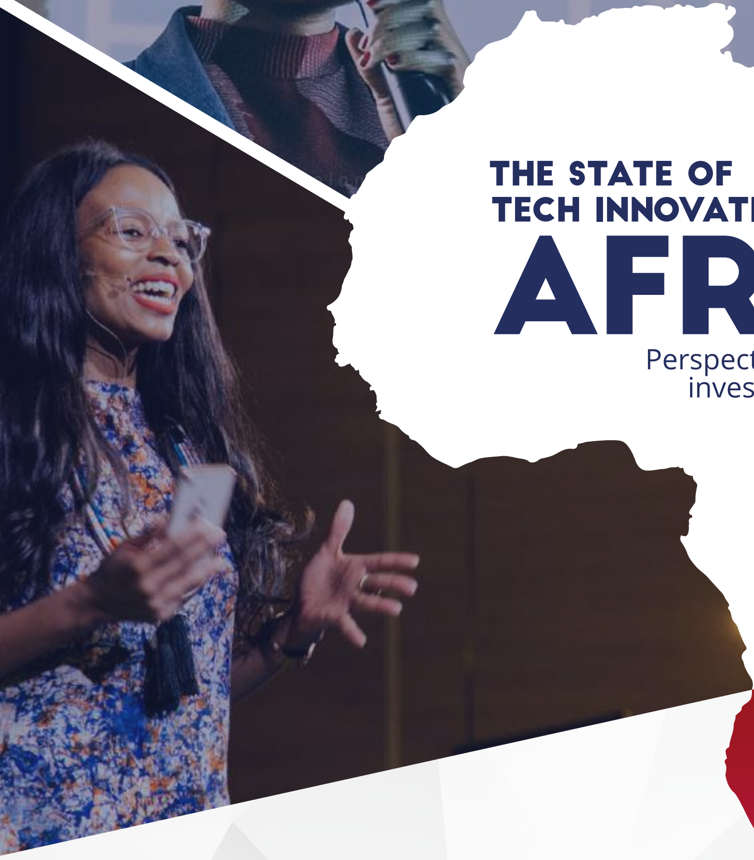


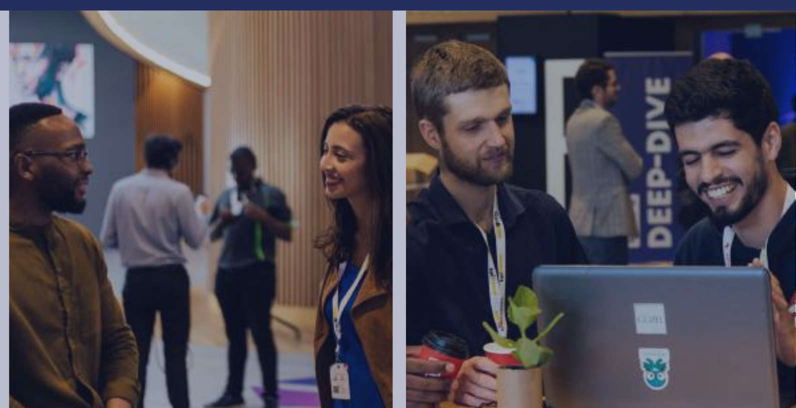
# THE STATE OF TECH INNOVATION IN AFRICA

Perspectives from founders, investors and corporates

**2020**

AFRICARENA

THE AFRICAN TECH ECOSYSTEM ACCELERATOR



# FOREWORD

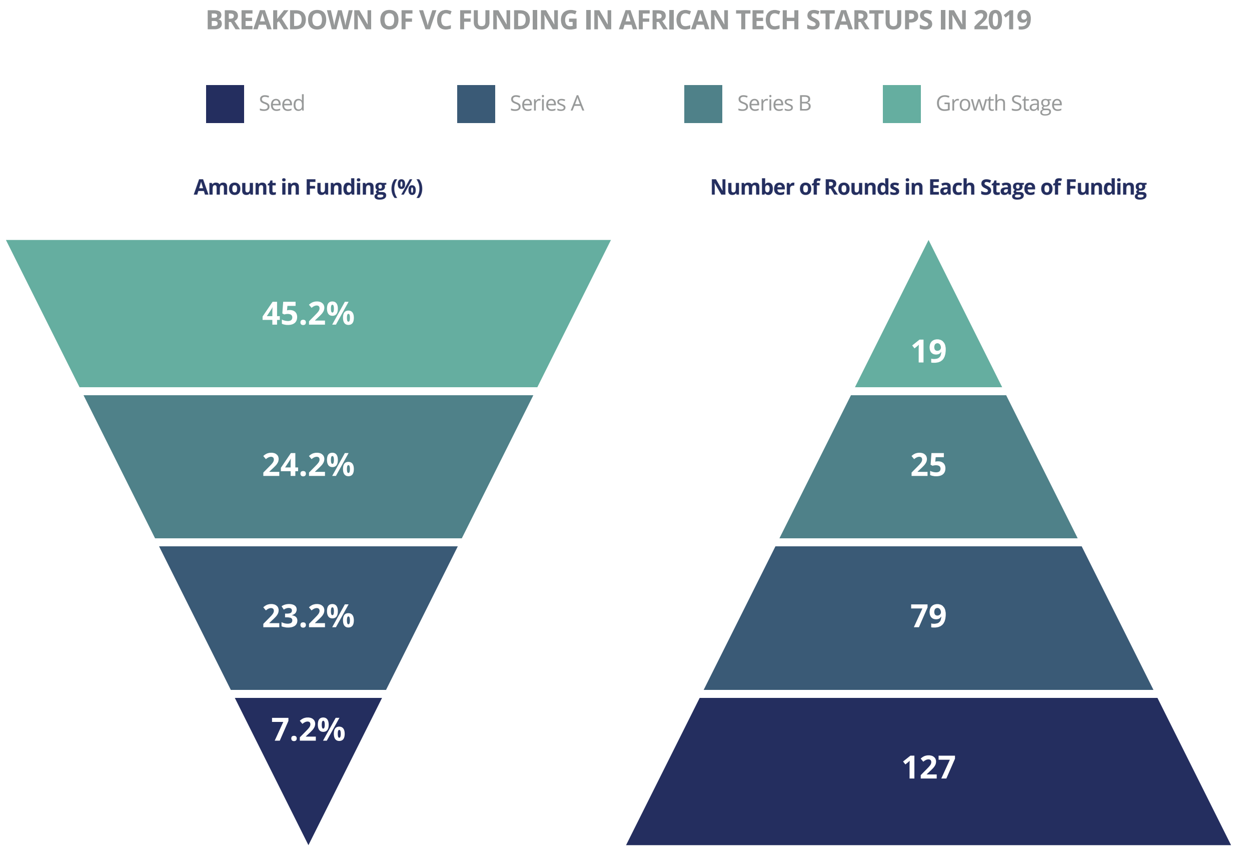
Since its inception in 2017, AfricArena has been a platform dedicated to supporting the creation of market access and investment opportunities for its ever-increasing community of founders, angels, corporates and VC investors. Designed with a digital approach, a series of impact events and interventions, and an open-source platform for all stakeholders, all based on principles of open innovation and entrepreneurship, the AfricArena brand has rapidly gained enormous credibility in the ecosystem. This report aims at providing all interested parties knowledge about the trends seen in the African tech sector.

Africa is rising. Over the past four years, Africa's tech sector has been one of the highlights of the continent's economic narrative. A key contributor to this is the strong increase in the foreign direct investment we have witnessed in African tech startups growing from $300 million in 2016 to over $2 billion in 2019 (Partech reports 2016 - 2019).

2019 was also a milestone for trade in Africa. The African Continental Free Trade Area (AfCFTA) entered an operational phase to become the largest Free Trade Area in the world to further drive the continent's growth. Although we may still be far from practical application, this means entrepreneurs should over time have access to a much larger market, which will facilitate their international expansion.

## Africa's tech startup ecosystem is still short-funded in comparison to global counterparts

ESTIMATED GLOBAL VC FUNDING IN 2019




**KEY TAKEAWAYS**

Growth stage African tech startups attract the most amount of VC funding, receiving $ 912 million spread across 19 rounds.

Seed + stage startups attract the least amount of VC funding, receiving $151 million across 127 rounds.

NUMBERS PROVIDED BY (2019): Partech Africa & Crunchbase

While the investment trend looks positive, much remains to be done:

- The investment in the African startup tech sector still represents less than 1% of the overall global VC investment in tech startups worldwide (see infographics above). This also represents less than $2 per year per habitant of the continent.
- Investment remains highly constrained by the disparity between countries on the continent in terms of intellectual property, investment fluidity and exchange controls.
- Most of the investment (around 90%) is concentrated on Series B and Series C deals, many oversubscribed, leading valuation upwards. The early-stage investment cluster from Seed to Series A is largely undersubscribed and unstructured, considerably slowing down the pace of startups development and the associated job creation potential. This early-stage development starvation, due to lack of seed funding, skills shortage and difficult market access, is the primary bottleneck to tackle. Hence the 'inverted pyramids' graphics shown above.
- Corporates are still in the early days of getting active in African innovation space. More pervasive Open Innovation and increased corporate VC activity may have an enormous impact potential in the years to come.

While we are writing this report, the COVID-19 impact is creating uncertainty on the economic future of the continent, as well as its tech sector. This is largely due to the fragility of its young ecosystem and the large majority of entrepreneurs that are not supported by investors and local government. While we can count on the resilience of African entrepreneurs, much will need to be done to save the enormous potential of the sector.

This report aims to provide a holistic view of the situation as of early 2020 to inform the ecosystem's future trends. It provides perspectives from founders (a survey conducted by AfricArena research team in January 2020), investors reports, interviews and corporate inputs (AfricArena's interaction with over 15 international corporates focused on innovation in Africa).

We hope you will enjoy it.

**Authored by**

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Papama Nyati

# EXECUTIVE SUMMARY

In 2019, according to the latest Partech report, African startups raised two billion dollars in venture capital funding - which represents 2% of Softbank's Vision Fund 1. Tough this is a 108% increase in the total funding raised in 2018, and a further increase of 53% from 2017.

