the nine-to-five.

BY GYPSEENIA LION

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A BEARDED MAN, WEARING a pin-striped grey duckbill cap, stands behind a bar counter.

To his right adorning the counter is an array of empty cylindrical canisters. To his left, a contrasting set-up presents glass bottles filled with a transparent, salmon pink liquid. Next to them are gin chalices filled with a cornucopia of berries that are to be served to connoisseurs of the popular spirit.

Queen Nandi Pink Gin and Zulu Dry Gin are experimentally infused spirits distilled by Gologo Spirits, a business venture that merges African tradition with a contemporary outlook on alcohol brewing.

Mzwandile Xaba, an accountant by day and distiller by night, is the founder of the experimental distillery.

Nine years ago, the entrepreneur and employee would not have imagined that a childhood pastime would one day become a secondary source of income.

At 5PM, when most South African corporates are closing off the business of the day, Xaba's two-hour journey to the warehouse begins, where he often spends hours losing himself in the craft.

Once the boiler goes on, it is down to work.

Cleaning distillation columns, labeling, bottling and blending various infusions until the odd hours of the morning, ironically, rarely feels tedious for the hustler who, in the next few hours, needs to make his way back to his assigned office cubicle.

How does an accountant from the East Rand, in the Gauteng province of South Africa, end up, not only distilling spirits for

**I WOULD ONLY QUIT MY DAY JOB ONCE IT STARTS COSTING ME MORE MONEY.**
– MZWANDILE XABA


Mzwandile Xaba


Xaba with an assistant at the Henley Business School Africa Side-Hustle event in July

commercial use, but juggling two jobs in industries that are worlds apart?

Growing up in a household with a father who pursued two careers; one in music and the other as a mechanic, influenced Xaba's work ethic.

Xaba, who was good at mathematics and accounting, pursued a career in the financial sector. However, his childhood preoccupation of distillation has remained with him through the various stages of transitioning into adulthood, and recognizing that he needed a stable income.

Brewing *umqombothi* (African beer), in time for the weekend traditional celebrations with his father, is what he owes the success of Gologo Spirits to.

Although the process of brewing and fermenting the African beer is predominantly done by women, without a matriarch in the household, the men used to distill the beer themselves.

Xaba says *umqombothi* distillation also taught him to recognize the various cultural environments and the greater role his practice played in ensuring the success of those events.

Xaba expands on the use of spirits in celebrations.

"You normally have those when you go to traditional ceremonies. At home, it is also used during *lobola* (traditional engagement) negotiations, and when young men come back from initiation school in the mountains. Spirits are used for different functions and purposes from a cultural point of view."

Xaba's fascination with biochemistry and spirits was unrelenting, so in 2010, while working as an accountant, he decided to teach himself the delicate balance of creating the drinks that were impactful to him.

Within three years, the first drops of alcohol were ready for commercial use.

"It was just something I wanted to do. I thought it was quite interesting and I was really passionate about it.

"I don't know why because I have never set foot in a physics or science class but I was drawn to it," he says.

He started with vodka, experimented with brandy and whiskey, and at a later stage he tried gin distillation.

"For the past five or six years, almost every day there is something that I am doing that is in line with Gologo. If I am not literally making something I am reading on up on something."

**Finding a balance**

Xaba views his side job as an enhancement rather than his primary source of income or a necessity.

"The day job is something I understand and something that I need to do in order to do what I want to do. It covers some of my operational costs. The business is something that I funded from my pocket.

"Some of the loans I have taken to set Gologo up are what I am paying off through Gologo," he says.

"As the projection is, there comes a point

Photosupplied; Photo by PeopleImages via Getty Images

> **THE WAY OF WORKING HAS CHANGED, PEOPLE WANT AUTONOMY AND FLEXIBILITY.**
> – DANA ARNOLDI

where I am really making money to expand the distillery and cover some of my personal costs. It is a blend of both, a blending and a calling and it is financially viable. Doing both, keeping the day job and operating Gologo as a side-hustle is probably one of the best decisions that I may have taken financially, and also in terms of testing myself."

When presented with the burden of choosing one job over the other, he is quite clear that financial stability is an imperative.

"I would only quit my day job once it starts costing me more money," Xaba states decidedly.

An online platform, *Hustle South Africa*, is an ongoing project managed by Dana, who is in marketing, and her husband, Justin Arnoldi, also the Head of Digital Transformation at Blue Turtle Technologies.

The Facebook page was created in response to the high unemployment rate in South Africa which currently is peaking at 29% in the second quarter of 2019.

According to StatsSA, this is the highest unemployment rate recorded since the first quarter of 2003, the number of unemployed citizens rose by 455,000 to 6.65 million.

A problem *Hustle South Africa* hopes to decrease with this challenge is by providing a platform for users to promote and acquire side-hustles. Through the platform, hustlers are able to upload the services or products they have on offer, whether it is through text, video or images.

"The way of working has changed, people want autonomy and flexibility. They do not necessarily want to be tied into one job; they want a couple of jobs so that they can do different things.

"We wanted to create a central platform where people can interact and sign up for side work relatively easy," Dana says.

*Hustle South Africa* defines the gig economy as a series of freelance or part-time work assignments.

On the platform, hustlers now can not only advertise their business, but build a public data-base. Is it safe?

"From a security perspective, we are going to have a checking system where people can put their ID number in and they will be checked for a criminal record; if they are a South African citizen; or if they can be employed," Dana says.

Credibility is built through references, and referrals.

This model has proven effective with Uber as they provide clients with a driver-rating system.

If Bryan Davey, a diesel mechanic and baker, chose to use the *Hustle South Africa* page to market his side job, he would not only receive the deserved exposure for his business but would also add to the database.

The self-taught baker, who has been a mechanic for seven years, decided to bake on the side to take his mind off the noise at the workshop.

Doing something completely different takes the pressure off when he is not at his nine-to-five as a power generation field technician at Cummins South Africa. The balance between the two is a tightrope walk for Davey.

"I do try and go straight home and start baking, hopefully if I have an order for the week. It does take a toll on you, I won't


Bryan Davey

**IT DOES TAKE A TOLL ON YOU, I WON'T LIE IT IS DIFFICULT.**
– BRYAN DAVEY

lie it is difficult but if you want to make something work, you will do it," he says.

"It does have an impact on your mental and physical health, but it also depends on how you are managing it, so if what you are doing is a form of stress-reliever for you, it will not impact you negatively but if you are doing it in a way where you just want income, it will affect you."

Davey, nonetheless, does both jobs with a smile.

Based on research published by Henley Business School Africa, nine of 10 people in Africa have taken on extra work to survive.

The South African study uses the Henley Business School UK in 2018 as a framework to explore local trends, which shows that 71.3% of the 1,158 respondents in their African network have side-hustles for additional income.

According to the study, the top three side-hustles in their South African networks are professional business services at 25. 7%, real estate at 20.1%; teaching, lecturing and tutoring at 13.3%.

The lowest three being providing building/DIY services, running a shop/ tuck-shop/food truck, and waiting/ bartending/ hosting.

Jon Foster-Pedley, Dean of Henley Business School Africa, says the demands for the highest three industries are caused by the job descriptions.

Side-hustling as a real estate agent would not require as much time and attention as a food truck. The time and effort required, according to respondents on the network, would demand them to learn a new skill, which would take up too much time.

"The bottom ones mean that you have to be good with your hands, they are skills-based.

"Running a shop or a tuck-shop, you need to adapt to a lot of the things which take a lot of your time.

"You need to do that with your hands, you can't scale waiting and bartending," he says.

With the top three, on the other hand, a hustler can employ other people to manage the operations of the business while focusing on their day job.

The economy is changing and so also the way people are making money.

Side-hustles can be as lucrative as the hustler wants it to be, but finding a balance on the tightrope, is the ultimate challenge.

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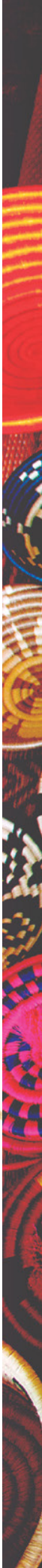
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# THE BASKETS HOLDING THEM TOGETHER

NOT FOR SALE

The female basket-weavers of Rwanda. When destiny failed them, they saw hope, in gentle strands of sisal and grass. The art helped them heal, reconcile and live again.

WORDS AND PHOTOGRAPHS: RENUKA METHIL





# 'ART AS A RECONCILIATORY TOOL'


The Kigali Convention Centre's design inspired by the traditional Rwandan baskets


Bella Rukwavu of the Agaseke Project

AS DUSK DESCENDS ON THE verdant valleys of Kigali, the green of the city's rolling hills and its red terraced homes relinquish their arresting appeal to the most sparkling jewel of the night – the landmark Kigali Convention Centre (KCC), easily one of Africa's brightest spots, with its multi-tiered colors and unique architectural aesthetic.

It is striking in contrast to the landscape around and occupies center-stage, both in the city as well as the psyche of the proud Rwandan. Resembling the traditional, intricate, hand-woven Agaseke basket, the KCC stands atop the hills as a symbol of hope in Rwanda, and as a beacon of a new Africa.

It's a sight most reassuring for the plethora of female artisans and entrepreneurs in the country. In villages and districts far from this dome in the city center, women sit huddled together in tiny cooperatives weaving with nimble fingers beautiful Agaseke baskets, in all forms, shapes and sizes, oblivious to the impact their creations have on the tourism economy – and more so, in their own lives.

Bella Rukwavu, Project Coordinator of the Agaseke Project, which was initiated by the City of Kigali in 2007, recounts the beginnings of some of these cooperatives, after the new government took over, post the horrific genocide against the Tutsi that left a million dead across the country.

"When the city was trying to reorganize itself, part of the problem was the streets were filled with women hawkers, prostitutes, the disabled and the sexually-abused," says Rukwavu.

There had to be a sustainable, lasting solution that gave the destitute women, most of them widows and survivors of the genocide, a viable alternative, and the idea for cooperatives training them with the art of basket-weaving was born.

The women had a natural flair for it, as basket-weaving was an inherent part of their upbringing and culture, so they could be easily skilled. The women were a mix of both ethnic groups, Tutsis and Hutus, and slowly, surely, through their collective efforts sewing sisal fiber and grass to make and sell objects of beauty, put their ugly past behind them.

The City of Kigali now oversees the Agaseke Project with 2,000 women, distributed among 50 cooperatives in three districts across Kigali.

"The project acted as a reconciliatory tool and promoted peace," says Rukwavu, in the car as we drive from the City Council to Gatsata sector in Gasabo district to meet with some of the artisans at the cooperative located there. "In some cases, both the victims of the genocide and the wives of the perpetrators worked together, and the art unified them. They have forgotten their differences. Today, they all live as Rwandans."

Past the thatched homes on the hillside, and up a muddy road, the red earth leads to a one-storied edifice with yellowing walls and blue windows. Here, a group of 25 women sit on the hard cement floor, indulging in light banter and expertly weaving dyed sisal, grass and papyrus reeds to create a raft of colorful basket containers. These are arranged on a wooden shelf and on frayed floor mats.

On the shelf are two wooden boxes with locks. This is where the women store their money as part of their self-styled loan-and-savings scheme; the boxes a repository of their collective earnings – and trust.

The cooperative receives orders from clients in the United States (US), Europe and Japan. The baskets have given the women economic security and a social network. Says Rukwavu: "Some of these women are doing so well and have become so successful they have come out of these cooperatives to start businesses of their own, making diversified products and selling them elsewhere."

The Agaseke Project is but one snapshot of the larger community of female basket-weavers in Rwanda. In the pages that follow, FORBES AFRICA visits more social enterprises, profiling the artists, artisans and entrepreneurs this industry has spawned. In a country where drones are delivering medical supplies and innovation is a daily buzzword, these women are keeping alive a traditional art form that has found its way into the snazzy department stores and boutiques of the world. To them, fortune is not dollar figures, but mere survival. Their future is in their own hands.

NOT FOR SALE

## THE SINGLE SURVIVOR
**Catherine Uwimana, 48**

In Gikondo, about a 30-minute drive from the city, a dirt road with a morass of overhead power and telephone cables leads to an unassuming grey gate with colors bursting within. These are the premises of Talking Through Art, a not-for-profit focused on art-related employment opportunities for people with physical disabilities. It was started by Petr Kočnar, from the Czech Republic, who initially came to Rwanda from Kenya to learn French. He encountered destitute people with disabilities on the street and decided to start the center in 2015 with his own savings, to rehabilitate them with art therapy and traditional basket-weaving.

Each of the 25 women, young and old, at this center make about $5 for each of the medium baskets they craft. Placide Ndacyayisenga, the manager, offers a cup of steaming Rwandan coffee, and pointing to the dainty handcrafted bowls on the walls, says: "The baskets we make are inspired by nature, such as the sun, the birds and the baobab trees. Foreign tourists buy from here and our products are also available in premium boutiques and gift shops in Kigali. The artisans here were wandering the streets before, now they can sustain their families, and even have bank accounts."

One such is Catherine Uwimana. She lost her right leg during the genocide, hit by a grenade when in hiding at her home in Kacyiru.

Save for her older sister, all her family died around her. Having never married, Uwimana lives alone and is grateful she makes enough money weaving baskets to feed herself and pay her rent. "I have been here four years now and this is my family," she says in Kinyarwanda, her eyes not concealing the pain of her past. "These baskets give me hope for the future."



> "THESE BASKETS GIVE ME HOPE FOR THE FUTURE.

## BASKETS TO THEATER
**Emilienne Muhawenimana, 35**

Muhawenimana arrives at the Talking Through Art center in Gikondo riding a scooter. It's hard to tell she is polio-afflicted and needs crutches to walk. Muhawenimana's nature-inspired paintings light up the walls here just as she does. She leans against one of them, posing genially for pictures. One of the most prolific basket-weavers at the center, she is today into stage plays, and even traveling outside of Rwanda as part of theater groups. "She was one of our best basket-weavers and is a good actress today," beams Placide Ndacyayisenga, the center's manager. The multi-talented Muhawenimana also recites poems and mentions her work with the British Council; one of the many empowered at the center to make a living through art.



> "SHE WAS ONE OF OUR BEST BASKET-WEAVERS AND IS A GOOD ACTRESS TODAY.

