OUTSIDE THE BOX

MBANGISO MABASO IS CHANGING UP THE EDUCATIONAL SECTOR, WITH A VIRTUAL-REALITY SCIENCE LABORATORY FOR AN IMPROVED LEARNING EXPERIENCE

WORDS EUGENE YIGA

MBANGISO MABASO RUNS A PROJECT CALLED SISANDA TECH , A VIRTUAL-SCIENCE LABORATORY THAT USES AUGMENTED REALITY TO ENHANCE AND MAKE LEARNING SCIENCE EASY, FUN AND ENGAGING. The technology allows users to perform experiments using a smartphone or a tablet. We spoke to founder Mbangiso Mabaso to find out more.

Tell us about your background.
I was born in Botshabelo, Free State, in 1991. This is where I grew up and started my schooling. Even though my university education was in Bloemfontein, I would commute daily from Botshabelo, which is where I drew my inspiration from.

What were your interests as a child?
I did everything that a boy from the township could. I was a soccer goalkeeper, played basketball, did boxing, did karate, and swam in the pond. My dad would buy us a TV game console, and my brother and I would break it in less than a month. I just loved to explore.

What did you want to be when you grew up?
To be honest, I didn't know. The options were to be a teacher, policeman, or soldier. I loved science and technology but I didn't know what to study when I got to university. But when my old brother graduated as an electrical engineer (and bought a black VW CITI Golf), I decided that I wanted to do the same.

What is your earliest science and tech memory?
I was in Grade 7 when my dad purchased our first PC. Having a computer that time meant that we were able to play music and draw using Microsoft Paint. That's what got me interested in computers. When I was in Grade 9, I received another computer. This led me to be 'the computer guy'. Together with my younger brother, I would change the RAM cards and hard drives to improve the performance. It was nice to build rigs at that age.

Where did your love for science and tech begin?
Besides upgrading those computers as mentioned, what made me fall in love with science and technology was my older brother. He was the first graduate of the family. When he was a student, he built a system that switched on the light when the sun goes down. He also built himself an amplifier – I used to hold a soldering wire for him as he worked on the circuit – and a lot of other awesome projects, such as speaking on a microphone to turn on the TV.

Who else inspired you?
In my township, we had one of the greatest inventors, famously known as ntate Ramatheola. He was loved by everyone. He used to drive around with a bicycle that was propelled by generator. He built a car from recycled material, and even built an airplane from recycled materials. He used to give display shows for the rest of the community. It made me realise that we makers and innovators have big shoes

to fill in terms of creating products that inspire.

What was the inspiration for Sisanda Tech?
I'm a 'product of public schooling' (POPS) and, as a science learner from a public school, you could only imagine science but never got the opportunity to experiment with it due to the lack of a science lab. I remember one day my physical sciences teacher introduced a concept of generating electricity through the movement of magnets and motors. It was so fascinating that I and a fellow classmate ended up debating the possibility of this concept, which made us want to go to the science lab to experiment.
We asked permission from the teacher, which we got, and we didn't want to waste any time to get to the science lab, only to find that the doors were falling off, the taps were blocked, and (even worse) there was no apparatus to perform our experiment. This affected my time at university because it was a struggle for me to compete on the same level as the students who were exposed to well-functioning labs at their schools.

When (and where) did the business start?
It started in 2017 at my backroom in Botshabelo. Our vision is to make learning not feel like learning at all; to give every child the opportunity to discover STEM; and to empower them to create their own future.