Fintech, Healthtech and Off-grid tech startups attracted 63% of the funding in 2019. Fintech (financial inclusion technologies) once again leads the way in investment and the impact made is allowing basic financial services (access to loans, small agricultural financing, insurance services) to reach the remaining 66% of the unbanked in Africa, according to the World Bank.

Pay-as-you-go decentralized energy products, while being financial viable, are on the rise as investors & public institutions believe it may solve the gap in energy supply particularly in rural Africa. These renewable energy companies are flourishing across the continent and are receiving interest from leading energy corporates such as EDF, Total or Eon as well as from major venture capitalists.

Healthtech is the third most dynamic space in tech in 2019. Multiple solutions are growing across the continent, leveraging the large penetration rate of smartphones to improve the appointments making processes, facilitate auto-medication, lower the cost of diagnostics and provide medical education to medical staff. This sector has achieved the highest growth rate from 2018 to 2019, with an increase of 969% year-on-year in funds raised.

From the survey conducted by the AfricArena research team in January 2020 on a sample of its tech founder community, it appears that major challenges for tech entrepreneurs starting their businesses in Africa are relative to access to funding, customer acquisition and workforce hiring. Although opportunities to access risk-tolerant funding from venture capitalists have increased, it remains very low compared to Europe, the US or China. Most founders use their personal savings and love money (family & friends) to finance the early stage of their venture. This can restrict innovation to those who have savings or access to love money. In many cases the critical access to Seed - Series A funding is acutely lacking, even for startups with traction.

The most efficient early-stage investors are those that take a hands-on approach by helping entrepreneurs accessing customers, by providing them strategic advice and in-house operational teams with expertise in critical fields such as marketing, product, sales automation as well as access to business networks. The 2/20 model, used as financing standard in the venture capital industry may not be relevant in Africa as startups may need more time to reach their potential than those operating in more mature and structured markets.

2019 have seen more than 16 new venture capital funds set up to invest in African tech startups, some of which are in the early stage space. We have observed the development of funds focusing on improving the gender-balance in the VC industry which look to close the gap in women-led startups that are financed. Most of the money invested in funds remains from outside the continent, with a large part from Development Finance institutions even though an increasing number of foreign private foundations and corporates are investing in this asset class.

Investing in early-stage startups has appeared to be slowed down with the current investor landscape being very fragmented and its requirements or ways of doing business varying.  Looking to solve this issue, a collective of VCs from across the continent has been set up and is currently developing new standards for the industry such as terms sheets, due diligence checklists and other tools. They will be publicly available on an independent platform. AfricArena is involved with its partners in coordinating this initiative.

Despite a few significant exits, the merger & acquisitions of startups in Africa remains the exception which impacts the number of angel investors willing to finance very early stage ventures and support them to scale. We are glad to observe the development of new angel investment groups across the continent and the emergence of training programs to reinforce their impact such as provided those by ABAN, Afrilabs, African Angel Academy or VC4A.

Talent has proved to be a key success factor in the capacity of startups to deliver their promises. Big steps have been made in Africa with a growth private and public initiative to develop vocational schools, especially for the developers. However, as these initiatives are quite recent, there is a limited number of experienced professionals able to lead projects and train newcomers. In the meantime, the ability of early stage startups to attract talents relies mostly on convincing them through strong visions and attractive corporate culture. Indeed, liquidities are often restricted and equity stakes have a limited perceived value due to the current low number of startups that have been acquired or filled to IPO. Some progress needs to be done on the incubators and accelerators side to guide startups by recruiting strong core teams and developing internal culture, especially since accessing talents in Africa is often enabled by the power of the network.

The number of tech hubs supporting entrepreneurs on the continent have surged over the last years, but its efficiency varies from organisation to organisation as highlighted by AfricArena's founders community. A key focus should be put on product development where incubators and accelerators linked to corporates can help startups to build their product closer to their customers. Lack of experienced staff in these organizations may prevent the startups from accessing business networks and investors. Initiatives are currently being deployed to reinforce incubators capabilities. On the financing side, a growing number of incubators are setting up micro-vc funds to support their entrepreneurs with amounts varying usually between $40k and $150k.

Tech entrepreneurship is becoming a key pillar in the development strategy of some African states as the startups enabling leapfrogs may have an impact far beyond the digital sector. Tunisia passed as the first African country to set up a startup act, followed by Senegal at the end of 2019 and multiple countries are now working on new regulations. The latest aims to offer incentives for entrepreneurs to create startups, support them along their journey, incentivize investors to invest and finance the development of mature tech ecosystems.

Open innovation may take on several forms. This includes initiatives to bring external knowledge into the corporation in order to stimulate the internal innovation process, gaining marketing intelligence in a continent where available data are scarce, partnering and acquiring companies to access new markets, save time or reduce risk, and PR objectives to show an innovative facade.

Corporates designing integrated open innovation programs usually start by sourcing startups through different channels (e.g. open innovation challenges). The underlying idea is to identify startups that are complementary to their business to support them and make them grow within the corporation (e.g. incubation, developing Proof of Concept (PoC), venture investment). Multiple corporates are now starting open innovation programs in Africa but those programs do not have the same scope as the ones in more matured markets. From our experience, and those of our partners, these programs often involve local organisations in various countries across the continent, which lead to a fragmented open innovation program with a substandard impact.

To succeed in their open innovation strategies, corporates need a clearly identified goal. They also need ownership and ambition at a sufficient hierarchical level and involvement from business units affected by the open innovation challenge - and not only the innovation departments. These are key elements to overcome the processing burden and multiple challenges that may slow down a potential partnership or integration when relevant startups are identified.

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I.

# GOAL OF REPORT & WHAT IS AFRICARENA

The mission of AfricArena, a startup born in Cape Town in 2017, is to promote, support and help accelerate the African tech innovation space. AfricArena aims to boost African innovation by connecting entrepreneurs with the right investors and corporates. To achieve this goal, we have articulated this initiative around our core value proposition: running corporate open innovation challenges.

Throughout the last three years, our model took us across the main African tech hubs to places such as but not limited to, Lagos, Nairobi, Cairo, Tunis, Kigali, Dakar, and Johannesburg. During our journey, we met with local and international investors (angel investors, VCs, CVCs) that actively invest in Africa, as well as corporate executives, African policymakers, leading incubators & accelerators and some of the best African tech entrepreneurs. Meanwhile, a part of our team was promoting the African tech ecosystem around the world throughout different events. Last year, we ran events with African entrepreneurs in New York, San Francisco, Paris and Tokyo.

The essence of our report comes from African entrepreneurs. Prior to this report, we ran a survey among our entrepreneur community. Positioned at the intersection between ecosystem players, startup founders, investors and corporates, we have tried to better understand what are the challenges that entrepreneurs are facing when developing tech startups across the continent. We interviewed over 50 entrepreneurs who took part in the AfricArena Summit 2019, growing ventures at various maturity stages (mostly concentrated in seed and Series A funding rounds) and spanning a large number of industries from Fintech to Agritech through Edtech, Healthtech, Logistics and many more. These entrepreneurs were selected through our 2019 AfricArena Tour across the continent and are, in our view, above the average in terms of the solutions they propose and the way they deliver them. This survey has raised numerous questions, points and thoughts. We have decided to unpack the survey response so as to understand the facts that make the African entrepreneurial journey. In this report, we use our past experience and leverage knowledge from many great sources such as the Partech 2019 report, the work of Village Capital and GreenTec Foundation to provide an exceptional insight into tech innovation in South Africa. You will find that we will highlight the trends in innovation across the continent across varying industries. We will also provide information about funding, leverage our experience of dealing with corporates, and deep dive into open innovation in Africa.

Our goal is not to provide a detailed report of a specific industry nor an exhaustive list of tech startups or tech incubators. Our objective is to give global insights on trends and open innovation in Africa by leveraging our past experience. We are taking a different and broader approach, thanks to our knowledge and awareness at the cross of open innovation, entrepreneurs developing tech startups and tech investments to draw a picture of the state of tech in 2019.

As we are writing these lines, the world is facing its second influenza pandemic. The COVID-19 social and economic impact will be hard, and the reality is that numerous early-stage startups will not see the end of the tunnel. “We're deep in the valley of death and I'm currently in survival mode” is an extract from one of the last received emails coming from a Pre-Series A African startup founder. However, this crisis is a global accelerator of digitalization and since there is nothing more agile than a tech startup, we can hope that, with the right support, some of the greatest success stories of the continent will be written during these coming months.

We hope that this report will contribute to inspire you to continue investing in the continent’s entrepreneurs, one of its very best assets for the future.

2.