## THE 8-TO-5 WEAVER
**Vestine Nyiravesabimana, 49**




A mother of nine children, Nyiravesabimana has been weaving baskets at the Agaseke Project cooperative in Gazabo district for the last 12 years. Making an average of $5 per fruit bowl that she handcrafts, over time, she has been able to send her children to school. She makes a minimum of $100 a month, working 8AM to 5PM through the week.

She is vaguely aware her creations sell well locally, to NGOs and at retail shops, but also "far, far away", in America and Japan, lands she will perhaps never see.

Some of the women working with her face immense hurdles to come to work. But the project has helped Nyiravesabimana attain economic independence. Her husband, who works as a plumber, respects her more now, she says; they have fewer quarrels.

"She also knows how to bank," says Agaseke's project coordinator Rukwavu. "She has an independent bank account." Nyiravesabimana is also a part of the loan-and-savings scheme at the cooperative with her fellow female weavers. Working collaboratively in a group with the other women has helped her speed on the time-intensive art, as the more baskets she crafts, the more money she makes.

Dressed in a cheerful red *chitenge* outfit, her megawatt smile fills the small room she is in, as she gives the finishing touches to yet another signature fiber container that will make its way out of Africa to the world beyond.

## THE PEACE-MAKER
**Farida Umuhoza, 43**

A bored housewife for a long time until she discovered her skill crafting baskets, Umuhoza was with the Agaseke Project cooperative in Nyarugenge district for seven fruitful years from 2010.

A self-made entrepreneur today retailing her own range of handmade products, she is thankful for that epiphany, as today, she is the sole bread-winner for her family, supporting a sick husband and two children – a son aged 23 and a daughter aged 21.

We meet Umuhoza at her make-shift shop at the far-end of the car-free exhibition zone, by the towering citadels of capitalism in the heart of Kigali.

At the Agaseke cooperative, she shone with her expertise weaving baskets, quickly moving on to open her own permanent shop, named Chic, in a shopping mall in downtown Kigali. Umuhoza has been expanding her business since.

She also designs *chitenge* clothing, but her specialty is "the peace-maker, a sort of an oven made of fabric, sponge and cotton wool that saves energy and time and keeps food warm". She sells it from $20 to $40 a piece, depending on the size.

As we speak, she pauses to "hello and welcome" curious shoppers, mainly international tourists, who walk in to look at her collection of baskets, clothes, and African bric-à-brac. Her attentive son hovers around her, as she settles the deal with a woman bargaining for a wooden stool.

Her finances have been stable, she says, as she has been able to meet her husband's medical expenses, educate her children and re-stock her shop. She has traveled across East Africa, invited to showcase her baskets, and even once to the Netherlands for further training.

She has come a long way from her 18-year-old self when she lost her entire family in 1994, during the genocide against the Tutsi.

As the sun dips on this August evening, her shop gets busier with office commuters and government workers, her largest clientele.

She is grateful for every sunrise and sunset. "Back then, sitting under the hot sun, weaving them, the baskets taught me about life. I knew they would take me out of poverty. Dare to start, don't ever quit!" she says, before attending to yet another paying client.

> **SITTING UNDER THE HOT SUN, WEAVING THEM, THE BASKETS TAUGHT ME ABOUT LIFE.**



Farida Umuhoza worked hard to upskill herself as an entrepreneur diversifying from baskets to African apparel



> **I ENJOY BEING A PART OF A COMMUNITY, AND BUILDING IT.**
> – MUKESHIMANA GRACE

## THE COMMUNITY BUILDER
**Mukeshimana Grace, 52**

The Nyamirambo Women's Center, an NGO on a bustling street in Nyamirambo, is a hive of activity the afternoon we visit. The cooperative doubles as a charming shop retailing all kinds of delectable African print clothing, accessories, home decor and trinkets, and buzzes with dollar-waving foreign tourists. Grace is about to give a presentation on the art of basket-weaving to them when we meet her. She has been mastering the craft for over six years now and says she has had a life-long connection with weaving, having learned it at her mother's knee.

In an ante-room at the center, women are hard at work at their sewing machines. There are 55 seamstresses here turning cloth into craft.

The shop offers a sense of community and camaraderie as visitors stop by to chat to the staff. Launched in 2007 by 18 Rwandese women to address gender-based violence and inequality, today, the center provides skills and training to women so they can better their chances for employment. It's a self-sustaining model, also offering tours into the neighborhood. The profits from the tours go back into paying the seamstresses and funding more community engagement initiatives.

Mary Nyangoma, Project Manager at the center, who has been a part of it from inception, finds time to break away from the unending stream of clients. She says: "Sewing is very popular in this neighborhood. Some of the women with us never got a chance to go to school, so we also taught them to read and write. And we came up with the idea of the neighborhood tours. Six years ago, we also started selling the in-house products we make."

Nyangoma is effusive in her praise for Grace, who is too shy to speak. She was the first basket-weaver that joined the center and is now working full-time with them, making the baskets at home, and earning about RWF300,000 ($330) a month. A widow, she has four children to feed. Yet, there is no where she would rather be.

"I prefer working here, in a group," Grace opens up, "as when I am alone, I tend to think of my worries. I enjoy being a part of a community, and building it."



> **SOME OF THE WOMEN WITH US NEVER GOT A CHANCE TO GO TO SCHOOL, SO WE ALSO TAUGHT THEM TO READ AND WRITE.**
> – MARY NYANGOMA

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# THE FUTURE IN YOUR DNA

Genetic testing just might pave the path to personalized medicine and designer choices.

BY TIANA CLINE

NOT FOR SALE

GENES ARE THE BLUEPRINT for building a person. They're how we interpret what makes us different or the same. Human genetic data is being generated every single day. With more DNA sequences and genotypes becoming readily available, our understanding of genomic diversity is essential for both preventing and curing diseases.

Gene testing technology has also evolved. While older diagnostic machines could only analyse a single gene at a time, new technology can look at multiple, if not hundreds, of genes simultaneously using molecular engineering and precise biomarkers. Geneticists can now also perform whole "exome sequencing" – sequencing the complete DNA of an organism.

"We've been doing genetic testing for years. And obviously, genetic testing is important as it increases the scope of what you can do for clinical reasons – making diagnoses, predicting whether people are going to get conditions early or at all. It's important for prenatal testing, or even embryo-testing," explains Professor Amanda Krause, a medical geneticist and the head of human genetics at the National Health Laboratory Service (NHLS) and School of Pathology at the University of the Witwatersrand in Johannesburg, South Africa.

But genetic testing is no simple affair. Direct-to-home consumer tests (lifestyle genetic tests) are becoming increasingly popular. From spit tests that provide detailed – and sometimes questionable – ancestry results to cheek-swabs which tell you which diet will work best, plenty of new companies are popping up promising all manner of consumer-targeted DNA testing.

"It's not genuine genetic testing – diagnostic testing with high-predictive



value," explains Krause. "Direct-to-consumer genetics tests look at multifactorial polygenic conditions, so conditions where there isn't just one genetic fault which is causative, but rather a whole lot of them which are associated."

It's important to distinguish between single gene disorders, where one single error in your DNA is directly causative of a disease. A good example of this is Huntington's Disease where there is a particular genetic fault.

"If you have it, you will get Huntington's in your life. There is no risk. It's pretty much a certainty," says Krause.

Krause explains that these controversial, direct-to-consumer tests (in terms of genetic risk and what is being tested) may be accountable for only a few percentage points of a person's risk. Testing is relatively easy, but knowing what those results mean and how you should act upon them is not.

"The interpretation of negative results, probably more than positive results, is really important because you could end up falsely reassuring someone," adds Krause. "With cardiovascular disease, for example, the markers that are used in these direct-to-consumer tests maybe account for one or two percent of your risk – they make conclusions from small amounts of information and extrapolate hugely."

With a local lab built three years ago, Geneway offers local, cost-effective and non-invasive genetic testing for practitioners and patients. The company works with a number of trained professionals to interpret test results as well as with the University of Pretoria's pharmaceutical department which uses Geneway's lab to research genetics as it relates to HIV and TB drugs.

"Personalized genetic testing is not diagnostic," explains Dr Christa North, Geneway's operations and training manager.

"Genetic testing allows doctors to identify the strain of the virus a patient is carrying and predict which drugs it may be resistant to plus which drug then will match the patient's genetics. Modern approaches to tuberculosis treatment take into account not only the genes of the bacteria, but also variations in the patient's genes that may make them more likely to suffer side effects from certain drugs."

This type of genetic testing is called pharmacogenetics and it helps to determine what medication and dosage will be most effective and beneficial for a patient.

"Based on physiology and biochemistry, more and more package inserts of drugs contain information giving warnings about certain genes and the use of the medications. Drug companies incorporate genetic testing in their clinical trials and the Food and Drug



**GENETIC TESTING ALLOWS DOCTORS TO IDENTIFY THE STRAIN OF THE VIRUS A PATIENT IS CARRYING AND PREDICT WHICH DRUGS IT MAY BE RESISTANT TO PLUS, WHICH DRUG THEN WILL MATCH THE PATIENT'S GENETICS.**
– CHRISTA NORTH

Administration in the USA has recently published guidelines for that," says North.

Pharmacogenetics also play an interesting role in how insurance is changing too. Specialists in America, for example, are required to discuss and give their patients the option of genetic drug testing.

It is now an essential part of their personal liability insurance.

**MAPPING AFRICA**

According to a study published in *Science*

*Express*, Africans are more genetically diverse than the rest of the world combined. While gene variation is key for populations to thrive and survive in changing environments, there is a lot we do not know about Africa's overall genetic makeup because such a small part of it has been studied.

"Because there is so much diversity in Africa, and that diversity is so poorly studied at this point in time, interpretation of genetic variants is challenging," explains Krause.

"To know whether something is actually disease-causing or not, one of the ways to do it is to look at whether it occurs in the normal population. If you don't have data on what happens in the normal population, then it's really difficult to do."

One of the larger projects in Krause's department is researching the genetic causes of developmental delay in Africa. Primarily working with South African patients along with patients in the Democratic Republic of the Congo, Krause has found that there is a lot of baseline information missing – data which is needed to accurately interpret results.

"It's an area where we know very little, but one that is expanding dramatically," adds Krause. "From a genetics point of view, we don't know what the common conditions are when you try to work out what is a genetic variant that causes disease, versus what is a genetic variant that is just a normal variation. There are African-specific gene variants which are not in the standard tests so if you don't test for them, you're not going to find them, and you're not going to make intelligent comments and dosages on the basis of it."

Genetic testing may be getting broader, but blind-testing genes, without looking at genetics within the context of African-specific disease variations, is problematic.

"We're making more precise diagnoses for patients and increasingly there are therapies aimed at specific genetic faults. But you have to do the right test for the right patient and interpret results based on what you know which is population-specific, gene-specific and knowledge-specific," ends Krause.

**DESIGNER BABIES**

Our genetic makeup is predictive, so much so that a study in Sweden found that genes can influence the chances of someone becoming a dog-lover. Picking a puppy over another pet may have a heritable component, but understanding whether you're a carrier of a specific autosomal recessive disease – like cystic fibrosis, sickle cell anaemia, and Tay-Sachs – is crucial.

In Nigeria, for example, sickle cell disease (SCD) is a common hereditary blood disorder. So much so that Nigerians are turning to genetic testing to prevent couples who both carry the AS genotype for SCD from getting married and having children. Similarly, Ashkenazi Jews around the world undergo DNA testing to see if a couple is compatible, genetically speaking.

**NEXT BIOSCIENCES**

While we understand the likelihood (and ramifications) of carrying a baby with a preventable serious genetic disease today, what if you could wipe out genetic mutations from your family line forever? Next Biosciences, a biotech company based in Johannesburg, is taking reproductive health to the next level and looking into challenges like that.

"If there's a high likelihood of genetic disease, the parents can elect to do IVF. They can create embryos outside of themselves, in a lab, and we can test those embryos. Because each embryo carries genes from both parents, they're all different. We can test which ones don't carry the disease and the parents can then go select that embryo to implant," explains Kim Hulett, Next Biosciences' founder and CEO.

There are two types of tests which Next Biosciences perform on cells which are biopsied from embryos: Preimplantation Genetic Testing (PGT), which is a general test for chromosomal abnormalities, and then Preimplantation Genetic Testing – Aneuploidies (PGT-A), which tests early stage embryos, potentially improving pregnancy success rates and reducing miscarriages.



**IF THERE'S A HIGH LIKELIHOOD OF GENETIC DISEASE, THE PARENTS CAN ELECT TO DO IVF.**
– KIM HULETT

"With IVF, the lab chooses an embryo. It's luck. Some embryos are not good and you'll miscarry," says Hulett. "Specific testing can close the window. It also takes away the stress of miscarriage and other issues."

But where do you draw the line? According to Hulett, Next Biosciences can tell if a five-day old embryo is a boy or a girl, but sex selection is illegal in South Africa unless there is a medical issue.

"If you're going to select for disease, why can't you select for sex?" asks Hulett. "You've already created the embryos and we can tell you at five days that you have two potential girls and three boys sitting in the freezer. It's a slippery slope. So now you have these three potential boys and you can generate a photograph of what your child will look like at 18. Which boy will you choose?"

While the science is certainly evolving to that level, we just don't know yet exactly which genes contribute. In the future, however, genetic modification could be as easy as just making a choice.

"It's not designer babies, it's designer choice. The more you create, the more options you'll have. It's futuristic and right now we're asking if it's ethical. In the future, I promise you people are going to say 'is it ethical not to choose?' " ends Hulett.

NOT FOR SALE

Photos supplied; Photo by metamorworks via Getty Images




# 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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# PERSONALIZING CANCER

NOT FOR SALE

Eric Lefkofsky made it big with five startups – most famously Groupon – by harnessing data. Will it work for diseases?

BY NOAH KIRSCH AND MICHELA TINDERA

Photo by Jeff Sciortino for Forbes

ERIC LEFKOFSKY HASN'T taken a science class since college. But as he meanders through the Chicago lab of Tempus, his medical startup, he presents an air of expertise. "One thing you can see right off the bat is the purple staining of this cell," he says, pointing to the pathology slide of a patient with breast cancer. He walks past vials of lysis buffer and a $1 million genomic sequencer. "Tempus is attempting to bring the power of artificial intelligence to healthcare," he says. "The first step in all that is data."

Assembling data was the first step in Lefkofsky's other ventures. The 49-year-old has launched five companies worth at least $250 million apiece, each promising to transform an industry by using big data. His best-known venture is Groupon; despite the deals site's disappointing share price,

Lefkofsky is worth an estimated $2.7 billion.