How did you get funding to get started?
I got my first funding for incorporating the business and developing the prototype
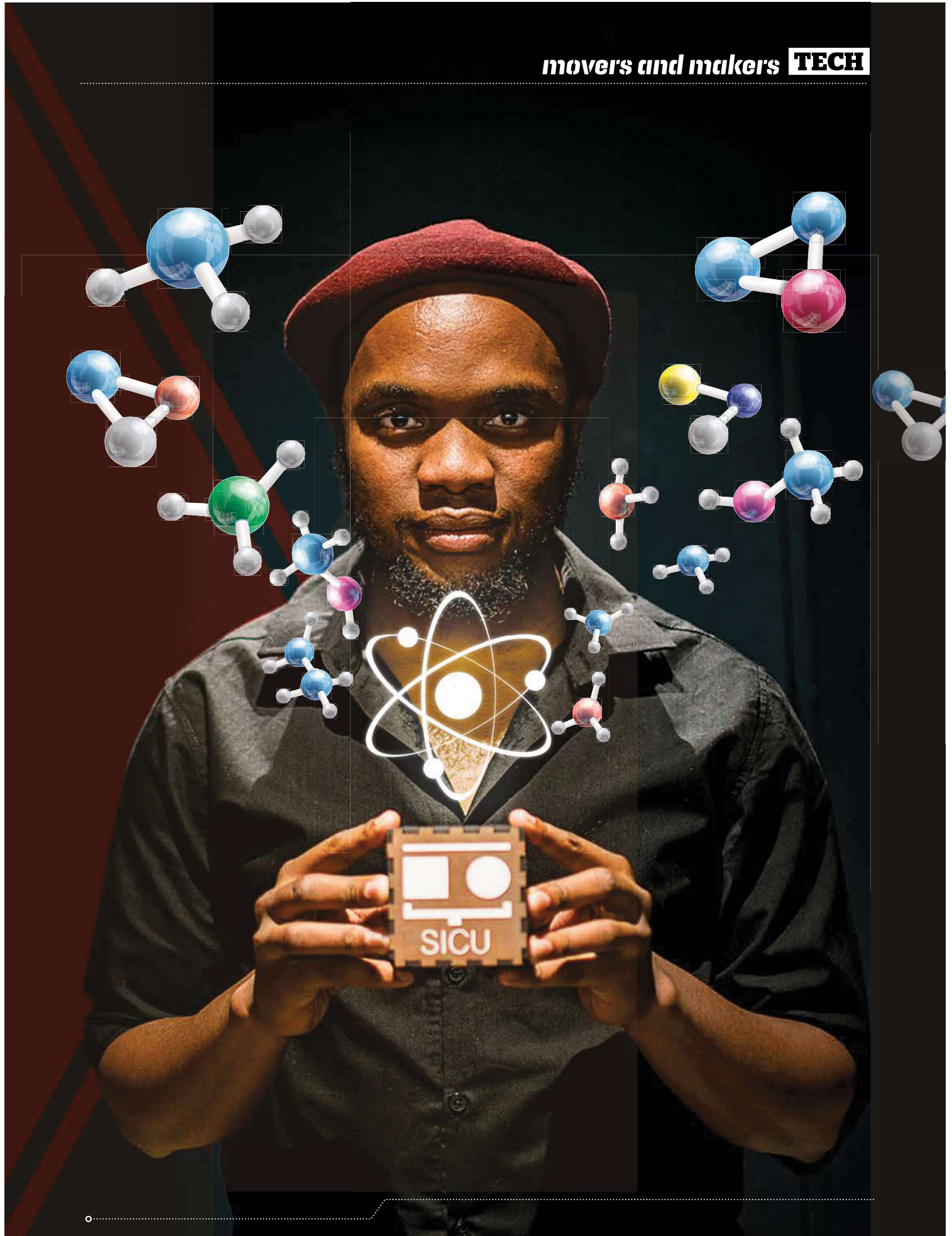
from my friend Vuyisile Mdutyulwa. Then the National Development Youth Agency in Bloemfontein helped us get our first computer (before that I was using another friend's laptop – thank you, Tshediso Goiemann – to develop). After we created our first of the app, we were accepted to Red Bull Basement Residency, and that's where we took off. We attracted more sponsors and partners such as Innovation Hub, Technology Innovation, Further Impact (formerly known as Red Bull Amaphiko), Tshimologong Precinct, Development Bank of Southern Africa, Shuttleworth Foundation, and AWS EdStart.

So what exactly does your business, Sisanda Tech, do?

At Sisanda Tech, we provide a virtual science laboratory. It uses the camera of a smartphone or tablet to project a digital science apparatus in front of learners so that they are be able to experiment anywhere and anytime. We endeavour to make our products (available on our website) affordable for low-income learners. And while our current available apps are free, we are looking to charge for subscriptions in the future.

What are your impressions of the current state of the tech industry?

COVID-19 has shortened the adoption of many emerging technologies. Tech that was meant to take 18 to 36 months to be adopted by the masses is now being used. People are now attending museums or galleries on virtual reality while 3D printers are responding to the demand for PPE. The interest in 'augmented-reality education' on Google Trends has been bullish since March 2020. As a techie, I'm happy seeing more and more people coming online and consuming our products. The pilot release of 5G makes us at Sisanda Tech envision education on 5G. I'm so excited about the future of education with tech.

What are the latest tech industry trends?

On the positive side, more people are becoming interested in the world of augmented-reality education. More and more online stores are now using augmented reality on their stores, which increases adaptability. Technology providers such as Unity Technologies are providing tools that allow developers to be able to test in real time and immersive experiences without wasting time. I see more South Africa companies – such as Edenlab, WeAreVR, 180by20, and BlackRhino just to name a few – in the space of immersive technology pushing the boundaries into the international stage.

What challenges are you dealing with?

Due to expensive hardware, the majority of the population hasn't experienced the power of this technology. We deal with the challenge of device fragmentation, where a huge number of users don't have access to devices that can provide quality experiences. So we're constantly looking for partners who can assist in lowering the barrier to augmented-reality education. The more people that are aware of augmented reality and the more they'd like to know how it can be used, the more Sisanda Tech will be able to help them.

What plans do you have for growth?

What's on our agenda currently is to make Sisanda a quality app that's able to provide engaging visual education. To spread around to more learners we will now invest our time in providing our content in other languages besides English. To realise this dream, we are looking for social investors, companies, and individuals to partner with us so we can deliver value over the years. **T**

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Mbangiso's three nephews are attending the same schools that he used to attend. This inspires him to dedicate his time to work on a virtual science lab that can benefit the 12m+ learners in public schools, 400k+ in private schools, and the 100k+ who are homeschooled.

Sisanda Tech is on a mission to reach one million learners by 2025. Mbangiso wants them to them have an opportunity to explore their curiosity, experiment anywhere and anytime, and play while learning.