# OVERVIEW: TECH INNOVATION IN AFRICA IN 2019

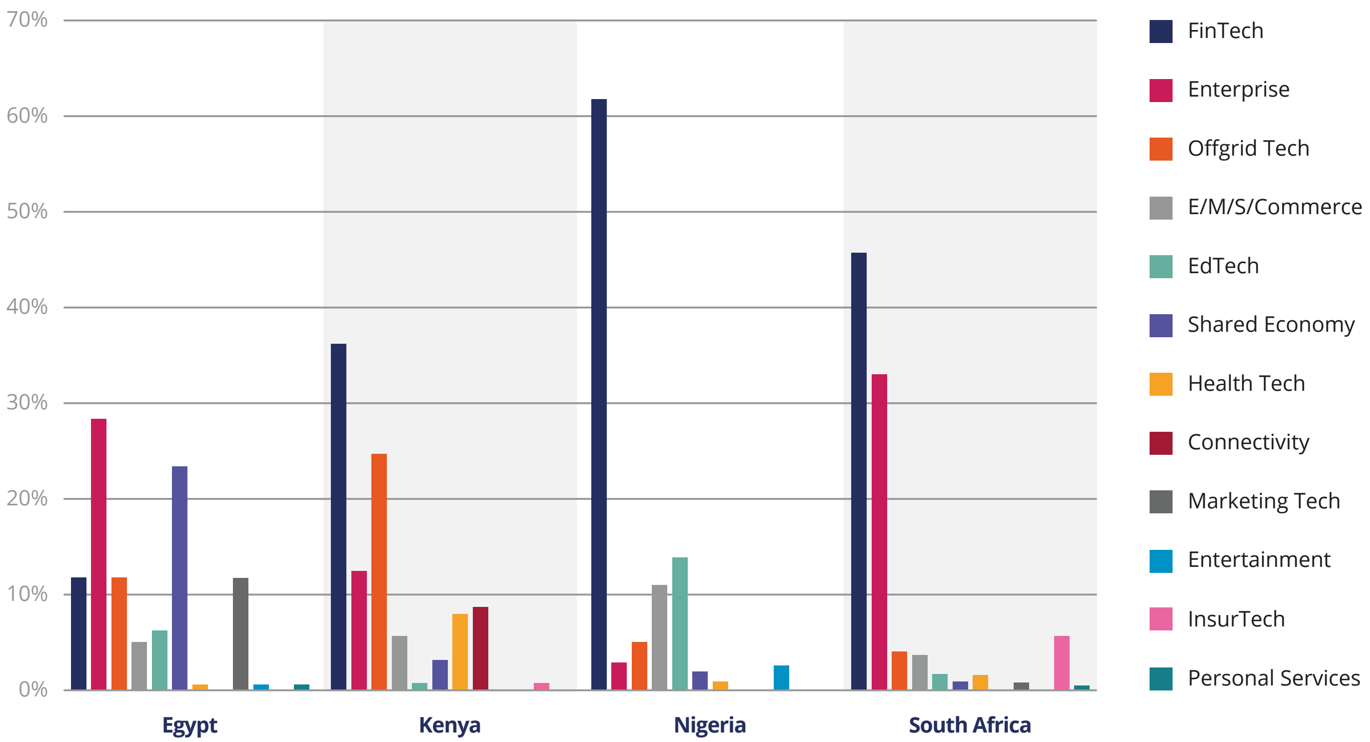
2019 witnessed a consistent growth trend in startup activity, technological ingenuity, and funding (in various forms) across different sectors and countries throughout Africa. On the other hand, we also noticed a trend that this growth was only in a few sectors and countries, and that a select few companies attracted the vast majority of the funding received. On the sector front: Fintech, Off-grid, and Healthtech grabbed most of the funding. The countries that saw the most funding transactions were: Nigeria, Kenya, Egypt, and South Africa -securing a whopping 85% of the total funding. This consistent, yet incremental, growth in funding reflects increasing investor confidence in startup businesses across the continent's major hubs. This growth also reveals that investor confidence is rested on businesses with proven (and differentiated) concepts, defined markets, and market traction. Furthermore, venture funders have more confidence in businesses with previous rounds of funding as this is an indicator that the aforementioned checklist is somewhat met.

The qualitative and quantitative analyses of venture funding in African tech startups is a recent research domain which would excuse the disparities between reports on the exact facts and figures. The methodologies may differ (thus values differ as well). However, the common thread is the increasing traction received in African tech innovation which is an interesting story that needs to be delved into.

**What are the local conditions in the sector or country that allows innovation to happen? Which sectors received the most funding and how much was raised? Who are some of the recipients of funding - how is their business model unique and sustainable?**

SECTOR BREAKDOWN IN TOP 4 MARKETS

Partech Analysis 2020



These are the questions that will be explored in this section as we try to paint a picture of the facts and figures. The earliest consolidated recording of total funding and deals in African tech dates back as recently as 2015, where total deal value was estimated at $300 million. The African startup ecosystem has come a long way in such a short period of time. 2019 has again been a progressive year for tech startups across Africa with a growth rate of 74% in year-on-year in investments into tech startups, accounting to an estimated total of $ 2.02 billion.

## 3 Sectors received the majority of total funding in 2019

2019 saw the biggest development in fintech, off-grid tech, and health tech startups, which accounted for 62.9% of the total funding according to Partech findings.

- Fintech continues to lead the way for startups in Africa with $836m invested in 2019, accounting for 41,4% of the total funding and +122,3% year-on-year (YoY) growth. The investment represented only $119m in 2017.

- Off-grid tech startups raised $247m in 2019, accounting for 12,2% of the total funding and +27,3% year-on-year growth. The investment represented only $120m in 2017.

- Healthtech startups raised $189m in 2019, accounting for 3% of the total funding and a staggering +969% year-to-year growth. It represents an increase of 800% since 2017.

2.1

# FINTECH STARTUPS CONTINUE TO RISE

**“Banks can also do the things we are doing, only that they are bigger and slower. Our greatest advantage is speed and if we are not growing fast, then there’s really no point.”**

**Adeyinka Adewale**
Co-founder & CEO, Kudi (Nigerian fintech startup that raised $5.8 million Series A round in March 2019.)

Financial technology, or fintech as it is commonly known, is a way of using advanced technologies to improve financial services, highlighting that: “the ‘tech” in Fintech is the employing of emerging technologies, such as AI, blockchain, analytics and big data.

Most published reports, dating back to 2015, identify fintech as among the most funded sectors in the continent. In 2019, venture capital that went into the Fintech space in Africa reached an all time high - $836 million across 65 deals. Using the data uncovered by Partech since 2017, the Fintech space has averaged a YoY growth rate of 50%. Africa’s trendiest sector and the total amount it received in VC funding in 2019 (as varied and disputed it is, like other numbers) is still miniscule to that of the United States which reached over $46 Billion across 2800 deals in the fintech space. In addition to being the most funded sector, Fintech startups in Africa experience a lower percentage in shutdown rates (compared to other industries) according to the report, Tracing the Success & Failures of Africa Startups by Greentec Africa and Wee Tracker (2020). The research spanned the period of 2010 to 2018, with a sample size of 500 startups across different sectors and markets. Across all sectors, 54.2% of businesses failed. Fintech investments had the lowest failure rate of 32.14%.

## So where did the funding go?

SOME OF THE BIGGEST TRANSACTIONS IN THE FINTECH SECTOR, 2019
(Listed in no particular order, using $.)

| Company | Country | Raised |
|---|---|---|
| Tugende | Uganda | $5 million |
| Rent To Own | Zambia | $1.1million |
| MoneyFellow | Egypt | $1 million |
| Kudi | Nigeria | $5 million |
| Centbee | South Africa | $1.4 million |
| Chipper Cash | Ghana | $2.4 million |
| PayItUp | Zimbabwe | $13 million |
| LulaLend | South Africa | $6.5 million |

Why is Fintech booming in Africa? A large part of the reason is due to the financial systems and infrastructure (or lack thereof) that have left around 66% of adults on the continent unbanked, according to the World Bank. These Africa-focused financial technology startups are not so much disrupting traditional financial services, but rather building up a historically underdeveloped industry. By creating a raft of tech-based products and solutions -including mobile money, online payment processing, lending, and investing- startups are plugging large gaps that exist in local financial service industries creating a ‘leapfrog effect’.

A milestone in advancing Fintech in Africa was the introduction of M-Pesa in Kenya. M-Pesa revolutionised financial services in creating a mobile money service allowing users to pay bills and each other without necessarily having a bank account. As a result between their launch in 2007 and 2019, financial inclusion in the country has grown from 27% to 83%. This technology has paved the way for further participation in advancing people’s access to financial services which now includes insurance, credit scoring, data analytics and more. Disrupt Africa’s Tom Jackson asserts that, “in Africa, startups operating such platforms are able to significantly address the major issue of financial exclusion on the continent and thus promote development in all sorts of other areas." Nowadays even without banking infrastructure, only a mobile phone is required for anyone to access financial services. Tosin Eniolorunda (founder and CEO of TeamApt, a Nigerian FinTech) explains that financial institutions are experiencing rapid changes across the continent and mobile phones have become a powerful tool for financial and social inclusion. The reach of the mobile money sector has grown wider than that of local banks.

The development of financial technologies and business models on the continent have paved the way for other critical sectors and segments that require financial services. The financing of the agriculture sector makes a good case for the rise of Fintech solutions. A major hurdle for farmers in Africa is a lack of access to the capital resources needed to fully utilise Africa’s vast non-cultivated arable land. The primary sector in Africa lacks the financial services that allows farmers to improve their efficiency, adopt new technologies and connect with new markets. With the facilitation of governments and multinational organisations, Fintech solutions provided by startups have been deployed to a great extent in recent years with the mission of bringing African farmers into the formal economy. Such deployed services include, credit access, digitised form of payments and insurance instruments, and access to markets (which normally comes in the form of digital-based marketplaces). A good example of a startup that is addressing the issue of market access for farmers is Twiga (previously Twiga Foods) in Kenya. Twiga uses a mobile-based, cashless, B2B food supply platform to improve the food supply chain from farmers to markets. This resulted in Twiga buying produce from its network of over 17 000 farmers and selling to its 4000 vendors across Kenya, with payments coordinated via the Twiga mobile app using M-Pesa. There are many more platforms that have emerged with creative ways of helping farmers, including crowdfunding and direct-to-consumer marketplaces. Looking beyond farmers, given that Africa has a large population that is unbanked, a lot of financial services deemed necessary in today's world bypass them. Some key financial products include insurance and savings and wealth-building instruments. The developments in Fintech can be observed through the emergence of startups providing creative solutions speaking to localised financial problems.

One of the most funded Fintech startups in African is Nigerian-based Flutterwave. Four years into their existence they have grown to become one of Africa’s biggest payment technology companies having processed payments worth over $3 billion in over 150 currencies. Flutterwave aims to tackle the fragmented payment systems in Africa through a single-wide infrastructure that connects the various payment systems basically, “making it easy for a merchant in Lagos to receive payment from a customer in Nairobi”, says co-founder & CEO Olugbenga Agboola.

During its early stages, Flutterwave was bootstrapped for 18 months while building its minimum viable product (MVP). By the time they secured their Series A, CEO, Olugbenga, acknowledged that his experience working in the payment and technology space brought a lot of credibility into the venture. In addition to the CEO's work experience in the sector, the initial team at Flutterwave consisted of engineers that were colleagues in previous related jobs. This collective experience in the space allowed the initial team to hit the ground running in developing their product with limited capital spent on tech development.