Tempus is predicated on the theory that information, lots of it, will enable doctors to personalize cancer treatments and make them more effective. A doctor treating a patient with lung cancer might send a tumor sample to Tempus for genomic sequencing. Tempus identifies a mutation in the gene for epidermal growth factor receptor, which causes cells to grow and divide too much. With that, the doctor prescribes a targeted therapy that can have better results than chemotherapy.

So far the 700-employee company has raised $520 million (Lefkofsky put in $100 million). The lavish $3.1 billion valuation suggests investors expect his approach to make a big score, starting with cancer, then against chronic conditions like depression and diabetes. But precision medicine is a nascent field.

Tempus, on its own or with a research partner, has published fewer than 20 peer-reviewed manuscripts since its founding four years ago. A competitor, sequencing firm Foundation Medicine, has published over 400 in nine years.

While the cost of sequencing has dropped, it still runs $1,000 to $5,000 per analysis, and Tempus loses money doing it. Tempus also licenses its library of anonymized data to drug companies, insurers and researchers. Lefkofsky won't reveal revenues, but says it gets seven-figure fees from seven of the ten largest cancer drug companies.

Lefkofsky got the entrepreneurial bug at the University of Michigan, where he studied history and made money selling carpets. In 2001, he cofounded InnerWorkings (marketing), then Echo Global Logistics (transportation) and



**TEMPUS IS ATTEMPTING TO BRING THE POWER OF ARTIFICIAL INTELLIGENCE TO HEALTHCARE.**

Mediaocean (advertising software). One of Lefkofsky's hires, Andrew Mason, pitched an idea for a business focused on "collective action." Lefkofsky invested $1 million in what became Groupon. A year after its 2008 founding, it booked $14.5 million in revenue; in 2011, it generated $1.6 billion.

Lefkofsky spent a few years dabbling on other projects, including Uptake (predictive analytics for heavy industry). "I always knew back then, [with] those businesses, that I would be in and out," he says.

In 2014, Lefkofsky's wife, Liz, was diagnosed with breast cancer. "I was just perplexed at how little data had permeated her care," he says. That experience ultimately launched Tempus. (Liz has "been taking it one day at a time," Lefkofsky says.)

Yet again, Lefkofsky needed data. But some researchers were initially hesitant to share. "They wanted us to basically send all our samples there for all our patients" in the future, says John McPherson, deputy director of the UC Davis Comprehensive Cancer Center.

"But we took a more cautious approach." They ran a head-to-head comparison involving gastrointestinal cancer between Tempus and Foundation Medicine; Tempus fared well.

In 2017 Tempus reached a licensing agreement with the American Society of Clinical Oncology to extract and organize data from 1 million patient records. Today the company says it already works with 30% of U.S. oncologists; many send patient records and biopsies to Tempus for analysis.

Tempus hopes to sequence 120,000 genomic samples for doctors this year.

Even with that data, Tempus faces stiff competition. Last year Swiss drug giant Roche spent

$4.3 billion acquiring Foundation Medicine and big data firm Flatiron Health. Another startup,

Concerto HealthAI, backed by billionaire Romesh Wadhwani, has access to many of the same records as Tempus.

Doctors at UC Davis, McPherson says, have only sent about 100 samples to Tempus, considerably fewer than they've sent to Foundation.

"I think they were a little baffled by the amount of data that came back [from Tempus]," McPherson says. Clinicians "tend to take the easier route just to save time. But there are several clinicians that are now working fairly closely on the research side with them."

Lefkofsky remains supremely optimistic. "It certainly feels like my entire career has led to this point," he says. "I hope this will be my legacy project."

ME & MY MONEY

# ‘WOMEN ARE LESS ASSERTIVE’

Chartered accountant and CEO of accounting firm SkX Protiviti, Lindani Dhlamini, on the gender-pay gap, investing on a budget and why she believes in thrifty spending.

**WHAT HAVE YOUR RECENT BUSINESS VENTURES BEEN?**
SkX Protiviti was established through the merger of Sekela and Xabiso in 2012. This year, SkX became a member of Protiviti, a global consulting firm with more than 80 offices in over 25 countries.
The company, which provides auditing and advisory services, employs in excess of 200 people, has offices nationally in South Africa and is expanding its operations to the rest of the African continent through its recently launched arm, SkX Africa.

**HOW DO YOU TRANSLATE YOUR EXPERTISE INTO LEADERSHIP?**
Some of the attributes a leader needs to demonstrate are the ability to empathize and motivate the people they lead.
Increasingly, more women have taken on male-dominated roles.
Should this still be celebrated or should it be regarded a norm?
Women continue to be under-represented in boardrooms and the upper echelons of South African corporates. In fact, this is not a uniquely South African phenomena; it is a global phenomenon. We should, thus, do more than celebrate those women that have broken the glass ceiling. We should be intentional about finding ways of supporting more women to move up the corporate ladder. We should be intentional about removing all barriers, real and imaginary, that are still preventing women from climbing the corporate ladder.

**WHAT IS YOUR VIEW ON THE GENDER PAY-GAP?**
The gender pay-gap exists. There are gender biases that come into play in the determination of pay. In my experience, women are less assertive in negotiating their pay, assuming they will be acknowledged for the contribution they make. There is a tendency in business to demand women to prove their worth while men are rewarded for their potential. We need to be aware of these gender biases and deal with them.

**IT IS SAID ACCOUNTANTS ARE THRIFTY SPENDERS, DOES THIS APPLY TO YOU?**
As an accountant, I understand the value of money; consequently, I am very conscious of how I spend my money. When I see the value, I am not shy to spend.

**WHAT IS YOUR OWN INVESTMENT PHILOSOPHY?**
I only invest in assets that I understand.

**YOUR BIGGEST INVESTMENT BLUNDER YET, IF ANY?**
I invested in a lodge, and I lost money due to a lack of understanding of the hospitality industry.

**WHAT IS YOUR MOST PRIZED INVESTMENT AND WHY?**
SkX Protiviti. When I started the company, I wanted to start a business that would be able to sustain itself into the future. I wanted a business that could contribute meaningfully to alleviate our triple challenges in South Africa, namely inequality, poverty and unemployment.

**WHAT DO YOU SPEND YOUR MONEY ON MOSTLY?**
I spend it on my my children’s education, on household expenses and on investments.



**“THERE IS A TENDENCY IN BUSINESS TO DEMAND WOMEN TO PROVE THEIR WORTH WHILE MEN ARE REWARDED FOR THEIR POTENTIAL.**

**YOUR MOST RECENT EXPENSIVE ACQUISITION?**
A designer handbag.

*– Interviewed by Gypseenia Lion*

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# TALKING MONEY

Arese Ugwu drew from her own experiences to break down financial jargon for the everyday person.

BY PEACE HYDE

WHEN YOUNG, Arese Ugwu had no plans to become a writer. With both parents working in the financial services and investment world, Ugwu grew up in a house where people spoke openly about money.

"When we had money, we knew about it and when we didn't have a lot of money, we knew about it too, so I was born to realize that my privilege had to be earned every day," says the 34-year-old wealth coach and author of the best-selling entrepreneurship book, *The Smart Money Woman*.

Born in Lagos but educated at Aston Business School in the United Kingdom, Ugwu was on course to follow her parents' line of work in the financial services industry.

"Growing up, my dad talked about capital markets non-stop and I was one of the children who took an interest in that. After school, I worked in several banks and did internships during university so that was good experience. I even went to work for my dad for a while to learn the ropes."

As a teenager, she recollects having a keen interest in economics and international markets and she feels like the world of words had quietly been in place during that period but it was not until her marriage fell apart that her passion materialized.

"I was married and I had a daughter who was a year old and basically my marriage fell apart. I had to move out of my house and find another apartment and pay two years' rent upfront and it was an 'aha' moment for me because I thought I worked in financial services and I don't have the excuse of being a low-income earner so where did all my money go?" says Ugwu.

She began to think about other women like her who were smart and in interesting fields of work but had nobody offering them advice on how to manage their finances or creating financial content that appealed to them.

"All the content out there was saying things like 'don't do this and don't do that'; more like stuff that your parents would say. I wanted to start creating content that was interesting for a woman like me. So instead of saying 'save for a rainy day', I would say 'how do you start funding your goals'?"

Ugwu began to write a regular column for popular Nigerian blog, *Bella Naija*, which took a satirical look at life and society, her lens trained on financial matters and empowering women in similar situations as herself to become financially independent and prudent. Epiphany struck when one of her close friends advised Ugwu to pen a book.

"That is how *The Smart Money Woman: An African Girls' Journey To Financial Freedom* was born. I thought it sounded crazy but I started writing it and I loved business books and I feel like *The Smart Money Woman* is a mixture of both."

Ugwu believes her power is her ability to break down financial jargon for the everyday person.

"So financial institutions and banks have all these products they want to sell and they have all these savings and investments but it always comes across as boring and people are not that interested or they have the perception that it is difficult. I think I found a way to break down that jargon and make it easy for the everyday person to understand."

According to Ugwu, the book has sold over 10,000 copies in several African countries with a TV show based on the book currently in production. After the first book, she is currently working on a sequel about how women's friendship circles can influence their ability to earn money by sharing opportunities with each other and empowering each other to succeed. Smart moves.

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# WORKING TOGETHER TO HELP SOLVE AFRICA'S WATER CRISIS

RECIRCULATE, A £7M four year research programme fund by UK government.

Access to an adequate supply of clean, safe water for drinking and sanitation, and for irrigating crops is a problem for many people across Africa. That problem can become a crisis when changing weather patterns lead to the extreme droughts seen in several parts of the continent in recent years. Water supplies are also being compromised due to pollution, contamination due to poor sanitation facilities and disposal of waste.

RECIRCULATE, a £7M four year research programme funded by the UK government's Global Challenges Research Fund is working to find integrated solutions for a safe water economy through new ways of collaborative working between research, business, communities and policy makers.

Staff in Lancaster University, UK, the Council for Scientific and Industrial Research (CSIR) Ghana, Lancaster University Ghana and University of Benin, Nigeria, are working together to develop novel research that 'joins-up' across entrepreneurship, health and sanitation, resource recovery from waste and food security.

These different areas of research often proceed in isolation, but as RECIRCULATE's director Professor Nigel Paul explained "One of the founding principles of RECIRCULATE is that finding innovative solutions for a safe, circular water economy demands that we break down the barriers between research disciplines. But it is even more important that we also break down the barriers between research and those who use it, in business and the wider community".

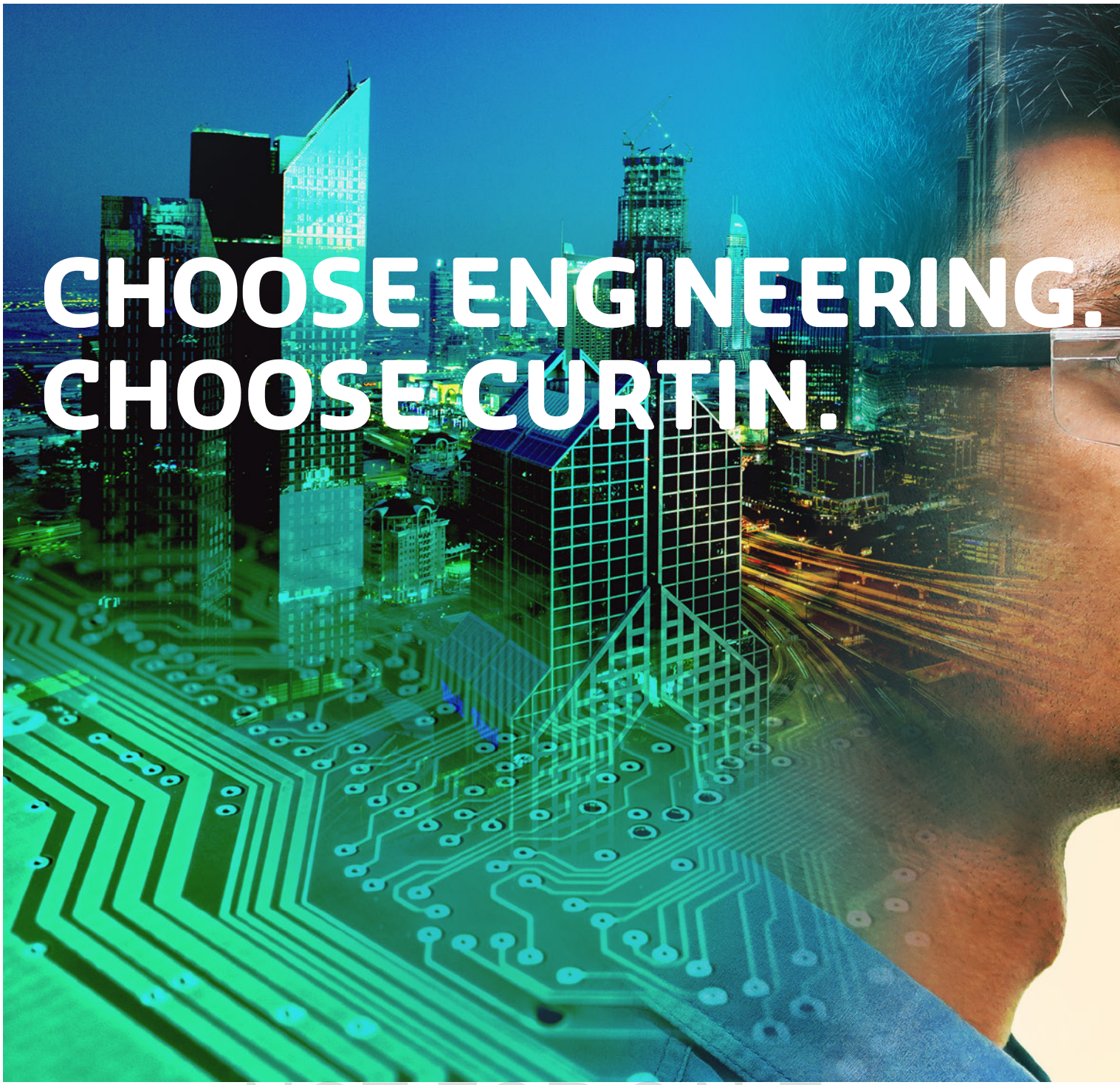
As the first step in breaking down those barriers, RECIRCULATE brought together almost 200 researchers and research users from business and the wider community, mostly from Nigeria and Ghana. Participants in the workshops clearly recognised the opportunities that emerge when people from different backgrounds and perspectives think about solutions to the water crisis in a joined-up way. Ernie Wulff, a lecturer at Lancaster University Ghana, noted that "... the RECIRCULATE workshops have really deepened my knowledge of the benefits of inter-disciplinary research and the immense potential for collaborative research on the African continent". Professor Lawrence Ezemonye, Project Lead at University of Benin added "It was fascinating to see the interactions between researchers and research users, especially as this was often the first time they had shared experiences in this way. It is a way of working we have now started to adopt back at University of Benin".