Of course, no business venture exists without having challenges. A major pain-point in the growth of Flutterwave, as admitted by the CEO, is when "technology fails". "Financial systems are almost nothing without technology - technology pretty much scaled financial systems everywhere. There are those times when technology fails without warning and everything crumbles," says Olugbenga. However, despite the occasional failure of technology, rejection by potential clients, the heavy regulations imposed in the financial services sector, Flutterwave has battled on raising over $55 million, with investors including Y Combinator, MasterCard, CRE Venture Capital, 4DX Ventures and more.

Just like Flutterwave, Nigerian-based Kudi also aims to boost financial inclusion in emerging markets however they mainly differ in their primary market.. Kudi spotted a gap in the access to payment technologies among many Nigerians. Founded in 2017, the co-founders noticed many digital payment solutions in Nigeria were detached from the majority of the population, who deal predominantly with cash and lack access to commercial bank services in rural parts of the country.

Kudi's unique selling proposition is providing banking and financial services by leveraging conversational interfaces, natural language processing and artificial intelligence - all this gives the user a frictionless experience. Their entry-to-market offering was introducing a chatbot on Facebook Messenger that would help people with transactions, which was a first in Nigeria.

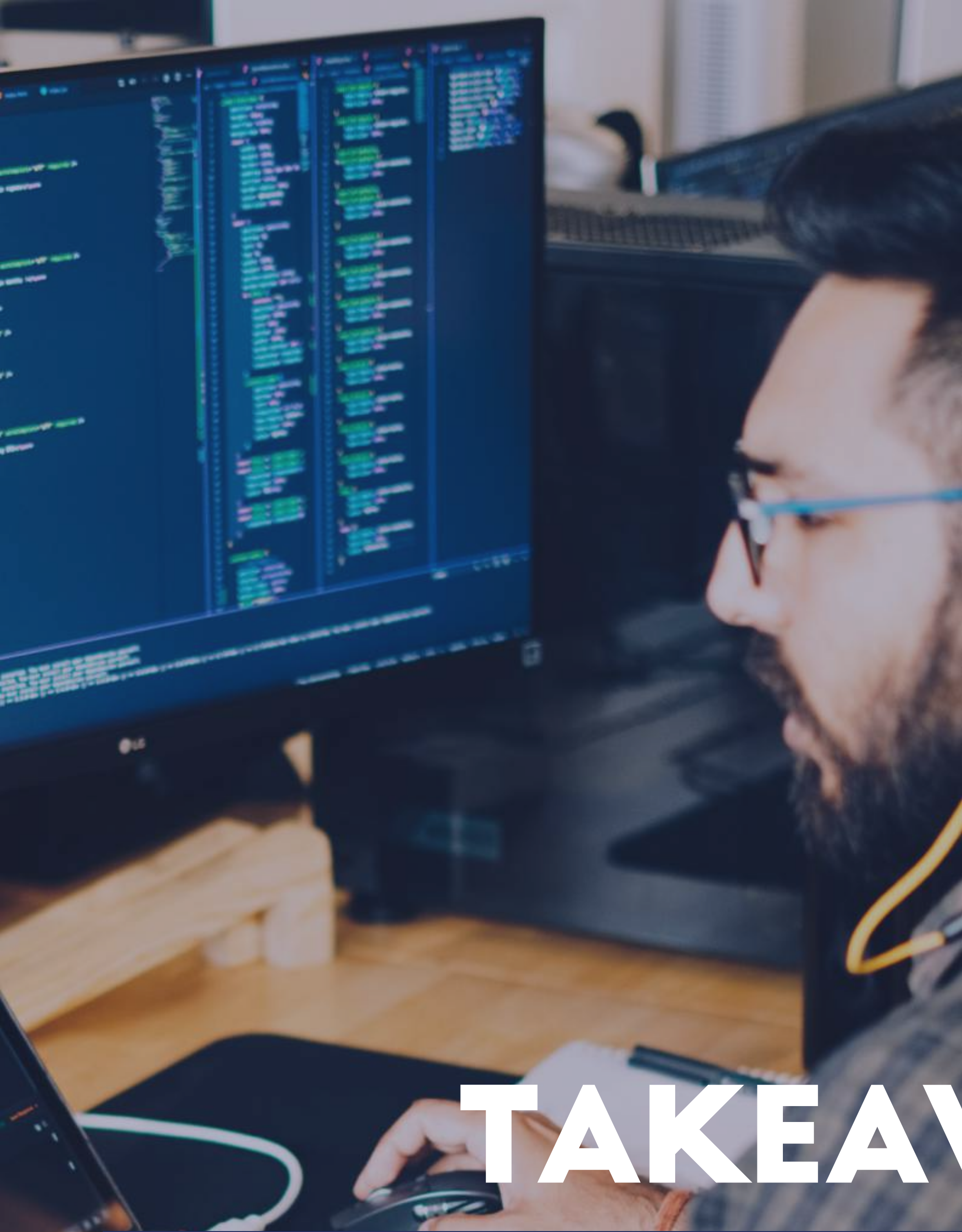
The founders spent six months creating an MVP, and they admit that a major challenge in the early stages was affording the tech skills needed to build projects. Fortunately, as in the case with Flutterwave, the core team had a technical background and experience working in payment solutions. The experience and skills of the founding team enabled them to write the lines of code needed, in addition to using personal funds to cover essential costs that came up.

Kudi received a pre-seed investment of $120 000 from Y Combinator which went towards working capital to pre-fund their intended transactions with banks and telecommunications companies, in addition to scaling its engineering team. The company's most recent round was a Series A worth $5.8 million, in March 2019.

A pain-point for the company has been the highly regulatory nature of the financial services industry. Furthermore, the constant tweaking of these regulations in Nigeria tends to favour the big payers, says Kudi CEO, Adeyinka Adewale. Despite the regulatory hurdle, the CEO asserts that Fintech startups' advantage over major financial institutions is the agility to grow fast: grow fast to reach impressionable numbers that will attract investors - secure growth capital - and attract "high achievers into the team in order to sustain the growth.

In reference to the graph reflecting the sector breakdown in the top 4 markets, we see that Nigeria, South Africa, Kenya and Egypt are at the forefront of startup activity in the Fintech sector, with Nigeria at the epicenter. Nigeria, as the "unofficial capital for fintech development in Africa" leads the way in terms of overall activity, VC funding, and deal volume. Nigeria is Africa's most populous country and its lead in fintech innovation and local penetration can be expected to continue. The digital payments industry in Nigeria remains significantly under-tapped. According to the Enterprise Development Centre (EDC) of the Pan African University, cash payment accounted for 95.3% of transaction volumes at the end of 2018. Increasing mobile and internet penetration has continued to climb in Nigeria presenting further opportunities to support online payments. The fact that the biggest transactions from 2019 belonged to Nigerian Fintech startups, speaks to the opportunity that lies in Nigeria's 99.6 million adult population.

Even though Nigeria leads the way in Fintech activity in the continent, in terms of financial inclusion, Kenya takes the top spot. According to the 2019 FinAccess Household Survey, put together in collaboration with the Central Bank of Kenya, Kenyan National Bureau of Statistics and FSD Kenya, 82.9% of the adult population has access to at least one financial product. Kenya's progression in financial inclusion is due to its positive regulatory environment, this was seen in 2007 when Kenyan regulators made the policy framework necessary to breathe life into Safaricom's fledgling M-Pesa. However, it can also be argued that Kenya's regulatory policies (or lack thereof) enforce no barriers to entry in Fintech and allows startups to operate under very little scrutiny. For example, Kenya's Credit Reference Bureau has blacklisted 2.7 million people for being unable to repay loans as little as $2 - owing to the easy tech-based lending solutions that emerge every day in Kenya. A remedy to such downsides in an innovative economy is for the government to create adequate consumer protection legislation while maintaining an enabling environment for innovation.



# KEY TAKEAWAYS

In 2019, not only did the African fintech space receive the majority of venture funding, it also had the lowest failure rate, at 32.14%, compared to other industries (according to Greentec Capital and Wee Tracker, 2020).

Many startup founders in fintech have an engineering background, meaning the team creates the platform themselves. E.g. Flutterwave and Kudi, who worked in payment technology prior to starting their company.

Africa's "leapfrog" advantage with mobile money means that we can expect further developments in this sector as the there are many more people left unbanked in Africa remains underserved.

2.2

# OFF-GRID TECH

## “Decentralisation in the energy sector.”

This is the response given by a co-founder of Lightency - a Tunisian-based green tech startup harnessing blockchain to enable sustainable energy use - when asked about the trends in the energy sector in relation to bridging the gap in energy access and usage for the off-grid market in Africa.

Africa’s power grid is struggling to meet surging demand from the continent’s rapidly growing and urbanising population. According to estimates by the International Energy Agency (IEA), Africa’s demand for electricity has outgrown supply every year since 1990, creating a widening power deficit which Africa’s major power providers are struggling to close[1]. One of the key hurdles holding Africa back is lack of investment in infrastructure. The lack of roads makes it difficult to build new grids, and this difficulty is exacerbated by the growing population.

In total, an estimated 600 million homes in Africa still do not have access to reliable electricity. However, the application of renewable energy technology has the potential to bridge this gap, with a surge of startups emerging with innovative solutions and approaches.

Technologies, products or facilities that do not rely on connectivity to a main electric grid to function, but rather, use alternative power options, are commonly referred to as “off-grid”. An alternative energy supply that has emerged as a predominant solution in recent years is off-grid solar solutions harnessing Africa’s abundance in solar to produce energy.

A 2020 report from business consultancy Kleos Advisory Ltd otes that due to the lack of electrification and access to the grid in Africa, the continent’s off-grid solar systems market has an annual potential of $24bn[2]. This commercial opportunity is largely based on the popular “pay-as-you-go” model adopted by many off-grid energy providers (solar and otherwise). The pay-as-you-go model allows the consumer to rent the product and service until it is fully paid off, after which they own full ownership.

The report states: “Given the ability of solar-fintech solutions to deliver power to African households along with the affordable financing to pay for it, solar could be the breakthrough technology that finally connects Africa’s vast off-grid communities.” This combination of solar and fintech has been an ongoing growth trend that sees a number of solution-providers being launched, proving their concept and business model in relatively small time, receiving funding, scaling, receiving further funding, and making an impact in off-grid communities across the continent.

**“For African countries, energy is a critical need to support rapid economic development. Solar power has the ability to reach the most isolated households and deliver life-changing technology that connects homes to the modern digital economy.”** [3]

**Simon Bransfield-Garth**
CEO, Azuri (Raised $26 million in funding from Marubeni and IP Group in 2019.)

[1] World Energy Outlook 2019, IEA.

[2] Transformational Tech 1(4): ‘The grid won’t connect Africa, but solar can’. Kleos Advisory Ltd. 2020.

[3] Transformational Tech 1(4): ‘The grid won’t connect Africa, but solar can’. Kleos Advisory Ltd. 2020.

The off-grid sector in Africa has been a consistently top-funded vertical for venture capital in recent years; going from $120 million in 2017, to $ 194 million in 2018, to $ 247 million in 2019 and averaging a +44.5% YoY[4]. In 2019, off-grid tech had a 12.2% grip on the total VC funding of African tech.

## So where did the funding go?

SOME OF THE BIGGEST TRANSACTIONS IN THE OFF-GRID SECTOR, 2019
(Listed in no particular order, using $.)

| Company | Country | Raised |
|---|---|---|
| Karmsolar | Egypt | $25 million |
| Rensource | Nigeria | $20 million |
| Daystar Power | Mauritius | $26 million |
| SolarNow | Uganda | $7.5 million |
| Redavia | Ghana | $2 million |
| The Sun Exchange | South Africa | $1 million |
| Sistema.bio | Kenya | $12 million |
| Arnegy | Nigeria | $9 million |

Almost a quarter of a billion US dollars has been invested into off-grid tech startups in Africa in 2019 alone. Noticeably, the vast majority of funded startups in off-grid tech deploy solar fintech solutions. The dual opportunity that exists stems from the reality that many households/individuals that rely on non-renewable energy are also financially excluded from the formal economy (financial and insurance services, etc.). Given this, there is a transformational economic impact being made by companies providing clean energy solutions, as a payment collection system is embedded into the exchange. As stated in the report by Kleos Advisory (2020), "the combination of solar and fintech is driving an economic transformation in Africa, making the 'unbankable' bankable and embedding African consumers in the digital economy."

A common modus operandi among young providers of off-grid solutions is the pay-as-you-go (or "paygo") model. This model is attractive to investors and energy-focused corporates because of the cashflow it brings, and (to a lesser extent) the possibility of upselling additional products and services to new markets. How the paygo model normally works is that residential customers in remote areas are provided with a solar-generation unit, usually backed up with a battery, and the homeowners make lease payments over time as they benefit from the electricity. Payments are often made via mobile money, particularly M-Pesa in Kenya and Tanzania; there are also alternative payment methods like scratch cards, direct cash payments, or mobile phone credit.

[4] Africa Tech Venture Capital Report, Partech Africa, 2018 & 2019

On the downside, because customers cannot pay for a solar system upfront, it means the companies must carry that debt on their balance sheet. Furthermore, Ashwin West, from African Infrastructure Investment Managers (AIIM), argues that scale is critical for a pay-as-you-go model to work over the long run - without scale (i.e. a large customer base), fixed costs will strain working capital.

Solar power has the ability to reach the most isolated households.

Energy is a critical need to support rapid economic development.

However, it is important to contextualise scale in the off-grid solar sector. Different companies in the off-grid solar sector occupy different parts of the value chain, which results in multiple growth strategies, and for investors, this stimulates speculation on where value is really being created. Segments of this value chain include: product manufacturers, service-platform developers, distributors, and integrated service providers. The most notable case of a fully integrated service provider is M-KOPA which operates in Kenya, Nigeria, Tanzania and Uganda. Having raised over $160 million over 11 rounds, M-KOPA's method works by having a customer collect the system in an M-KOPA service centre, or an affiliated M-KOPA dealer, and make payments via M-Pesa. Their proprietary M-KOPAnet™ platform allows for accounting, CRM, inventory tracking, and the capturing and processing of huge volumes of data, all in one. It is such integrated models that attract investors and big corporates to buying into off-grid tech startups.

## Big corporates are adding fuel to the off-grid startup sector

2019 saw massive deals being made between small-to-medium-sized companies and big corporates in the off-grid tech space. Japan's Mitsubishi put $50 million into U.K.-based BBOXX, a provider of pay-as-you-go solar home systems with a strong presence in sub-Saharan Africa.

French energy giant Engie acquired Mobisol, a leading home solar provider in East Africa, building on Engie's long list of investments in the off-grid sector. Another prolific startup within Engie is Tanzania-based PowerCorneroperates mini-grids, the cheapest method of electrifying a group of users in rural areas.

The number of big corporates making investments into off-grid renewable startups has grown significantly in recent years. Africa, and particularly East Africa, is by far the largest destination for off-grid investment to date. Total, EDF, E.ON and Shell are among the strategic investors putting money into the market.

## Cases of off-grid innovation (from startups that have showcased at AfricArena Summit and recently raised funding)

The premise behind Sun Exchange is selling solar cells (the parts which make up a solar panel) to online buyers around the world and leasing them to schools and businesses in South Africa. The buyers then receive monthly payments based on how much electricity is used. Its 2019 crowd-funding campaign with Uprise.Africa, which raised $300 000, will go towards increasing its user base to a target of 10X in the next two years.

Rensource. With a recent raise of a $20 million Series A round, co-led by CRE Venture Capital and the Omidyar network, Rensource shifted its operating strategy from residential to large urban markets. Using the provision of solar-based micro utilities as an entry point, this Nigerian startup provides tools and services to support the digitalization and productivity growth of SMEs in West Africa. Another off-grid startup that raised considerable funding in 2019 was Arnegy with $ 9 million. Both companies share a similar approach and market, and lead the pack in Nigerian startups trying to electrify the country.

The supply of clean energy comes in different forms. As much as the focus has been solar-powered solutions, another off-grid tech solution that is important to Africa's sustainable future and steadily growing in use is clean fuels, such as liquid petroleum gas (LPG). LPG is a flammable mixture of hydrocarbon gases, and serves as an environmentally friendly alternative to biomass, coal or kerosene. In the case of Africa, where hundreds of millions of people lack access to clean cooking facilities, there are tech-based solutions that have emerged to provide affordable, fast-deployed and energy-efficient access to cooking for households not connected to the grid. Case examples are KOPAGAS (Tanzania) and PayGas (South Africa) - both of which were finalists for the 2019 Clean Cooking Energy Challenge by Engie and AfricArena. Both projects deploy a "pay-as-you-gas" model, where customers buy gas when needed and only pay for the quantity used. Furthermore, both companies make use of digital solutions through cellular mobile, efficient payment platforms and data analytics.

PayGas has an intellectual property-powered (IP) advantage in South Africa that will serve it well in reaching its target of 146 000 households and 52 refill stations by 2023. One half of PayGas' IP covers, "digital payment regulating fractional dispensing of gas", which allows a "cashless" solution where people can pay through GSM using phones connected through 2G or 3G for the amount of gas they want to or can afford to buy. Where customers must travel to refill their gas cylinder in the PayGas business case, KOPAGAS has scaled itself to meet the challenge of last-mile delivery. KOPAGAS designs, manufactures and deploys Internet of Things (IoT) devices and software that enable customers to pay and consume small amounts of gas at a time using mobile wallets such as M-Pesa, whilst providing timely and granular usage and payment information. Since its inception in 2014, KOPAGAS has grown fast to build one of the biggest gas distribution networks in Tanzania. In early 2020, the startup was acquired by UK-based Circle Gas Limited for $ 25 million, the largest-ever pure private equity investment in the clean cooking technology sector. The new venture will give KOPAGAS the fuel needed to meet its goal of switching "1 million people in Tanzania from charcoal to LPG in the next 3 years".

# KEY TAKEAWAYS

With Africa's energy needs ever growing, a move towards a decentralised provision of energy is key to meeting the demand.

While a variety of technologies/products/services are considered part of the off-grid ecosystem, solar home systems have been the star of the show from an investment perspective, and particularly pay-as-you-go systems.

2.3

# HEALTHTECH

## “The health space is starting to move towards digital innovation and we're adjusting well to future proof our existence.”

**Wandile Khumalo**
CEO, Syked (Won the 1st Prize for the Mental Health Challenge by Sanofi, at AfricArena 2019.)

Africa has faced many endemic diseases - coupled with inadequate infrastructure and little skilled healthcare personnel to treat the growing population - and it impacts the health and productivity of millions. Despite the fragile health systems in Africa, there’s a growing number of digital-based initiatives (commonly referred to as “healthtech”) to fight against recurrent infections and diseases. Owing to an increasingly connected, mobile-first population, healthtech is booming in Africa. Across the continent, startups are using tech-based solutions to help tackle the challenges in delivering high-quality healthcare, particularly to rural and resource-deprived areas.

## “I believe healthcare is ripe for disruption and innovation and that couldn’t be more true than it is [in Africa].”

**Dr. Richard Friedland**
CEO, Netcare (Since 2019, Netcare has partnered with Founders Factory Africa to fund and accelerate 35 African tech startups in the healthcare sector.)

Funding in the healthtech sector in Africa has seen significant growth in recent years with the startup healthtech sector attracting the largest number of deals and amounts invested.

According to Partech Reports, startups in healthtech received $18 million in funding in 2018, and $189 million in funding in 2019 - representing an increase of 969% YoY. In 2019, healthtech had a 9.3% grip on the total VC funding of African tech.