The workshops were also the stepping-stone for some participants to spend up to six weeks in residence at Lancaster's UK campus. Each residence allowed an individual to develop ideas, skills and roadmaps for change that emerged from workshops.

With the project's initial workshops and residences completed, and its research well underway, RECIRCULATE now enters its next phase. The lessons learned so far in Nigeria and Ghana are now being shared with the Botswana International University of Science and Technology, the African Technology Policy Studies Network (Kenya), the National Commission for Science and Technology (Malawi), and Copperbelt University (Zambia).

As Dr Kwadwo Ansong Asante from CSIR's Water Research Institute, explains " We know that there are no 'quick fixes' to the many challenges we face around Africa's water economy, but RECIRCULATE's model of leading researchers working with the research users who can deliver the practical solutions we need really could be transformative"

For more details about RECIRCULATE please visit **www.recirculate.global and https://twitter.com/RECIRCULATERS**




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# REGALIZED CANNABIS

By designing luxury marijuana products aimed at women, Beboe's Clement Kwan and Scott Campbell are riding high in the new green economy.

BY ZACK O'MALLEY GREENBURG

ON THE FIFTH floor of Barneys in Beverly Hills, past the racks of plaid $390 Burberry slides and spiky $1,995 Christian Louboutin sneakers, sits a tiny store-within-a-store called the High End. It might just be the fanciest head shop in the world.

Visitors are greeted by an array of marijuana products displayed on a marble-dust-and-quartz-crystal slab, all made by Beboe, a luxury cannabis brand launched two years ago. There's a box of seven prerolled joints for $60, a $25 tin of sativa pastilles and a special edition black-and-silver Barneys vape pen loaded with 120 puffs' worth of THC — for the high, high price of $60. Don't want to get stoned? There are also CBD-infused serum bottles and face masks.

"All our products are for a dinner party or cocktail party — and then how you recover from it," says Clement Kwan, the former



Vape Crusaders
Beboe cofounders Clement Kwan and Scott Campbell at the High End in Beverly Hills. They will soon partner with other premium cannabis brands.

Photo by Robert Gallagher for Forbes


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Dolce & Gabbana executive who founded Beboe alongside Los Angeles tattoo artist Scott Campbell, whose intricate line drawings adorn their products.

"We took that creativity and sent it out into the world, because ultimately this is like a Trojan Horse... people who shop at Barneys are like, 'I haven't smoked weed in a long time, but tell me more about *this*.'

As cannabis becomes legal across America — 11 states have adopted laws allowing for recreational use, while 22 others permit only medical marijuana — it's finally becoming the sprawling business its proponents have long envisioned. Last year the legal marijuana industry generated more than $10 billion in sales — and about 250,000 jobs — with some studies suggesting it could reach $26 billion in the next six years.

And that's where Beboe is perfectly positioned. At its High End boutique, for instance, a concierge takes your order and a delivery service drops it off anywhere in Los Angeles County. (The law still prohibits customers from walking out with a purchase.) Beboe also sells its wares in stores ranging from the popular MedMen dispensaries to Neiman Marcus.

As Beboe has grown, bigger players in the industry have taken note — particularly Green Thumb Industries, a publicly traded cannabis company with a $2 billion market cap. This year, GTI bought Beboe in an all-stock deal that closed in February. Terms were not disclosed, but industry insiders place the sale price at around $80 million, with annual revenues in the low millions; Beboe products are now available in 125 stores in California and Colorado, but with GTI's muscle, the brand will expand into other states this year.

"The way to win is to own the booze and not the bar," says GTI founder and CEO Ben Kovler.

"Beboe is an example of one of those branded, consumer packaged goods that develops an authentic, honest relation with the consumer."

Beboe's founders have also seen more than just the luxurious side of the cannabis green rush. Campbell, who is married to the actress Lake Bell, got his start at a tattoo parlor that sold drugs in the back, eventually working his way up to inking the likes of Robert Downey Jr. and Jennifer Aniston.

Meanwhile, Kwan, 42, put himself through the University of California, Berkeley, by growing — and peddling — pot before pivoting to a fashion career at Diesel and Net-a-Porter.

Campbell and Kwan met on an airplane in 2014 and discussed starting a cannabis farm. But they quickly realized that the path to profit — like in fashion — was about the *brand*. They named their startup after Campbell's maternal grandmother, Bernice Boe, who baked pot brownies to ease his mother's pain as she fought cancer throughout his childhood. The duo raised $1.7 million from friends and family, but when they launched their products in 2017 — with an aesthetic that calls to mind Hermès bags more than dime bags — dispensary operators didn't get it.

> **"PEOPLE WHO SHOP AT BARNEYS ARE LIKE, 'I HAVEN'T SMOKED WEED IN A LONG TIME, BUT TELL ME MORE ABOUT THIS.'**

"'I know this is crazy, but there are actually people who *aren't* trying to be stoned all day long,'" the 42-year-old Campbell remembers explaining. "It was an uphill battle at first, convincing people that less THC was actually more desirable to some consumers."

Campbell and Kwan responded by giving skeptics free samples. Inevitably, they'd come back for more, with a common refrain: "My wife loves that stuff." Beboe had established a rarified, Goopesque customer base — about 70% to 75% female. The senior team at Beboe is also composed of women (including CFO Carol Koh Evans, a Microsoft alumna), which helps the company better understand its female customer. "They have discerning taste and are health-conscious," says marketing vice president Kiana Anvaripour, "and they want a beautifully designed product."

To be sure, luxury green isn't guaranteed to turn into gold: The specter of federal intervention still looms — especially under the current administration. But Campbell and Kwan don't expect the industry to go to pot. By receiving equity in GTI, they have an incentive to keep doing what they do best as cannabis becomes both legal and more socially acceptable. "What's exciting about deregulation of weed is not making it easier for stoners to get stoned," Campbell says, "but bringing new people to it."




Dandy Candy
Beboe's pastilles contain only 5mg of THC and 3mg of CBD, which is not psychoactive and blocks some of the high.

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Forbes AFRICA TV



# MY WORST DAY

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# IT'S TIME FOR AFRICA'S GAZELLES TO SHINE

BY ELSIE KANZA

AFRICA HAS MANY REASONS to be optimistic; this year has seen a raft of new elections, economies are growing in amid an uncertain economic climate and new measures such as the African Continental Free Trade Agreement promise new solutions to the age-old problem of Africa's economic integration.

The recent decision of US investment bank Goldman Sachs to apply for a South Africa banking licence, and the effects of US and Chinese e-commerce giants to develop footholds in African markets, are just two examples in 2019 of how attractive the region has become for those with skill, knowledge and patience.

Much is made of Africa's population being the youngest in the world. Undoubtedly, this poses challenges, most specifically, in terms of finding gainful employment and decent livelihoods for a growing number of people.

During my time at the World Economic Forum, my impression of the continent's youth has been overwhelmingly positive, a mixture of awe at the entrepreneurial spirit and inspiration at the determination felt by younger generations to overcome long-standing barriers and collaborate across cities, countries and ethnic lines to forge a better future.

Add the fourth industrial revolution into the mix and the picture starts to look interesting. Success in this new age of economic development is by no means assured: barriers to entry can be considerable and investment in new technologies – not just development but equally importantly implementation – inevitably brings failure as well as success.

While none of these risks must be discounted, the next phase of humanity's growth and development will be built on entrepreneurial talent and this Africa has in rich abundance.

Since its launch in 2007, M-Pesa, the mobile payments system developed initially for the Kenyan and Ugandan telecommunications market, has served as a symbol for African innovation and ability to leapfrog generations of technology. Twelve years on, the system is providing benefits to investors and consumers across the emerging world but it is by no means alone. This year's billion-dollar listing of home-grown e-commerce giant Jumia is only the latest success in Africa's burgeoning technology landscape.

With this in mind, the question I find myself asking more and more these days is not 'how do we identify Africa's next entrepreneurial superstars', but 'how do we help Africa's entrepreneurial superstars scale up and fulfil their potential?'

While private investors, corporate intrapreneurs, foundations, development agencies and governments have all played an active role in helping get the region's best and brightest entrepreneurial talents, the priority now is to help this new generation of wealth creators and employers reach a critical mass of scale so they can compete across borders and employ the kinds of numbers that will help provide livelihoods for a growing workforce.

How do we do this? For one thing, it will require action on the part of government. There are a number of ways governments can improve the enabling environment just by drawing on existing best practices across the region.

Reforms such as cutting red tape and making it easier to start a business: too often, it takes weeks where it should be days or even hours. Other successful 'quick win' policy innovations include offering tax breaks and concessions on labor laws for businesses




whose revenues or workforces are below a certain size. Shielding businesses from the harshest challenges of the open market during their formative years would be beneficial to governments in terms of value once they are able to stand on their own two feet.

Building a platform for Africa's *gazelles*, high-growth companies capable of sustaining high rates of year-on-year growth, will be a key aim of the World Economic Forum on Africa 2019.

Africa's future lies in increased integration and interaction within its own borders as well as overseas.

Just as the gazelle is an iconic form on the African landscape, Africa's own tech gazelles need to define their own identity in the fourth industrial revolution.

*– The writer is Head of Africa at the World Economic Forum.*

Photo credit should read GULSHAN KHAN/AFP/Getty Images; Photo supplied

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# ROADMAP FOR AFRICAN STARTUPS

Francois Bonnici, Head of the Schwab Foundation for Social Entrepreneurship, explains how African impact entrepreneurs will continue to rise.

**Does impact investment favor expats over African entrepreneurs? If so, how can it be fixed?**

There is a growing recognition all over the world that investment is not a fully objective process, and is biased by the homogeneity of investors, networks and distant locations.

A Village Capital Report cited that 90% of investment in digital financial services and financial inclusion in East Africa in 2015-2016 went to a small group of expatriate-founded businesses, with 80% of disclosed funds emanating from foreign investors.

In a similar trend recognized in the US over the last decade, reports that only 3% of startup capital went to minority and women entrepreneurs has triggered the rise of new funds focused on gender and minority-lensed investing.

There has been an explosion of African startups all over the continent, and investors are missing out by looking for the same business models that work in Silicon Valley being run by people who can speak and act like them.

In South Africa, empowerment funds and alternative debt fund structures are dedicated to investing in African businesses, but local capital in other African countries may not also be labelled or considered impact investing, but they do still invest in job creation and provision of vital services.

There is still, however, a several billion-dollar financing gap of risk capital in particular, which local capital needs to play a significant part in filling. And of course, African impact entrepreneurs will continue to rise and engage investors convincingly of the growing and unique opportunities on the continent.

**What are the most exciting areas for impact investing and social entrepreneurship today?**

After several decades of emergence, the most exciting areas are the explosion of new products, vehicles and structures along with the mainstreaming of impact investment into traditional entities like banks, asset managers and pension funds who are using the impact lens and, more importantly, starting to measure the impact.

At the same time, we're seeing an emergence of partnership models, policies and an ecosystem of support for the work of social entrepreneurs, who've been operating with insufficient capital and blockages in regulation for decades.

The 2019 OECD report on Social Impact Investment mapped the presence of 590 social impact investment policies in 45 countries over the last decade, but also raises the concern of the risk of 'impact washing' without clear definitions, data and impact measurement practices.

In Africa, we are also seeing National Advisory Boards for Impact Investing emerge in South Africa and social economy policies white papers being developed; all good news for social entrepreneurs.

**What role does technology play in enabling impact investing and social entrepreneurship?**

The role of technologies from the mobile phone to cloud services, blockchain, and artificial intelligence is vast in their



application to enhancing social impact, improving the efficiency, transparency and trust as we leapfrog old infrastructures and create digital systems that people in underserved communities can now access and control.

From Sproxil (addressing pirated medicines and goods), to Zipline (drones delivering life-saving donor blood to remote areas of Rwanda) to Silulo Ulutho Technologies (digitally empowering women and youth), exciting new ways of addressing inclusion, education and health are possible, and applications are being used in many other areas such as land rights, financial literacy etc.

While we have seen a great mobile penetration, much of Africa still suffers from high data costs, and insufficient investment in education and capacity to lead in areas of the fourth industrial revolution, with the risk that these technologies could negatively impact communities and further drive inequality.

*-Interviewed by Unathi Sholoqu*

# REDUCING CORRUPTION THROUGH DIGITIZATION

It may seem the problems Africa grapples with are insurmountable, however, Arancha González, Executive Director of International Trade Centre, is of the view data proves the continent is making great strides in solving challenges through uplifting communities.



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**According to the World Economic Forum (WEF), one in four Africans had to pay a bribe to access public services, such as life-saving medicine and official documents like passports and driver's licences last year. How do gatherings like WEF help mitigate these challenges?**

Forums such as the WEF provide a meeting place for policy-makers, academics and business representatives to come together and explore solutions to shared challenges. It places a particular focus on economic issues, including the lack of accountability.

Corruption remains a problem all over the world and Africa is no exception. When one looks at Transparency International's Corruption Perceptions Index (CPI), it is clear that there is still much work to do, including with some of the countries in Africa that rank low on the list when compared to the rest of the world.

We have to recognize the ongoing efforts across the continent to tackle this issue, by governments and through collaborative efforts at the level of the African Union (AU).

Addressing issues of corruption involve education and the creation of a culture of transparency and accountability. The ongoing digital revolution also provides an opportunity. Technology and automation can remove the potential for corruption to occur. By digitalization processes, such as in trade facilitation, there is less person-to-person contact and more visibility of the various activities.

**Why is it that thousands of Africans still risk life and limb migrating in dangerous conditions to access better opportunities?**

In my view, there are three reasons why Africans migrate. One is conflict, of which there are still several around the continent. The second is dwindling resources, which is becoming more acute with climate change. And the third is aspiration, which is perhaps the

Photo by ITC: Copyright 2013 International Trade Centre (ITC); Photo via Getty



main driver of migration. It's important not to confuse the latter with desperation. What migrants are often looking for is a way to find a job, earn wages and care for their families – as well as their societies.

Africa's population is rising fast. But with more than 10 million youth entering the workforce every year, and only three million jobs created, a huge lost generation is at risk of being created. And to create more jobs, the right environments for businesses to grow, innovate and invest must be built, and young people must be provided the requisite skills and education that match the needs of the job market.

The Mo Ibrahim Forum Report finds that Côte d'Ivoire, which receives the second-largest share of migrants on the continent, realized an estimated contribution of 19% to its local GDP from migrants. Rwanda, the most welcoming country to migrants on the continent, saw a 13% contribution to its GDP. In this context, it might be more correct to talk about "mobility" rather than migration.

**Why does impact investment favour expatriates over African entrepreneurs? How can it be fixed?**

What I have seen across Africa is that it is a continent bursting with entrepreneurs. And while some of these entrepreneurs succeed in attracting funding and growing their businesses, it is true that most do not.

Similarly, I've met many investors who actually want to invest in Africa but do not have adequate information to make well-informed investment decisions. Why? Because there is a perceived high risk of investing in Africa, although these risks are often complemented with high returns.

The ITC SheTrades Invest project connects investors and women entrepreneurs across Africa. We offer technical assistance and work with investors to strengthen the financial and managerial capacity of women entrepreneurs and make them and their enterprises investment-ready. While not all will succeed in securing funding – or even keeping their businesses going – some of them will succeed. This is not exceptional for Africa: across the world, more than 50% of businesses fail in the first four years.

**Please provide an overview of institutional integrity on the continent and how it can be strengthened?**

Many African countries are currently implementing several reform initiatives. These include institutional and policy reforms, and the adoption of new guidelines for good corporate governance to ensure transparency and accountability of institutions.

A good example is Rwanda. In a recent World Bank survey, 87% of Rwandan businesses rated the country's court system as fair, impartial and uncorrupted, almost double the average reading in sub-Saharan Africa.

In fact, according to Transparency International's Corruption Perceptions Index, Rwanda is less corrupt than major emerging economies India and China or the developed European economies of Greece and Italy.

Rwanda's second strength is the implementation of free-market reforms. During the last three years, the government has improved corporate access to credit, and made it easier for businesses to pay taxes and get electricity and cut red tape.

The government has made an ambitious push to develop the nation's information and communications technology infrastructure. Land purchases, passport applications, building permits and birth certificates can all be dealt with online.

Many African countries are also implementing security-sector reforms to ensure political stability and a more stable environment for businesses to operate, which is likely to attract foreign investors.

*- Interviewed by Unathi Sologu*

# 'AI IS A POWERFUL TOOL'

Research forecasts that by 2025, machines will perform more current work tasks than humans. Murat Sonmez, member of the managing board, and Head of the Centre for the WEF Fourth Industrial Revolution Network, expands on the role humans might play.

**The Fourth Industrial Revolution (4IR) is at the center of the current economic frontier. In reality, is Africa prepared for such changes?**

Moving quickly and being agile are key principles of success in the 4IR. Any country can succeed if they take on this mindset. A few years ago, Rwanda saw the opportunities drones, a 4IR technology, brought to their country.

They helped save over 800 lives by delivering blood to remote villages. To scale this, the government worked with the World Economic Forum's (WEF) drones' team to create the world's first agile airspace regulation. Now, we see countries in Africa and around the world looking to the Rwandan model.

**What feasible solutions can artificial intelligence (AI) offer in terms of forecasting natural disasters, droughts food security on the African continent?**

AI can help predict diseases, increase agriculture yields and help first responders. It is a powerful tool for governments and businesses, but it needs a lot of data to be effective. For AI to be all that it can be, countries and companies need to work together to build frameworks for better management and protection of our data and ensure that it is shared and not stored in silos. Data is the oxygen of the (4IR). If countries do not leverage data and have their policies in place, they will be left behind.

**There is a growing concern that the 4IR will strip people of jobs, of which there is already a shortage. How true is this?**

The world is going through a workplace revolution that will bring a seismic shift in the way humans work alongside machines and algorithms.

Latest research from the WEF forecasts that by 2025, machines will perform more current work tasks than humans, compared to 71% being performed by humans today.

The rapid evolution of machines and algorithms in the workplace could create 133 million new roles in place of 75 million that will be displaced between now and 2022.

**Consumers have real concerns around the potential harm technology can cause in areas such as privacy, misinformation, surveillance, job loss, environmental damage and increased inequality. What ethical precautions are being considered in the robotics space?**

Now more than ever, it is important to incorporate ethics into the design, deployment and use of emerging technology. Innovating in the 4IR requires addressing concerns around privacy and data ownership, while attracting the skills and forward-looking thinkers of the future.

There are big challenges and bigger opportunities ahead. We have seen many companies and countries create ethical and human rights-based frameworks. What's important is they are co-designed with members of both communities along with academia, civil society and start-ups.

A multi-stakeholder approach will result in a more holistic set of guidelines and principles that can be adopted in many different industries and geographies.



Photo supplied

**What changes need to take place for the African continent to be on par with global developments, and are there tangible goals set?**

The 4IR provides governments the opportunity to be global leaders in shaping the next 20 to 30 years of science and technology. It is important they create an environment where companies can innovate.

The other tenet is to be open to working across borders and learning from each other. The global health industry has access to mountains of data on rare diseases, but it is trapped within countries and sometimes even within the hospital walls.

If we can build trust and find innovative ways to share the data while protecting privacy, we can employ tools like AI to help us cure disease faster. Countries and companies need to have the right governance frameworks and mechanisms in place for these breakthroughs to happen. It is possible to do these things now, but we need to work together to make it happen.

*-Interviewed by Unathi Sologu*

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# SLIKOUR'S MEXICO

The South African hip-hop artist and entrepreneur experienced a hurricane and a seismic spiritual shift in the city of Cancun.

BY MOTLABANA MONNAKGOTLA

"It has been a journey, a lot to learn and a lot learned," says Siyabonga Metane, popularly known on South African hip-hop stages as 'Slikour'.

The learnings have been in music and business, but the journeys have been beyond both.

Just two years post South Africa's democratic elections in 1994, Slikour was part of a rap group named Skwatta Kamp, formed on the streets of the country's Gauteng province, with the aim of commercializing the local hip-hop scene.

The group consisted of seven members and most of them went on to release solo albums. Slikour released two, *Ventilation Mix Tape Vol.1* and *2*, in 2005 and 2007. Long before that, in 2002, Slikour had turned entrepreneur, co-founding Buttabing Entertainment, a record label and artist management organization.

Today, he is also the founder of *SlikourOnLife*, a prominent urban culture online publication that he started in 2014 catering to music lovers.

Returning to the word 'journey', it especially sparks memories of a trip he undertook in 2011 to Cancun, a Mexican city on the Yucatán Peninsula bordering the Caribbean Sea, known for its beaches, resorts and nightlife. Slikour was there for a television shoot as part of a group. The trip still stands out in his mind.

He was not blown away by the city initially, but as he visited some of

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Cancun's tourism attractions, he began to change his perception.

Ultimately, it proved to be what he calls an amazing rendezvous.

"The people were pretty much speaking Spanish," he chuckles, recalling being immersed in the local culture.

"There are a lot of laborers there and the people are beautiful and accommodating, but we never really spoke or interacted with the community."

Slikour decided to savor the city's famed nightlife instead and see for himself what all the hype was about.

It all began and ended with tequila, a distilled alcoholic drink and one of Mexico's most famous exports, made of the blue agave plant from the city of Tequila in Mexico.

"Everything you do there is done with tequila. I don't drink alcohol, but I had to accept and apply myself because there, they don't use tomato sauce, they use tequila; I literally had to get into the tequila swag; it's everything there. Tequila started there," Slikour says.



Siyabonga 'Slikour' Metane



**"EVERYTHING YOU DO THERE IS DONE WITH TEQUILA. I DON'T DRINK ALCOHOL, BUT I HAD TO ACCEPT AND APPLY MYSELF BECAUSE THERE... I LITERALLY HAD TO GET INTO THE TEQUILA SWAG; IT'S EVERYTHING THERE.**

Mexico is known for its recurring hurricanes too, which Slikour also got a taste of while there.

"After a few days of getting there, we were warned of a hurricane, and asked to close our doors and windows, and because these things happen regularly, there's a drill to follow. The hurricane wasn't a major one but I was excited because I wanted to see it. I had to look through the window," he says.

The hurricanes are so frequent in Mexico that he likens the precautions taken to lighting a candle during South Africa's frequent power cuts.

Despite this exhilarating encounter with nature, the real earth-shaking experience for him, however, happened deep inside a cave in the city of Cancun – and also deep inside him.

"My spiritual [epiphany] was when I went into those caves. You go in there with your self-assurance, claiming you understand everything. Thereon, they tell you where everything comes from and all of a sudden, you become this very small thing in this big ecosystem. It just shows how everything affects everything," Slikour says.

The tour guides explained how everything inside the cave came from rain, elaborating how it was connected to the core of the earth; which is where they were at the time.

Slikour was in Cancun for two weeks, and also visited the pyramids.

"The Mexicans didn't have all the mathematics that we have now but the pyramids were built to perfection. It just showed you how forward-thinking they were and how behind we are in as much as we think we are forward; we just have technology. We don't think the way historic societies used to think," says Slikour, in deep reflection.

Mexico is a place he would return to, anyday, in a heartbeat.

Photo supplied; Photos via Getty Images



# NO SEAT AT THE GLOBAL TABLE FOR INDIGENOUS CUISINE

NOT FOR SALE

Gastronomic tourism based on African food could easily increase and create new value chains that unlock billions in untapped wealth for the continent, but what is stopping us?

BY UNATHI SHOLOGU



An assortment of traditional West African dishes including peanut soup, jollof rice, grilled chicken wings, dry fried plantain, Nigerian chicken kebabs and meat pies

FOOD AND TOURISM are an integral part of most economies, globally. Food is undeniably a core part of all cultures and an increasingly important attraction for tourists. To satisfy their wanderlust, contemporary tourists require an array of experiences that include elements of education, entertainment, picturesque scenery and culinary wonders. The link between food and tourism allows destinations to develop local economies; and food experiences help to brand and market them, as well as supporting the local culture and knowledge systems.

This is particularly important for rural communities, where 61% of sub-Saharan Africans live, according to the World Bank last year. These communities have often felt the brunt of urbanization, which has resulted in a shift away from rural economies. If implemented effectively, Africa could get a piece of the gastronomic tourism pie, which was worth $8.8 trillion last year, according to the World Travel & Tourism Council.

However, there is currently very little public information to pique the interest of tourists about African food. World-renowned South African chef Nompumelelo Mqwebu sought to remedy this with her self-published cookbook, *Through the Eyes Of An African Chef.*

"I think where it was very clear to me that I needed to do something was when I went to cooking school. I trained at Christina Martin School of Food and Wine. I thought I was actually going to get training on South African food and, somehow, I assumed we were talking indigenous food.

"I was shocked that we went through the whole year's curriculum and we didn't cover anything that I ate at home; we didn't cover anything that my first cousins, who are Sotho, ate in Nelspruit (in South Africa's Mpumalanga Province); we didn't cover anything that would come from eSwatini, which is where my mother is from," Mqwebu says.

By self-publishing, she has ultimately contributed to a value chain that has linked local food producers and suppliers, which includes agriculture, food production, country branding and cultural and creative industries.

"I am a member of Proudly South African, not only my business, but the book as well. Part of the reason is that the cookbook was 100% published in South Africa. So, everybody who worked on the cookbook, and printing, was all in South Africa, which is something quite rare these days because authors have their books published abroad."

The Proudly South African campaign is a South African 'buy local' initiative that sells her cookbook on their online platform as its production adheres to the initiative's campaign standards. Self-publishing has allowed Mqwebu to promote her book for two years and to directly communicate with her audience in a way she thought was best, while exposing her to a vast community of local networks. She recalls her first step towards creating her own body of work.




**"I WAS SHOCKED THAT WE WENT THROUGH THE WHOLE YEAR'S CURRICULUM AND WE DIDN'T COVER ANYTHING THAT I ATE AT HOME.**
– NOMPUMELELO MQWEBU

"I was in culinary school when I wrote the recipe for *amadumbe* (potato of the tropics) gnocchi. We were making gnocchi and I thought, 'so why aren't we using *amadumbe* because it's a starch?' and when I tasted it, I thought, 'this could definitely work'. I started doing my recipes then.

"And there was talk about, 'we don't have desserts as Africans'. I did some research and found we ate berries, we were never big on sugar to begin with. That's why I took the same *isidudu* (soft porridge made from ground corn) with pumpkin that my grandmother used to make and that became my dessert. "I also found that when I went to libraries looking for indigenous recipes, I couldn't really find something that spoke to me as a chef. I found content that looked like history books. It was not appealing. It was not something, as a chef, I could proudly present to another chef from a different part of

NOT FOR SALE

the world, so I knew I had to write my book," Mqwebu says about the award-winning recipe book that chronicles African cuisine.

**Financial and health benefits**

According to the World Travel & Tourism Council, in 2018, the tourism sector "contributed 319 million jobs, representing one in 10 of all jobs globally and is responsible for one in five of all new jobs created in the world over the last five years. It has increased its share of leisure spending to 78.5%, meaning 21.5% of spending was on business."

To narrow in on how lucrative food can be, the World Food Travel Association estimates that visitors spend approximately 25% of their travel budget on food and beverages. The figure can get as high as 35% in expensive destinations, and as low as 15% in more affordable destinations. "Confirmed food lovers also spend a bit more than the average of 25% spent by travelers in general."

However, there is a widely-held view that the African continent is not doing enough to maximize its potential to also position itself as a gastronomic tourism destination, using its unique edge of indigenous knowledge systems (IKS).

"We are not a culinary destination and we will never be while we are still offering pasta as the attraction for our tourists," Mqwebu says.

Dr George Sedupane, who is the Coordinator of the Bachelor of the Indigenous Knowledge Systems program in South Africa's North-West University, echoes Mqwebu's sentiments.

"I often cringe when I go to conferences and there are guests from all over the world and we serve them pasta. Why would they come from Brazil to eat pasta here? They can have pasta in Italy. Why don't we serve them *umngqusho* (samp and beans)?