## So where did the funding go?

**SOME OF THE BIGGEST TRANSACTIONS IN THE HEALTHTECH SECTOR, 2019**
(Listed in no particular order, using $.)

| Company | Country | Raised |
|---|---|---|
| mPharma | Ghana | $13.5 million |
| 54gene | Nigeria | $4.5million |
| MyDawa | Kenya | $3 million |
| M-Tiba | Kenya | $1.5 million |
| Neopenda | Uganda | $1 million |
| mDaas | Nigeria | $1 million |

[19] AFRICA TECH VENTURE CAPITAL REPORT, Partech Africa. 2018 and 2019.

[20] Ibid.

Digital-based projects are emerging across the continent, tackling issues such as: telemedicine and eLearning projects; use of mobile phones to support the delivery of healthcare, awareness and education; remote data collection; remote monitoring and home care; communicating treatments to patients; and reporting and responding to disease outbreaks and emergencies.

Healthtech is broad. The above startups vary in their sub-sectors. A general consensus on which sub-sector attracts the most customers, partnerships or investment is difficult to pinpoint. Nevertheless, it can be argued the economic and social-impact performance of sub-sectors can be determined by the region in which it operates. Despite the astronomical rise in healthtech funding in 2019, this by no means infers equal distribution, particularly on a region-to-region basis. Research done by Briter Bridges in the first quarter of 2020, reveals that Africa's major economies, Nigeria, South Africa, Egypt, Kenya and Tunisia, feature a greater diversification in the value chain of healthcare provision compared to their continental counterparts. As the larger economies, these countries have the benefit of having a bigger middle-income market that can afford varied healthcare services. This research reveals that the higher income countries in the continent, have a greater quantity of niche and specialised healthcare startups. These include: diagnostics and monitoring tech; booking platforms; big data and analytics; medical supply chain; biotech, and lifestyle platforms.

### The role of big corporates in breathing more life into the healthtech startup sector

South African healthcare company Netcare partnered with Founders Factory Africa (FFA) in 2019 to accelerate the next generation of healthcare startups in Africa that are utilising the digital economy to empower communities. The partnership includes an investment (of an undisclosed amount) by Netcare in FFA whereby FFA will accelerate 5 startups a year and incubate 2.

### Case studies of healtech innovation (from startups that have showcased at AfricArena Summit and recently raised funding)

One underlying factor in advances in healthtech is the computational power to collect and analyse the health-related data of a person - data that can be utilised to achieve the most optimal healthcare outcomes. Such massive volumes of data are harnessed by leveraging mobile devices such as smartphones and wearable tech.

**For example, in Tunisia, the AfricArena 2019 Tour startup pitch event showcased Epilert, which produces a wearable bracelet with integrated biosensors for epilepsy and other neurological disorders. So far, Epilert has raised $300 000 in investment and has made strategic partnerships with Analog Device, Arrow, Onetech and Al Razi Hospital.**

[21] Tech Crunch, 2019. Jake Bright. "Founders Factory Africa and Netcare to fund 35 healthtech startups."

[22] Memeburn, 2019. "South Africa is ripe for investment into transformative healthtech solutions [Opinion]". Wayne Zweirs.

Another example is GeroCare, which won the AfricArena Tour "Best of the Ecosystem Challenge" in Nigeria. GeroCare has a subscription-based service targeted at the elderly in Nigeria, where the patient (or caretaker) uses the web or app to book and manage appointments with health professionals who visit the patient in the comfort of their home. To date, the platform has close to 800 health professionals in 45 cities in Nigeria.

In South Africa, Akili Labs is making considerable progress in low-cost point of care and rapid diagnostics solutions. Akili Labs has developed partnerships with a number of organisations, including Savant Technology Incubator, The Innovation Hub, and Founders Factory Africa. In addition, they have been recently selected to take part in an acceleration programme by Merck Accelerator, Make-IT in Africa and HYBR. Since its launch four years ago the healthtech startup has raised R1.1-million ($ 70 000) which includes seed funding from Savant and prize money from the GAP BioSciences competition.


[23] Ventureburn, 2019. David Mpala. "Funding regulations top the challenges Africa's healthcare startups face."

# KEY TAKEAWAYS

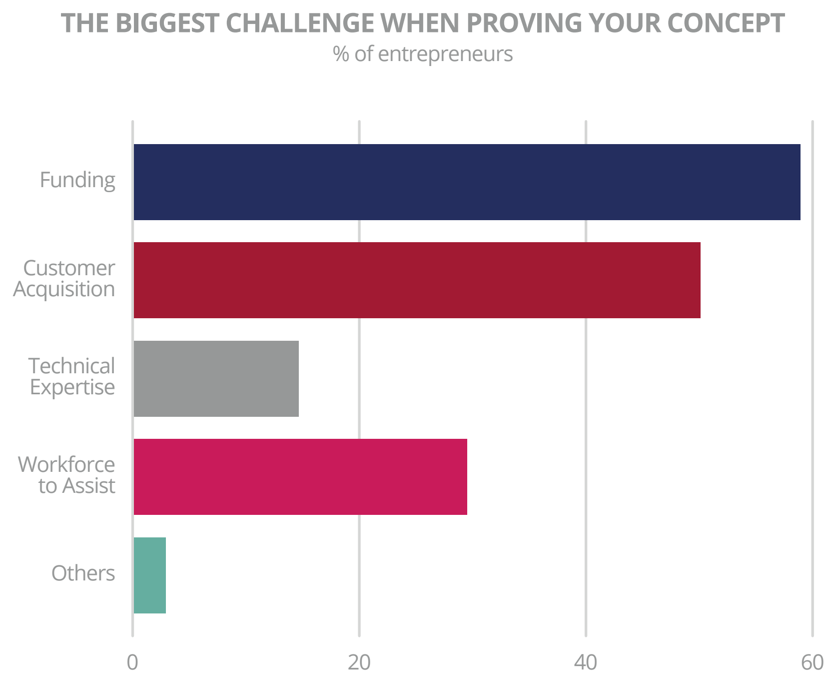
What we see with the high-performing and highly funded startups in the healthtech sector in Africa, is that many of these solutions are fuelled by data and user friendly interfaces and devices.

Healthtech investment showed the biggest increase of any sector in 2019 (compared to the previous year) - an increase of 969%.

3.1

# GROWING A VENTURE IN AFRICA: MAIN CHALLENGES

Creating a startup and making it a successful company requires various elements and the absence of these elements may cause failure. Our research team asked founders in a survey about what their biggest challenges were when it came to proving their proof of concepts.




Through the following section, we will explore challenges and market trends in terms of funding, organizations supporting the entrepreneurs such as incubators and accelerators, the regulation changes currently happening across the continent to foster entrepreneurship,and finally the ability of startups to attract the talents they need.

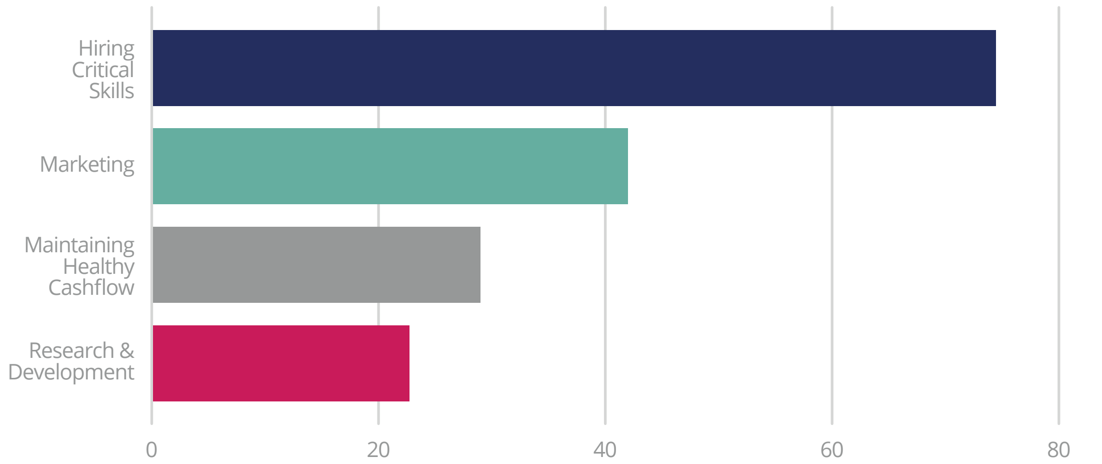
3.2

# FINANCING: HOW ENTREPRENEURS FINANCE VENTURES

Raising funds has become something natural for tech entrepreneurs by aiming to scale their venture with the underlying idea that “Winners take all”. However, we hear more and more critical voices about the time spent by entrepreneurs to raise funds, at all cost and on the traditional mode, where venture capitalists will ask equity in exchange for cash money and expect a 10 times return within 5 years through a fast growing, scalable business, unique idea and strong founder/team. On top of that, raising capital can take time away from customers and product focus.

Giving away equity as a way of financing may not be the best way for African startups with alternative options such as debt, evergreen funds, asset financing or revenue sharing as detailed in a report from the venture firm Village Capital in 2019. One of the reasons being that scaling a venture may take more time in Africa than in the more mature market. This may be not compatible with the VC business model and all startups will not have an Utber-like growth curve.