"We need to be creating those experiences around our culture. We are failing to capitalize on our strengths. There is a lack of drive to celebrate what we have," says Sedupane, who also teaches modules and supervises research in indigenous health and nutrition.

Writer and historian Sibusiso Mnyanda says current innovations in African food technology are born out of necessity, rather tourism and cultural ambitions.

"Food security is becoming an issue that is leading to IKS around farming being

**THE WORLD FOOD TRAVEL ASSOCIATION ESTIMATES THAT VISITORS SPEND APPROXIMATELY 25% OF THEIR TRAVEL BUDGET ON FOOD AND BEVERAGES.**



*Amadumbe* salad, gnocchi and ostrich fillet prepared by Mqwebu



*Isijingi* pumpkin pudding



**I OFTEN CRINGE WHEN I GO TO CONFERENCES AND THERE ARE GUESTS FROM ALL OVER THE WORLD AND WE SERVE THEM PASTA. WHY WOULD THEY COME FROM BRAZIL TO EAT PASTA HERE? THEY CAN HAVE PASTA IN ITALY. WHY DON'T WE SERVE THEM *UMNGQUSHO* (SAMP AND BEANS)?**
– DR GEORGE SEDUPANE

prioritized. In Nigeria, they are innovating dry season farming, because of deforestation and soil being de-cultivated.

"So those indigenous knowledge strategies are being used in countries where it is a necessity and where there are enough advances related to the fourth industrial revolution. The traditional ways of producing food are not only much more organic, they are also crop-efficient," Mnyanda says.

Nigeria may have inadvertently innovated a health solution related to colon cancer through its diet. Sedupane tells FORBES AFRICA an anecdote.

"There was a study where the colons of an African country that did not consume a lot of meat was compared to Europeans. The Africans had a much better profile as a result and there are people who want to buy African stool to get that kind of rich bacteria, that you get on an African plant-based diet."

The study Sedupane is referring to was conducted in Nigeria and it states that: "Nigeria showed the average annual incidence of colorectal cancer was 27 patients per year. This shows that even if it seems that incidence rates are increasing in Nigeria, such rates are still about one-tenth of what is seen in the truly developed countries."

In a bid to find reasons for this rarity of colon and rectal cancer, the study concluded that, among other reasons, the protective effects of Nigeria's starch-based, vegetable-based, fruit-based, and spicy, peppery diet, and geographical location which ensures sunshine all year round, played a role in the country's colon health.

Interestingly, it seems the potential value of African food could not only be based on what goes in but what also comes out as healthy faecal matter is big business globally. In 2015, *The Washington Post* published that one could potentially earn $13,000 a year selling their poop.

The American-based company OpenBiome has been processing and shipping frozen stool to patients who are very sick with infections of a bacteria called C.difficile. It causes diarrhea and inflammation of the colon, leaving some sufferers house-bound. "Antibiotics often help, but sometimes, the bacteria rears back as soon as treatment stops. By introducing healthy faecal matter into the gut of a patient (by way of endoscopy, nasal tubes, or swallowed capsules), doctors can abolish C. difficile for good... And yes, they pay for healthy poop: $40 a sample, with a $50 bonus if you come in five days a week. That's $250 for a week of donations, or $13,000 a year," the publication stated.

Sedupane is of the view that a diet which includes indigenous foods could vastly improve one's quality of life.

He says small changes could be made, such as including more of indigenous greens, namely sorghum and millet, to breakfast. The grains are gluten-free and produce alkaline which boosts the pH level of fluids in the body and reduces acidity.

"Moving to our legumes, we have *indlubu* (Bambara groundnut) which is very rich and helps in the secretion of serotonin in the brain. This so important nowadays with the increase of depression. It's easy to digest, and is great



Bambara groundnut is very rich and helps in the secretion of serotonin in the brain

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for cholesterol and moderating blood sugar," Sedupane says.

Mnyanda is also of the view that food is imperative to health and medicinal properties. He says traditional healers primarily use natural herbs in their practice. "These are used in pain relief and healing. Things like cannabis, camphor, African potatao and red carrots. So, food is not just used for nutritional purposes."

Other African superfoods include, Baobab fruit, Hibiscus, Tamarind, Kenkiliba, Amaranth, Moringa and pumpkin leaves.



African superfoods: (Top) Baobab fruit (Below) Moringa

## MASINA AND THE CREATION OF A PEOPLE'S CITY

The Executive Mayor of the City of Ekurhuleni, Cllr. Mzwandile Masina, is a man with a deep commitment to the creation of a people's city – a city that harnesses the potential of all its residents; a city that is committed to restoring its residents' dignity and a city with a local economy that grows in the hands of its people. Since his election into office, the Executive Mayor has been hard at work redressing some of the most pervasive systematic and structural challenges that confront the metro. These challenges, birthed in our apartheid past, continue to define the material realities of millions of people in South Africa. But in the City of Ekurhuleni, the tide is undoubtedly beginning to turn.

It is not an accident of history that one of the biggest projects that the City is presently involved in is the Nelson Mandela Footprint in Ekurhuleni, an initiative of the City's Sports, Heritage, Recreation, Arts and Culture Department in partnership with the Nelson Mandela Foundation. The project is part of the Nelson Mandela Global Campaign and is aimed at advancing and enhancing the City's heritage by documenting the role that the former president of South Africa and global icon played in the City's history. The City's commitment to promoting democratic values is reflected in this initiative.

Understanding that the true measure of democracy lies in the improvement of people's material reality, the City of Ekurhuleni has been dedicated to the resolution of challenges relating to human settlements, healthcare and education. All 93 clinics within the City were assessed in terms of the National Core Standards and achieved Ideal Clinic Status as follows: Platinum Status 18, Gold Status 55 and Silver Status 20. It is because of this quality of healthcare provision that the City has seen a significant reduction in HIV/AIDS mother-to-child transmission.

Spatial justice is one of the core commitments of the City and under Cllr. Masina's leadership, it has taken priority. His administration's commitment to advancing a pro-poor agenda has always been anchored on the belief that the only way to meaningfully redress the injustices of a past that was characterised by separate development is to strengthen



Executive Mayor of the City of Ekurhuleni, Cllr. Mzwandile Masina

efforts in providing services that would not only level the playing fields for the poorest of the poor, but also ensure that they live a life of dignity. It is for this reason that the City has invested significantly in the development of informal settlements.

The City rolled out an informal settlement electrification programme which led to the installation of 33 236 photovoltaic lighting. In the recently ended financial year alone, 15 907 households in various informal settlements were electrified, bringing the total number of connected households in informal settlements to 22 516. Additionally, as part of the integration of informal settlements, the new administration under Cllr. Masina reduced the household ratio of chemical toilets from 1:10 to 1:5.

The City has a longer-term plan to work hard to see the delivery of 100 000 housing units and 59 000 serviced stands over the 5-year term. Thus far, over 30 000 houses have been built and allocated to beneficiaries.

Education is another important area of focus for the City. In advancing its skills development project, the education allocation was increased to R100 million bursary fund. This is a 10-fold increase from the previous years when the bursary fund was at R10 million. The net effect of this investment has been an increase in the number of beneficiaries, which has direct implications for the growth and development of the City.

The City of Ekurhuleni continues to be a city at work – a city that grows in the hands of its people.

Ekurhuleni
METROPOLITAN MUNICIPALITY


San people hunting


A wood-fired African dish


Sliced biltong, a South African dry meat snack

**Cultural and historical benefits**

Gastronomic tourism also includes the promotion of heritage sites that are known to revolve around dishes that are of historic importance. They enhance the travel experience, they encourage the acquisition of knowledge and a cultural exchange.

There is a unanimous view that vast amounts of knowledge have been lost to history and there is a huge knowledge gap in African societies as a result of colonization and urbanization.

"Part of the colonial agenda was to make sure food security did not belong to indigenous groups. Therefore, archiving of these knowledge systems was not a priority. Especially during industrialization, where people moved from their villages to the city you found that the knowledge got left behind," Mnyanda says.

He offers a contemporary example of how modernization continues to push African practices to the fringes: "To this day, *abathwa* (the San people) hunt their meat, but you find that because of changing agricultural practices and land reform on the Kruger National Park, they are being forced to move into the cities and industrial areas, therefore they are no longer able to practice their culture of hunting. As a result, their diet is changing." Sedupane shares the view that the fundamentals of farming and astrology have also been exiled from public knowledge.

"The fundamentals of IKS were based on the understanding of the laws of nature – how and when things were done. Harvest cycles were linked with understanding astrology. They would not harvest until certain stars were visible in the sky. There was a dependence on nature.

"With industrialization, rather than working with nature, humans are seen as being above, as controlling, as directing it. The natural cycle is often tempered with rather than trying to work with it."

Not all is lost however. There are historical practices that have stood the test of time and continue to be a part the few foods that are internationally associated with South Africa. Mqwebu says that, "historically, we ate more plants than meat because our ancestors had to hunt and the game back then was not tame. So, there were no guarantees that you would return with meat. And that's where things like *umqwayiba* (biltong) come from. They had to preserve the meat, because wasting was not part of the culture".

According to a 2015 exploratory research project conducted under the guidance of research institute Tourism Research in Economic Environs and Society director Professor Melville Saayman, biltong contributes more than R2.5 billion ($163 million) to the South African economy.

Perhaps, like the faecal transporting company, Africa will soon realize the 'wasted' opportunity and that there is loads of money to be made in gastronomic tourism for all its inhabitants, whether they are rural or urban, technological or indigenous.

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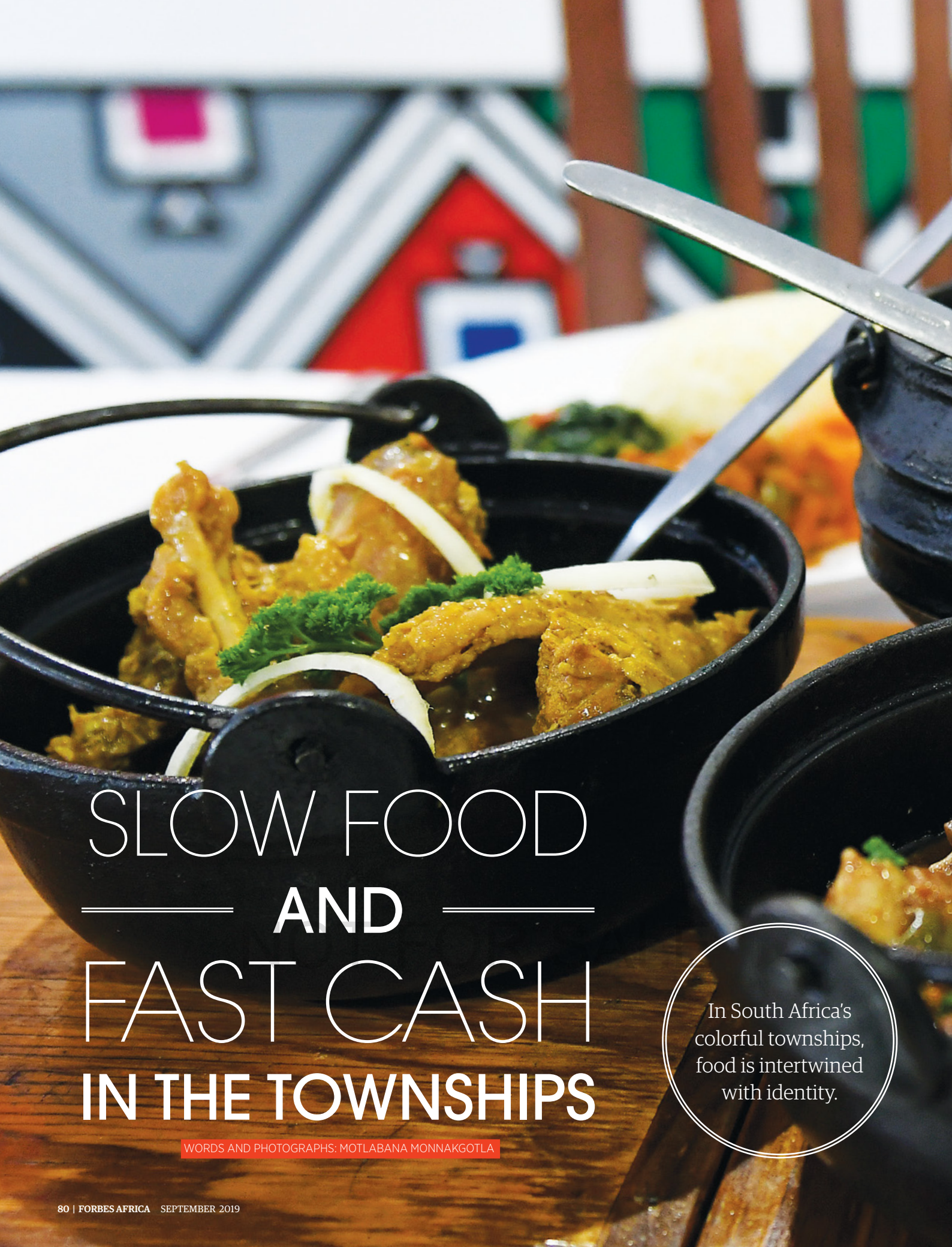
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*...nesting international standards with African hospitality*



# SLOW FOOD AND FAST CASH IN THE TOWNSHIPS

In South Africa's colorful townships, food is intertwined with identity.

WORDS AND PHOTOGRAPHS: MOTLABANA MONNAKGOTLA



TOWNSHIP DINING has found a seat at the multi-cultural table that is South Africa and it most certainly reflects the incomparable vibrant energy distinct to African communities all over the country.

FORBES AFRICA visits some of the restaurants, or rather *shisa nyamas*, to glean more about their entrepreneurial journeys and the first stop is Vilakazi Street in Soweto, south west of Johannesburg.

Sakhumzi Maqubela's entrepreneurial skills were cultivated in high school selling pens, sweets and photographing his peers before selling chickens down the road from where his popular restaurant is situated between Nobel Peace Prize winners Archbishop Desmond Tutu and Nelson Mandela's houses. Vilakazi Street remains the only one in the world to have housed two Nobel Prize winners.

After high school, Maqubela dabbled with a few business ventures that did not quite pick up, but he had a roadmap to success.

"I knew in high school that I was not going to university but wanted to work for a company and see how things operated, and translate that information into my company in the future," he says.