**WHY DO STARTUPS NEED MONEY?**
% of founders interviewed

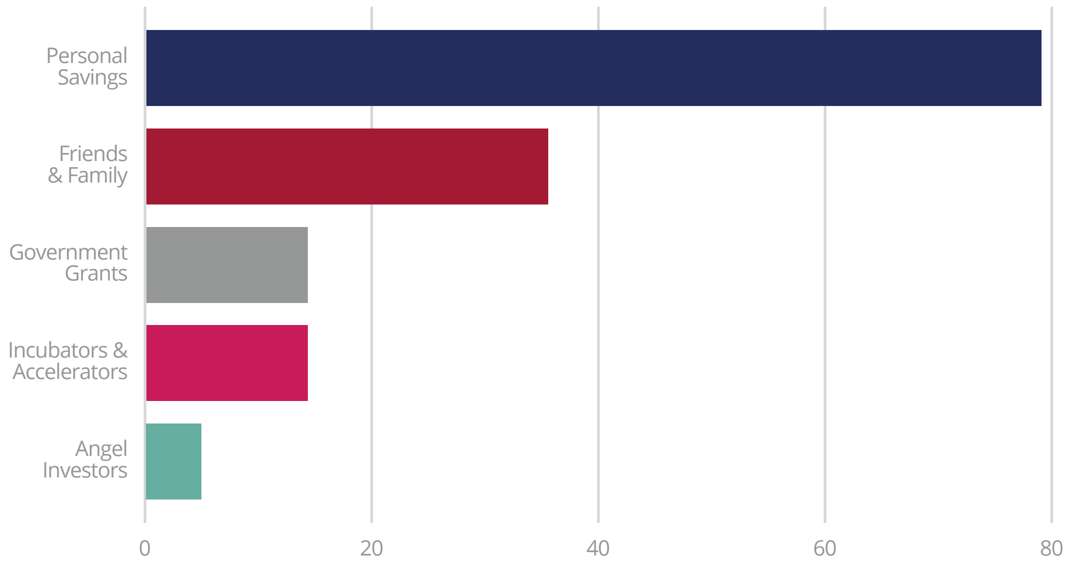



Raising money to hire employees with critical skills seems quite logical as there is a need for a high level core team to execute the vision. This can be found difficult in Africa as there is a lack of graduates, and the stock option way of remuneration is not working as well as in the US or in Europe due to limited Merger and Acquisitions (M&A) activity and prospects for Initial Public Offering (IPO). We investigated further the talent question in another section.

Exploring further, we tried to understand how founders financed their venture at the very beginning.

HOW DID FOUNDERS FINANCED THE BEGINNING OF THEIR STARTUP?

% of founders who kickstarted their business with a specific financing source




Financing the beginning of a new venture is known to be financially strenuous, leading to bootstrapping strategies as key players financing more traditional businesses are not willing to gamble in highly risky innovative businesses.

One point that we observe, howeve, is the limited number of ventures that are beneficiaries of grants from governments. An example of these grants are those provided by the Technology Innovation Agency in South Africa or those offered by the Tunisian state as part of their Startup Act strategies. At the exception of the examples mentioned above, there are very few programs to support the development of tech startups in Africa as can be seen in economies such as the UK or France..

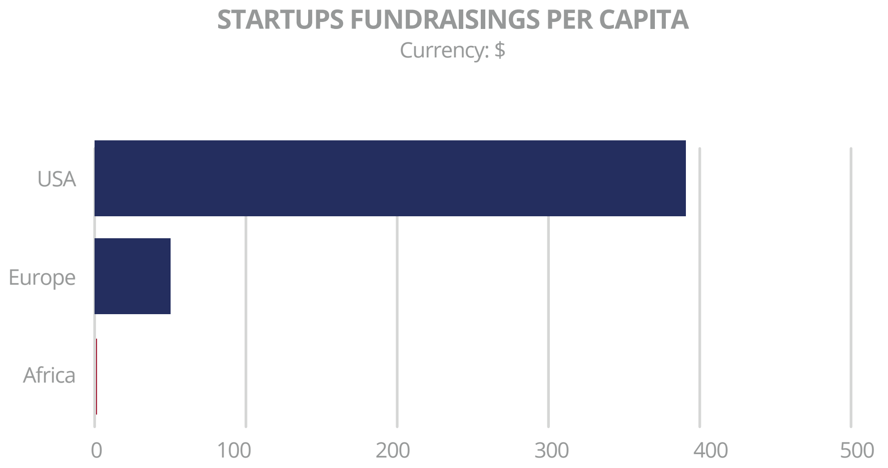
The reality beyond these figures is also an insufficient number of angel investors and a gap in funds dedicated to finance at a very early stage. As most of the founders that answered this survey have created more than one venture, we could have expected easier access to financing from the beginning, as it is often the case in the US or Europe but that doesn't seem to be the reality. Two of the reasons may be the limited number of early-stage funds and the small number of angel investors.

Some new funds are addressing this gap to finance the Pre-seed and Seed stage, but remain very few compared to the need to support these entrepreneurs especially as the risk associated with such investments is very high.

Funding coming directly as part of Incubator or Accelerator programs appears as a way to support the growth of their startups. More and more accelerators are now creating their own small VC funds, taking equity in exchange for cash money (investing between $ 15k & $ 150k).

We asked the founders about their experiences when looking for larger investments once their venture was more mature and more capital was required to scale their growth. It appears that the most successful startups with the most experienced founders managed to access capital, but that due diligence and conditions are usually tougher than the ones in markets where more capital is available. Concretely, investors are asking for deeper due diligence as their European or American counterparts and term sheet conditions may be tougher, which makes the investment process longer.

The due diligence side may be addressed by standardizing investors requirements and educating founders about this requirement from the very beginning so that they build the necessary documents over time. Rather than being a due diligence problem, the difficulties to access capital reflect, in our views, a tougher competition between the startups looking for funding and therefore tougher conditions. Indeed, taking a step back, we observe that investments in tech startups have been growing tremendously, but in 2019, it still only represents $1,69 per capita in Africa compared to $396.34 per capita in the US and $48,62 in Europe.




Out of the $2.02billion invested in 2020 according to Partech research, seed funding accounted for only $151 million (Note: it doesn't include investments lower than $200k) representing just 7.5% of the total funding. Additionally, the growth rate in capital invested is smaller for seed funding rounds than those for Series A and Series B rounds. There is a need for much more funds focusing on supporting very early stage entrepreneurs.

Accessing distribution networks, dealing with corporates, making decisions about pricing, critical skills hirings and investments are very hard to make for first time entrepreneurs. Fund managers that are able to provide entrepreneurs with these resources are likely to significantly increase their chance of success.

A key identified issue is the inability to combine strong support to the entrepreneurs (for example through hiring a dedicated team) and the size of the funds usually managed by early stage VC Funds in Africa which size range from $1m to $150m but average around $8m.

Indeed, the widely adopted way of remuneration for fund managers is a management fee of 2% on the invested capital per year and 20% of the capital gains (called the carried interest) after the closing of the fund (usually after 10 years). With many of the early-stage funds being only a few million dollars, it limits the ability to hire staff outside of the investment team.

Possible improvements could be done to increase the management fees or increase the size of the funds so that they can have more impact. Larger fund sizes also contribute to increase the risk-appetite as the fund manager (VC firm) will be able to balance potential failures with other companies in their portfolio, which is not the case for smaller portfolios.

We observe usually larger impacts of VCs that have some specializations in terms of sectors or maturity stages as they have a stronger network to help the startup grow, through business introductions for example.

# KEY TAKEAWAYS

Major challenges for tech entrepreneurs starting their businesses in Africa are relative to access to funding, customer acquisition and workforce hiring.

Even if the possibilities to get funding from a venture capitalist have increased, it remains very low compared to Europe, the US or China.

Most founders finance at the beginning their venture on their personal savings and love money (family & friends) which can restrict innovation to those who can afford personal savings.

A growing number of incubators are setting up micro-vc funds to support their entrepreneurs with amounts varying usually between $40k and $150k.

Most efficient early-stage investors are those that take a hands-on approach by helping entrepreneurs accessing customers, providing them strategic advice and critical in-house expertise and those with a specialization in terms of sector or maturity stage.

3.2.1

# NEW AFRICAN VC FUNDS

Looking at the Emerging Markets Private Equity and Venture Capital Association (EMPEA) reports, we observed that in 2019 fund managers continued to raise funds for African-focused venture capital funds, at a similar pace as in 2018 with over $1 billion. We can expect the investment growth to continue as these fund managers will deploy their funds in the coming years.

## Below is a summary of the funds announced in 2019, already raised or currently being raised with their main characteristics.

| Name | Investment Stage | HQ Location | Countries of Operation | Sectors of Preference | Size Fund in $ |
|---|---|---|---|---|---|
| Accion Venture lab | Seed-stage | USA | Any | Inclusive fintech | $23m |
| Flourish ventures by Omydiar | Early stage, Growth | USA | Emerging markets | Financial Inclusion | $300m |
| Investisseurs & partenaires | Early stage, Growth | France | West & Central Africa, East Africa & Madagascar | Digital | $80m |
| Digital Africa Ventures | Early stage | South Africa | South Africa | Digital | $5m |
| Enygma Ventures | Very early stage | USA | Southern Africa (SADC) | Digital, women-led | $100m |
| Partech Africa fund 2 | Early stage (Series A, Series B) | Senegal | Any | informal Economy, Mobility, Financial Inclusion, Supply Chain, Consum-er Services | $80m |
| Seed star & first growth ventures | Early stage (Series A, Series B) | France | Any | Digital | $100m |
| Ingressive Capital | Very early stage (Pre-seed to Seed) | Nigeria | Sub-Saharan Africa & Egypt | Any | $5m |
| Modus Capital | Early stage (Pre seed to Series A) | USA | MENA | Tech enabled businesses with social impact | $75m |
| Kingson capital Fund Two | Early stage | South Africa | South Africa | Autonomy, Data Analytics & Machine Learning, Immersive Tech, Digital Assets, Smart Spaces & Sensor Tech | $100m |

| Name | Investment Stage | HQ Location | Countries of Operation | Sectors of Preference | Size Fund |
|---|---|---|---|---|---|
| LionPride Agility VCC | early-stage | South Africa | South Africa | Fintech, EdTech, Agritech, On-Demand Services, Business Process Outsourcing, Renewables | €28m |
| Nuwa Capital | NA | UEA | Mena, East Africa | DTC, SaaS, fintech, mobility & logistics | $100m |
| Tide Africa fund by TLCOM | early-stage | Nigeria, London, Kenya | Sub Saharan Africa | Any | $71m |
| Samurai incubate africa | very early stage, early stage | Japan | Any | Any | $18m |
| Cathay innovation & Africinvest | Growth stage | Tunisia | Any | fintech, logistics, AI, agritech & edtech | €150m |
| Palladium Impact fund | Early stage, Growth | Australia | Nigeria, Ghana, Kenya | Agribusiness value chains, off-grid clean energy ventures | $40 million |


We can expect investment growth to continue as fund managers deploy funds in various startups.