Indeed, he found employment as a messenger at a financial institution at the age of 21. Maqubela wasn't earning much and started selling chickens to supplement




**"WHEN I STARTED IN 2001, I STARTED WITH FOUR TABLES AND FOUR PEOPLE.**
– SAKHUMZI MAQUBELA



A customer self-caters samp (African food consisting of dried corn) and gravy

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his income. He also tried his hand at the metered taxi business but it gave him more headaches than money.

Maqubela matured in the bank, working in various departments until he ultimately worked in the IT department as a technician.

At this point, he was learning that crime and unemployment in South Africa were on the increase.

He had refined the art of hustling when he finally stumbled upon the venture that would catapult him to success. He opened Sakhumzi Restaurant.

"When I started in 2001, I started with four tables and four people, and it wasn't easy because [eventually] I had to resign and work on contract so I could get a [retirement] package which I gathered with my savings and started the restaurant, instead of an IT firm. I used to sit outside and cook but no one was coming. I would make R90 ($6) a day. I didn't even have clear signage and the service wasn't that good," he recalls.

With the advice he received from other business owners about how to expand his reach, he joined local *stokvels* (group savings club) to attract locals to the restaurant as it was locals who brought tourists into the township. That strategy proved to be effective.

In the first year of business, his turnover was about R1,000 ($69), and today, it has gone up 70 times based on the number of customers he receives on a daily basis.




**"IN SOUTH AFRICA TODAY, THERE IS AN EVOLUTION OF PUBS AND RESTAURANTS TRYING TO LOOK AND FEEL BOHEMIAN, SO WE TRY TO KEEP UP WITH THE LITTLE MONEY THAT WE MAKE.**
– KGOMOTSO MODISE

Sakhumzi Restaurant is contributing to the township economy, buying tripe from a local butchery, at about R60,000 ($4,142) a month. He also spends a total of about R200,000 ($13,806) a month on local services and products like condiments. Maqubela has opened a farm to grow his own produce; keeping more money circulating in the township.

About 21kms from Sakhumzi is a butchery that serves English breakfast, besides the succulent *braai* (barbeque) meat they are known for. It plays lounge music for young professionals most evenings; this is Tso's Butchery, named after the founder's shortened name.

Kgomotso 'Tso' Modise, born and bred in Kagiso, a township situated in Krugersdorp, about 30kms west of Johannesburg, attended varsity at the University of Cape Town, in the Western Cape province of South Africa to study BCom in accounting and Information Technology; unfortunately, he was unable to complete his studies during the final year, in 1998, as a result of financial constraints.

Modise had to return home and find a job. He got a job with an airline as an administrations officer ensuring that pilots received their meal allowances. Little did he know that he would

eventually serve tourists from his home township.

Modise left aviation for a financial institution, working as a business analyst. This, too, was not a permanent move.

"I resigned because I wanted to do something different; in fact, I've always been interested in this entrepreneurship thing. I didn't see any growth in the bank even though I was earning enough money. I thought my calling was more in business. I resigned in September 2008," Modise recalls.

He started looking for a place to open a pub, and didn't have enough capital and opted to start small by selling *kota*, which is popular township street food comprising of a quarter (*kota*) loaf of bread hollowed out and filled with a combination of, among other ingredients, *atchar* (pickle), polony, slap chips, cheese, egg and Russian sausage. His menu also included home-style cooked food and braai meat; commonly known as *shisa nyama* in South Africa. However, business was slow because he did not have equipment to store meat before cooking it.

At the time he would *braai* the meat alone; he prepared the fire himself, waking up early and by 6AM, he was chopping wood and shoving the coal together during winter mornings.

"When I was employed, I used to live a lavish lifestyle and got into serious debt. I waited for my pension fund only to find that it was not enough [to start a business]. With the little that I had, I had to buy the little that I could afford. I had bought two fridges but that still was not enough," he says.

Things didn't improve.

He tried looking for funding but he was in debt and financial institutions were not willing to fund his enterprise. He was forced to be resourceful and to improvise. A few months later, creditors began calling him for payment. His home in suburban Johannesburg was repossessed and he had to return to the township to live in a backroom in Kagiso.

"The next year, while still in a financial mess, I cancelled my vehicle insurance to cut costs. A few weeks later, it was crashed into while it was parked on the side of the road and it was written off," he laments.

"Those were difficult years and that lasted for about three years. I lost a house, a car and couldn't afford the life I used to live."

Locals were enjoying his delicious offerings and business started picking up in 2011. Modise rented more space at the shop next door; now they could add a bar area to sell liquor.

"We extended the shop and renovated it; over the years, we changed furniture. Every three years, we change the furniture just to keep the people thinking it was a new place because in South Africa today, there is an evolution of pubs and restaurants trying to look and feel bohemian, so we try to keep up with the little money that we make," he says.



Tripe is edible lining from the stomach of farm animals like cattle and sheep

"Fifteen years back, people would buy *mogodu* (tripe) and put it in a container to go eat at home, now you can have it in a plate, and sit and have a drink and have wipes, and go to the loo and find a sanitizer. Now people are not forced to go to a restaurant in the suburbs or the city where, sometimes, we don't feel welcomed."

He reflects on the transformation the local food space has seen over the years.

"Today, wherever I see a young boy *braaing* meat, I have a soft spot for him because people don't know what it's like *braaing* meat without the right equipment, especially when

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using wood and coal; it's not easy controlling the fire and heat burns you as your arm is over the fire to turn the meat. Imagine doing that daily, the whole day. So now I pay my *braai* masters a decent amount because I know the pain of the fire," he says.

Modise started with three employees and is now paying 23 employees, including bouncers. He plans to add four more people as the hunger for his food has expanded further than Kagiso.

Thembisa is another township in the east of Johannesburg, 41 km from Tso's Butchery. The roads are under construction and it takes a little longer to get there. However, it is well worth the wait as FORBES AFRICA meets 25-year-old Valentine Mabaso, general manager of the Slotjhile Pub & Shisanyama; a Ndebelele-inspired venue established in 2017, also specializing in African cuisine.

"We have built our own identity; we have the Ndebele culture as our look and feel which was not represented in the hospitality industry. When one thinks of isiNdebele, one just thinks of mama Esther Mahlangu (a South African contemporary artist) and her paintings. So Slotjhile is trying to give the culture more exposure in the food industry. The name is derived from the isiNdebele greeting, *Siyalotjha*," says Mabaso.

The space hosts up to 750 people seated, with more seats added outside another 100 people can be accommodated. An overall total of more than about 3,000 people and employing 120 people all from Tembisa, consisting of only young people below the age of 40, empowering township youth.

**"WE HAVE BUILT OUR OWN IDENTITY; WE HAVE THE NDEBELE CULTURE AS OUR LOOK AND FEEL WHICH WAS NOT REPRESENTED IN THE HOSPITALITY INDUSTRY.**
– VALENTINE MABASO

In the same thread, the business placed emphasis on empowering women as all top management roles are filled by them. They also purchase produce from local supermarkets, ensuring money circulates in Tembisa.

The recipe for success might not be the same for everyone, however, it is clear that the South African township dining experience is constantly evolving as the appetite for more authentic meals grows by the day. F





Food served in *potjie* pots

# THE EIGHT BALLS THAT CHANGED A LIFE

A chance shot at a pool table provided an outlet for a seven-year-old diagnosed with ADHD, who would go on to dominate the sport and raise the flag high for Africa.

BY MOTLABANA MONNAKGOTLA



POOL TABLES ARE TYPICALLY known to be convivial centerpieces at smoky beer parlors and pubs, a space where guzzlers, mostly male, are baptized as swaggering adults.

However, Amy-Claire King, defying all stereotypes, was introduced to this space a lot earlier in life.

King, born in Boksburg in the East Rand of Johannesburg, South Africa, started playing pool at the age of seven – at a time when even the pool cue was taller than she was. But it did not take long for her to take full control of it.

She traveled to her first world championship at the age of 13 in Australia and has not looked back since.

The journey started when she was diagnosed with Attention Deficit Hyperactivity Disorder (ADHD) and was prescribed Ritalin.

Her mother strongly disagreed. Luckily, an outlet and avenue of opportunity was about to present itself.

"One day, we (King and her mother) went to a *braai* (barbeque) and there was a pool table with all the pool players. They saw me play, they spoke to my mom, and I was in. So I was introduced to the sport by my mother's friends who played pool," she says.

Subsequently, the seven-year-old went for coaching with one of the top female players and has kept her eye on the ball since. King had her attention focused on the precision of maximizing every shot, and as a result, all talk of ADHD dissipated with time.

Armando Jeronimo, a former pool league player in the prime precincts of Gauteng, South Africa, and currently a social golfer, has had a keen interest in seeing King succeed.

"I met Amy when she was a child learning how to play pool. At the time, I was a league player and would be practising at Planet Pool, in the east of Johannesburg. I could see that she was a naturally talented person, just from the way she stood and walked around the pool table, one could just pick that up as a professional player; it's like seeing a youngster with a football on his feet," says Jeronimo.

King did not think at the time that she would take up pool as one of her careers, going on to represent her hometown and Africa globally.

But despite her achievements, there are challenges sustaining a sport that does not enjoy mass collective and commercial support.

"It's not fully professional, everybody still has a regular job; we're still human beings outside our sport, unfortunately, we wish we could do it full-time," says King.

However, to become a professional player, one has to join the local league and it can assist with guiding the progression.

After a year of being in the league, players will need to qualify for regional trials and then move on to the South African championships where they compete with other provinces and finish top five to qualify for the national South African team.

Photo by Motlabana Monnakgotla

NOT FOR SALE



But while her star was rising, King lost the one person who had given her unconditional support – her mother.

"It has been really rough; I am left with my little brother and daughter. My mother was diagnosed with cancer about three and half years ago, and I didn't really feature [in the sport]. I was still making the South Africa team but didn't go to the championships for two years because I had just got my daughter, and the time that my mom was sick.

"My mom went into remission and everything was getting better, my pool was getting better. Six months later, she started getting headaches and they found three tumours in her brain. They told us six to 18 months to live, but it was 10 weeks," says a reflective King.

Needless to say, pool was no longer her priority. The other areas of her life were also affected.

"So, I left my job for a while to pull myself back together and get strong for the kids,

**"I NEVER QUIT, I NEVER GIVE UP; I'M LITERALLY RELENTLESS IN WHATEVER I DO.**

and that's when I started refocusing on my game. This year has just been amazing for me; with every tournament, I won 'Player Of The Tournament' and lost only one final and that was on a decider frame.

"I really wish my mother was here to see this, because she was my biggest fan and never missed a game. I think that is why I took a drop on the game; it was really hard playing the tournaments without her by my side. So whatever I do, I do for her," she says.

To overcome the grief, King sought help and found it in the pages of books that gave her some perspective and drove her to make some fundamental changes.

"Before my mom's death, I was feisty and not a good loser. I had to build on myself, emotionally and mentally. I started realizing that a loss in pool doesn't have the same impact as before because I also started reading a lot of books, especially sports coaching books; namely *Relentless*, by Tim Grover, [former American basketball player] Michael Jordan's trainer. I felt like that is exactly who I am, I never quit, I never give up; I'm literally relentless in whatever I do. The book stays with me all the time, and I read my favorite quotes from it before a game."

It seems those words have propelled her to a level she has not previously reached and she has smashed the glass ceiling in sport.

"I am currently ranked number one in the world, I won the World 8 Ball Player Of The Tournament and World Masters Champion among other titles in Blackpool, England," says King.

This makes her the first South African woman to have ever won the particular world title. She is testament to the idea that 'practice makes perfect', because she attended her first world championship in 2011. Among other achievements, in 2015 and 2016, she was the All Africa Blackball Champion. In 2012, 2013, 2015 and 2019, she was the South African 8 Ball Champion.

And, of course, all of this could not have happened without the assistance of her friends and supporters, she says. Jeronimo and his golf peers helped organize a golf day to raise funds for King's trip to the world tournament earlier this year.

"Having been involved in the game, I know the amount of money that is needed for players to go to the world championships and represent the country, because there is no sponsorship. Through our network of friends who play golf, and within two months, we raised money for her to go," Jeronimo says.

King is currently making room on her mantle for more trophies as she hopes to continue on her growth trajectory for the All Africa Eight-Ball Pool Federation tournament in Morocco later this year.

# CRACKING THE FORMULA IN MOTHER CITY



After a host of changes and challenges in leadership, the mother of all motorsports, Formula 1, might finally come to Cape Town, if all goes according to plan.

BY NICK SAID

MONACO, BARCELONA, Melbourne and Montreal are all iconic global cities that host hugely popular and opulent Formula 1 races, but could Cape Town soon be added to the mix with a spectacular circuit through its historic streets?

The answer to that question is likely to be known in the coming months, with a new play being made to bring the motorsport to the South African coastal city for what would be a unique and eye-catching race.

The Mother City has been talked about as a potential Formula 1 venue for over a decade, but potential organizers previously failed to get the municipal backing of the City of Cape Town, and also battled to win over the former boss of the sport, Bernie Ecclestone.

But Ecclestone has now sold up to American group Liberty Media, who are keen to have a race on African soil, while the City also appears to be warming to the prospect.

Cape Town Executive Mayor Dan Plato and Councillor JP Smith told a media briefing in June that they were keen to explore bringing Formula E, a version of Formula 1 for electric cars, to the Mother City.

In the three years that Formula E has been hosted in Hong Kong, it has contributed approximately R1.4-billion ($91 million) towards the city's revenues.

"We don't want to rest on our laurels, we can't keep on doing the same thing," Smith told reporters.

"We have laid a good foundation over the past few years, but we have to up the ante all the time. Motorsport events, we think, will be a big part of that growth."

A feasibility study is currently under way to see whether Cape Town is a good fit, but Formula E remains a poor cousin of the main attraction – Formula 1.

Igshaan Amlay, who is CEO of Cape Town Grand Prix South Africa (CTGPSA), a group trying to secure a Formula 1 race for South Africa, believes the time is, therefore, right to launch another bid secure a race for the city and will be meeting with officials.

"We previously pitched for it in 2011/2012 but at the time, there was a lot of red tape," Amlay tells FORBES AFRICA.

"We had funders in place, but there was resistance from within the City of Cape Town, there were some people there who were openly anti-Formula 1.

"But after the recent Red Bull Circuit event that was hosted in the City [in June],

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Photo supplied; Photo by Tom Merton via Getty Images






which drew 50,000 people, we have seen a change in attitude, and I think it has made a big difference in the City's intentions in this regard."

Amlay believes those funders that were willing to invest in the project eight years ago would step in again if they had the backing of the City and the Western Cape Provincial Government

But the challenges would not end there, the next step would be to negotiate with Liberty Media to bring a race to Cape Town, and to find an available slot in the racing calendar. Organizers hoping to host a race must also pay a license fee to Liberty Media to use their brand.

"One of the biggest challenges could be the licensing, we are not going to accept a big fee. Monaco is the only circuit that does not pay a fee at all, while I believe Liberty Media has recently reduced the fee for Silverstone [the British Grand Prix].

"We would need them to give us a good rate, and we would hope they are open to engagement because if they have a race in Africa, then they cover the entire world.

"But I think dealing with Liberty Media will be easier than dealing with Ecclestone, with him it was what he said, goes. But I think the Americans are more about marketing the sport around the world."

Amlay says they would target Cape Town's tourism off-season, around September or October, and adds there would be no worries about inclement weather.

"They [Formula 1] don't mind wet weather at all, because it actually makes for better racing because it gives the drivers the opportunity to take more risks and provides more of a contest. Obviously, we could not host the event in tourism season."

Amlay expects a Grand Prix could draw a crowd of 250,000 and the plan to use the Cape Town Stadium for part of the circuit has a very specific aim.

"Formula 1 has a very loyal following and there are 50,000 people annually who travel around the world to attend races. Besides that, we have a huge motorsport following in South Africa and indeed the rest of Africa."

"We would use the Cape Town Stadium to make 50,000 discounted tickets available to people from disadvantaged backgrounds, to ensure that this is not an event for the wealthy only."

**"THERE WAS RESISTANCE FROM WITHIN THE CITY OF CAPE TOWN, THERE WERE SOME PEOPLE THERE WHO WERE OPENLY ANTI-FORMULA 1.**
– IGSHAAN AMLAY

The circuit would mostly utilize Cape Town's Beach Road, and have the likes of Table Mountain, Robben Island and the V&A Waterfront as spectacular backdrops.

"Logistically, it makes sense, the airport it is very close to the track, and you have plenty of accommodation and hospitality on the track itself," Amlay says.

As for timings, Amlay stresses that it would be all about when a slot became available on the Formula 1 calendar.

"They want 22 or 23 races annually, so we would need to see when licenses become available, but we believe, with everything in place, we could have a race within two years."



# HOW TO LURE FANS BACK TO THE STADIUM

NOT FOR SALE

A host of leading teams across many sporting codes are spending billions in South Africa to develop new, modern stadia and elevate the experience above merely the game. This includes a dining experience in your seat.

BY NICK SAID

MODERN-DAY sports events have become about much more than what happens on the pitch with the fan experience crucial in drawing crowds to the stadium.

Whereas in years past it was about the blood, sweat and sometimes tears in the heat of battle, fans are now also seeking to be entertained in other ways, and are increasingly looking for convenience and comfort too.

It is why a host of leading teams across many sporting codes are spending billions of rands to develop new, modern stadia that cater to these needs, and elevate the experience above merely the game.

Whether it is convenient access,

seats with better viewing, corporate hospitality or food and beverage options, fans are becoming more demanding the world over.

Enjoying live sport can be an expensive business and value for money is crucial if teams are to retain their support in the stands, or else risk losing them to other forms of entertainment.

Improvements in this regard have been slow to come to South Africa, but a new initiative between South Africa telecommunications giant Vodacom, the Pretoria-based Blue Bulls Rugby Union and global technology innovator Fastcomm has the potential to change that.

Fastcomm recently debuted a version of its multi-channel conversational platform solution, known as hi.guru, at Loftus Versfeld Stadium in Pretoria that has the potential to change how fans watch live sports in the country.

It involves the ability to order food and beverages, and potentially in the future more than that, from your seat, and have this delivered to you within minutes.

This might seem the height of laziness, but any sports fan who has attended a major event will tell you that the queues at food and beverage kiosks can be long, especially during the designated breaks in play.

Leaving your seat can mean missing crucial action, which is hugely frustrating when you have paid hundreds, or even thousands, of rands for your ticket.

It is often quoted as a reason why many people stay at home and watch from the couch. The experience might be less enthralling, but the fridge is a few meters away and they don't miss a thing.

So the ability to change that and provide convenience to fans, improving their experience at the stadium, is a potentially exciting development in South African sport.

"The concept is simple, yet exceptional," hi.guru Managing Director Ingrid Olivier tells FORBES AFRICA. "When at the stadium, fans can visit the unique web link on their cellphone or preferred communication channel of choice, scan the QR code found on the match schedule cards and posters, and proceed to view the menu items available for ordering, at specific seats.

"Alternatively, in the case of Loftus Stadium, fans can contact the Blue Bulls via their Facebook Messenger page, and in the future via WhatsApp.

"From there, fans can order their food and pay directly through a secure interface. Their order is then communicated, in real-time, to the food kiosk for preparation, as well as to a food kiosk runner by means of an in-seat runner app, also created by the hi.guru development team.

"The in-seat runners can directly converse with the fan, through the in-seat runner app, communicating their location or expected delivery time, and within minutes their food is delivered, by means of the runner, to their seat."

It is not a new concept globally, but a first for Africa, and so far it has been well-received at the stadium.

"Fans have reacted very positively towards the platform with many requesting that it be implemented throughout the stadium so that more can make use of it," Olivier says.

"What fans have loved the most is having the ability to engage with technology, such as a chatbot, to complete simple requests.

"Fans equally loved the convenience and that their orders were delivered as quickly as two minutes and without hassle."

Olivier says the plan is to extend the service to other venues and sporting codes in the future.

"As this is a first for the South African sports fan community, it has been wonderful to see the curiosity and enthusiasm they expressed," she says.

"This excitement has further fueled the fire within the Fastcomm team to work towards not only gearing up other rugby stadiums but additionally explore opportunities to implement the in-seat ordering solution at cricket and soccer stadiums, within South Africa, to offer the same level of convenience and positive fan experience."

> **"AS THIS IS A FIRST FOR THE SOUTH AFRICAN SPORTS FAN COMMUNITY, IT HAS BEEN WONDERFUL TO SEE THE CURIOSITY AND ENTHUSIASM THEY EXPRESSED.**
> – INGRID OLIVIER

The idea for the in-seat ordering app came through a partnership between Vodacom and the Blue Bulls, says Fastcomm CEO, Goltz Wessmann.

"In an effort to empower a connected society, Vodacom sought to create the ultimate next-generation fan experience at a stadium," Wessmann says. "Their aim was to give fans an 'at-home experience' whilst in their seat at the venue.

"They recognized that to really engage with fans, using their preferred communication channel of choice, they needed to partner with an innovator that had a keen interest in using technology to improve and enhance the customer, or in this instance fan, experience.

"Through this unique collaboration, Fastcomm and the Vodacom Innovation lab, V-Accelerator, worked together to create the in-seat ordering solution, a platform that can ultimately be white-labelled across South African stadiums."

In the ongoing battle to bring fans back to South African sports venues, this innovation could be a leap in the right direction.

Photo via Getty Images

# CLASSIC CORDUROY

The old-school fabric is making a chic comeback this season.

COMPILED BY: JULIA RICE




Cassic corduroy trousers are heavier and warmer for the cooler months and come in on-trend seasonal shades. Opt for corduroy whenever you might otherwise wear suit pants, jeans or chinos. Feeling bold? Go for a corduroy sport coat, or even a full suit made of the fabric.

**1.** Leather-trimmed corduroy holdall, Brunello Cucinelli, **R37,022.45 ($2,622)**

**2.** Single-breasted cotton-corduroy suit, Maison Margiela, **R19,855.90 ($1,406)**

**3.** Velvet-corduroy shirt, Sies Marjan, **R8,726.85 ($618)**

**4.** Bi-colour cotton-corduroy tie, Title of Work, **R1,617.40 ($115)**

**5.** Corduroy low-top trainers, Aprix, **R995.32 $70.49**

**6.** Corduroy flat cap, Dolce & Gabbana, **R2,879.33 ($204)**

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*Dollar prices are approximate figures as per the exchange rate at the time of going to press.*

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TSHILIDZI MARWALA

# AT THE CROSSROADS

ON JULY 23 I HAD THE PRIVILEGE of hosting South African president, Cyril Ramaphosa, at the University of Johannesburg for a conference on 25 years of democracy.

At this event, the president pointed out that the world was changing rapidly due to the fourth industrial revolution and that unless South Africa increased the skills of the people, there would be massive job losses in the next 10 years.

Seven days later, Statistics South Africa announced that the unemployment rate had increased from 27% to 29% in the second quarter of this year – the highest jobless rate since 2008. Many were surprised by these numbers even though the economy contracted by 3.3% in the first quarter of 2019.

Some blamed the African National Congress, which is the governing party in South Africa. Some blamed the president who inherited an economy which was in shambles. However, none blamed the South African people whose expectations are misaligned with reality.

On the one hand, some South Africans still talk about "expropriation of land without compensation", in a threatening manner while on the other hand, they talk about investments. One cannot threaten property rights and expect the flow of investments into assets that depend on property rights at the same time. Something has got to give.

South Africa, with the purchasing power parity gross domestic product of $813 billion, is the second-largest economy on the continent, after Nigeria, with a purchasing power parity of $1.2 trillion. South Africa is the most industrialized and diversified economy on the continent.

For a long time, South Africa had positioned itself as the gateway to the rest of Africa. It attracted Africans from the rest of the continent at an astonishing rate. It was well-placed to take advantage of the developments in the rest of Africa.



Photo via Getty Images

However, three significant events happened that severely challenged South Africa as the gateway to the rest of the African continent.

Firstly, the xenophobic attacks in 2008. Secondly, the major political events that led to the recall of former president Thabo Mbeki and the ascendancy of former president Jacob Zuma, which resulted in the end to the pan-African concept of the African renaissance. Thirdly, the emergence of Kenya and Ethiopia as competing gateways to the rest of the African continent due to their relative proximity to Europe and Asia and the economic and political reforms that they underwent.

Furthermore, South Africa has experienced major existential setbacks that threaten the very foundation of its industrial base. This is the shift from having the cheapest electricity in the world, in the year 2000, to now being one of the most expensive in the world.

To try to change this situation, in 2008, Eskom, the South African electricity utility company, embarked on building two new power stations, Medupi and Kusile. These power stations have encountered many problems, including technical problems with roots in the choice of supercritical technology, which uses the delicate superfluid to move the turbine, rather than the conventional steam. Medupi and Kusile remain the largest supercritical power stations in the world. The result is that we have two power stations that do not work well and the debt of R450 billion ($30 billion), the interests of which are twice the annual revenue of Eskom.

The other significant problem of South Africa is the skills fight that has reached critical levels where the scarce skills replacement is lower than the skills attrition.

For South Africa to get out of its declining quagmire, it needs to restructure its political, economic, and social architecture. The civil service must rapidly modernize by infusing new skills, especially skills of the fourth industrial revolution, as well as right-sizing to control the public service wage bill.

Secondly, the political civil war that has engulfed South Africa must stop, and every political actor must put South Africa first instead of narrow political goals. Thirdly, education must become efficient and must be depoliticized to improve efficiency, effectiveness, and accountability.

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*– The writer is a professor and Vice-Chancellor of the University of Johannesburg. He deputises President Cyril Ramaphosa on the South African Presidential Commission on the Fourth Industrial Revolution.*

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# BILL GATES RECLAIMS SPOT AS WORLD'S SECOND-RICHEST PERSON

BY KRISTIN STOLLER

AFTER LESS THAN A WEEK as the world's second-richest person, luxury goods titan Bernard Arnault has dropped down to third place, according to *Forbes'* calculations, following a decline in the share price of LVMH. Bill Gates, boosted by stronger Microsoft stock, returned to his spot as the second-richest person in the world.

Arnault, whose conglomerate LVMH is behind brands such as Louis Vuitton and Moet & Chandon, saw his net worth drop down to $100.7 billion on Thursday — about $2.5 billion less than one week ago.

LVMH shares have fallen 1.7% in the past week. Gates moved back into the No. 2 spot; his net worth jumped to a current $104 billion, from $102.9 billion last week, amid an uptick in the price of Microsoft's shares.

The third week of July marked the first time since 2008 that Gates had not been either the richest or second-richest person in the world. Both Gates and Arnault have a ways to go to catch up to the world's richest person, Jeff Bezos.

Bezos has a net worth of roughly $162.9 billion; he has said he will give his ex-wife, MacKenzie Bezos, a quarter of his Amazon shares, now worth about $39 billion, which would still put him ahead of Gates by roughly $20 billion.

Some of the decline in LVMH shares is likely tied to its announcement on Wednesday of first-half results. The company posted a 15% increase in revenues, to $27.9 billion (€25.1 billion). However, the company's operating profit came up slightly short of analyst expectations. It was reported at $5.9 billion (nearly 5.3 billion euros), compared to the $5.98 billion analysts predicted.

LVMH's fashion and leather goods business continues to be the company's highest revenue driver with $11.6 billion in sales, up 21% from last year.

"These results once again illustrate the effectiveness of our strategy and the exceptional desirability of our Maisons, whose products transcend time," Arnault said in a press release. "Their constant demand for quality and their consistently refreshed creativity are key to LVMH's success, always guided by a long-term vision, combining exemplarity and responsibility in all the company's actions."

It's been a busy year so far for Arnault. In the third week of July, LVMH announced a venture with fashion designer Stella McCartney. In April, the company acquired luxury hotel and restaurant group Belmond for $3.2 billion.

**JEFF BEZOS HAS A NET WORTH OF ROUGHLY $162.9 BILLION; HE HAS SAID HE WILL GIVE HIS EX-WIFE, MACKENZIE BEZOS, A QUARTER OF HIS AMAZON SHARES, NOW WORTH ABOUT $39 BILLION, WHICH WOULD STILL PUT HIM AHEAD OF GATES BY ROUGHLY $20 BILLION.**

Only five people in the world have officially ranked first or second richest in Forbes' annual billionaire rankings since 2001: Bezos, Gates, Warren Buffett, Zara's Amancio Ortega and Mexican telecom titan Carlos Slim Helu.

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Photo by Christian Marquardt/Getty Images

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