Until recent times, very few startups have been acquired by strategic investors and filed for IPO (Jumia May 2019 NASDAQ IPO being an exception). This makes it complicated for fund managers to get financed as it is questionable if they will be able to give the money back to their investors at the end of the fund period (often 10 years). Fortunately, in addition to more acquisitions, models are slowly evolving with revenue-sharing models to pay back the investors or longer fund life durations.

**We also observe the development of more targeted funds that aim to solve gaps by:**

- **Focusing on very early stage startups investing between $50k and $300k**
- **Targeting specifically women-led startups**

It has been proven at a worldwide level that women-led startups are attracting a very small portion of the funding (3% in 2019 in the US), partly because the VC industry, mostly composed by male staff, is creating investor bias. Indeed, less than 10% at US VC firms were female in 2018 according to an Axios research. The problem of diversity is wider than the gender imbalance as studied by Village Capital over the last years with a very small part of the funding going into startups founded by minorities in the US. Africa is no exception with very few VC funds having women in leadership positions, even though there is no official figure on the matter. Paradoxically, the continent counts the biggest number of women entrepreneurs, even though mostly in the informal economy. A 2020 report from the International Finance Corporation (IFC) and Village Capital highlighted that only 11% of the funding attributed for seed investments went to startups with at least one woman in the founding team. No doubt that we need more VC funds dedicated to finance women-led startups and more diversity in the VC industry to fuel the diversity of tomorrow's successes.

UN WOMEN

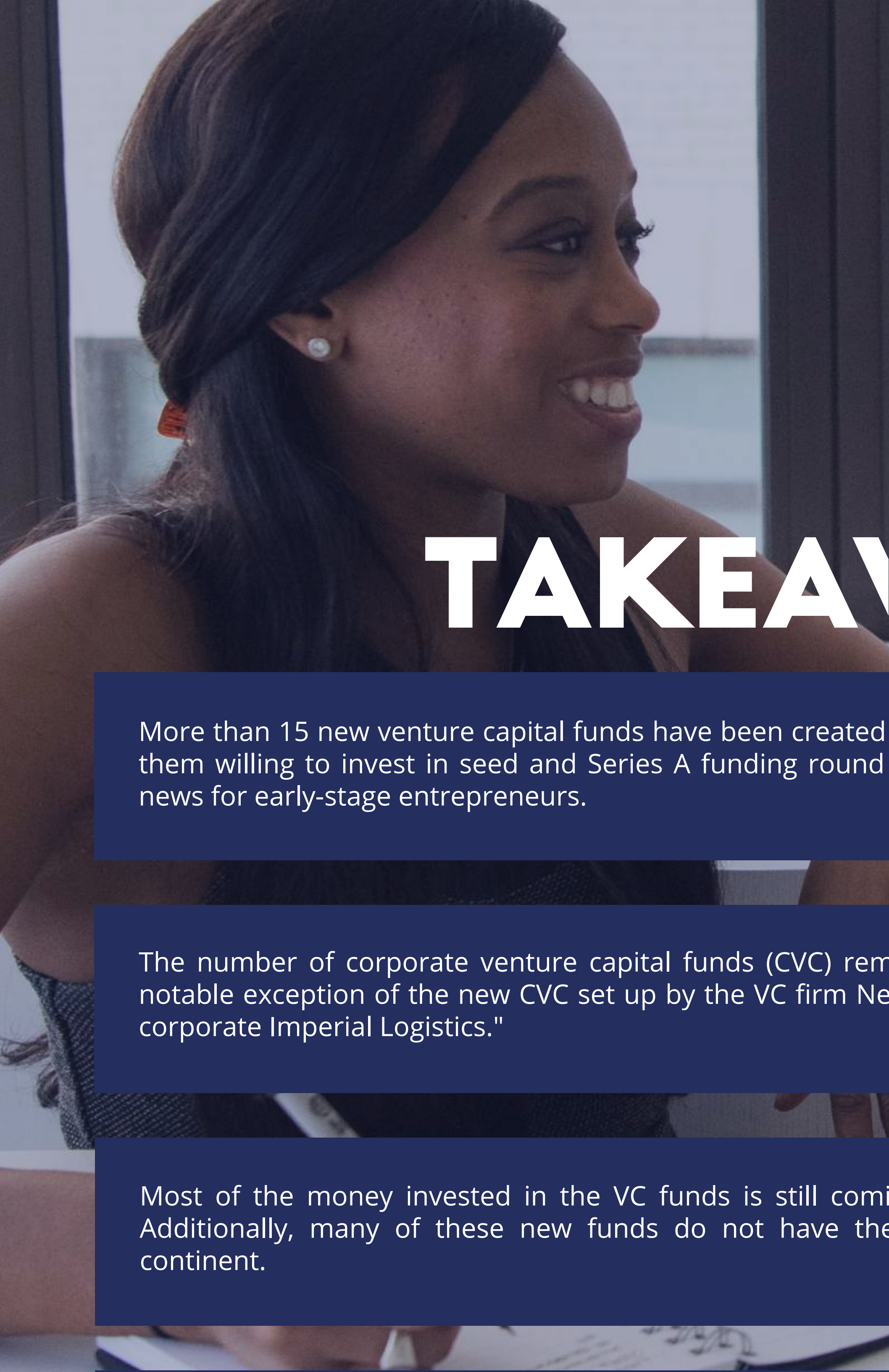
United Nations
Economic Commission
for Africa

**The African Women Leadership Fund (AWLF) is an innovative impact investment fund of funds which aims to accelerate the growth of women-owned and operated funds and companies across Africa. The AWLF provides capital to both first time and experienced fund managers that invest in majority female-owned businesses. The fund aims to achieve a size of $100m.**

ENYGMA
VENTURES

**Enygma Ventures is a new venture capital firm dedicated to finance early-stage women entrepreneurs in the Southern African Development Community (SADC) region.**

We also observed the development of evergreen funds such as Flourish Ventures where, as opposed to the traditional venture capital funds, the limited partners (partners investing the money in the fund), are not asking the money back after the 10 years period. It enables longer growth and support than traditional funds and may be better suited to the African less mature tech ecosystems.



# KEY TAKEAWAYS

More than 15 new venture capital funds have been created in 2019 with multiple of them willing to invest in seed and Series A funding round which constitutes great news for early-stage entrepreneurs.

The number of corporate venture capital funds (CVC) remain very small with the notable exception of the new CVC set up by the VC firm Newfund Partners and the corporate Imperial Logistics."

Most of the money invested in the VC funds is still coming from outside Africa. Additionally, many of these new funds do not have their headquarters in the continent.

We observe the development of new funds dedicated to finance women-led startups and international initiatives are likely to foster the trend by bringing more diversity into the VC industry with the goal to finance more women-led startups .

Evergreen funds are a rising model that may be better suited to support high-growth startups in Africa where M&A transactions & IPO prospects remain very low.

3.2.2

# FACILITATING VENTURE INVESTMENT IN AFRICA : THE ARABELLA COLLECTIVE

In November 2019, 45 of the most active investors (mainly VCs) investing on the continent came together for a weekend VC Unconference in South Africa to connect and discuss how to foster investments into African Tech startups.

It appeared that investors across the continent have expectations and processes that can largely vary. This creates friction, extends the fundraising average duration, makes even more time consuming this process for entrepreneurs and can prevent investors to do deal syndication.

A collective gathering of 30 VCs, industry bodies, public institutions and entrepreneurs was set up to design and publish various resources to facilitate venture capital investment in Africa. The first deliverables included the following:

- Standardized terms sheets for Seed & Series A investments
- Standardized due diligence checklists for Seed & Series A investments
- Evaluation of the impact of incubators and accelerators on Startups

To date,a task force is also being set up to coordinate initiatives aiming more investment and entrepreneurship friendly regulations across the continent.

AfricArena is proud to support this collective initiative. The first tools will be publicly released on an independent and collective online platform mid 2020.

# KEY TAKEAWAYS

Investment practices vary largely between tech investors in Africa and there is a lack of transparency for the founders about what is required and what to expect.

Investors from across the continent gathered in the Arabella Collective and are working together to design standardized documents & tools to facilitate venture capital across Africa.

3.2.3

# RISE OF ANGEL INVESTMENT ACROSS AFRICA

Tech ecosystem players have recognised for a long time that there is a lack of angel investors across Africa who can bring money, alongside their expertise and networks, to very early-stage startups.

To date, due to the very limited exits (startups being acquired or which havefilled to IPO), there are very few successful tech founders who are giving back to the ecosystems. A well-known illustration of this potential is in Silicon Valley where the early employees of Paypal have been able to invest their capital gains to finance the new generation of startups such as Facebook, Tesla, Palantir, SpaceX.

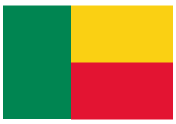
Most of African high-net-worth individuals have made their fortune in traditional sectors such as cement, minerals, banks, media, telcom, but not by creating “unicorns”. In the US, 8 out of 9 biggest fortunes of the country are held by people from the tech industry who created their own company.

As data regarding angel investment in the African continent is very limited, it is tough to draw a clear picture. However, we estimate that most startups raising a seed funding usually have between 5% of 10% of their capital owned by angel investors (or incubators/accelerators) at the moment of raising seed funding (>$200k). The total value of seed funding accounted for $1.02 million in 2019 according to the Partech Report. The two biggest angel investment networks together invested approximately $3.5million until 2018 with an average investment size for Lagos Angels of $48k and Cairo Angels $125k.

We need to take into account that, on one side the delimitations of angel investment may be broad, especially with the large flows of money coming from the diasporas. On the other side and from our discussions with experts, we estimate that a large part of the angel investment is made locally by people that are not part of any angel network. From this data, it is difficult to give a precise estimate,but we believe this amount is higher than $10m per year at a continent level.

**2019 has seen the emergence of multiple business angel networks that are likely to increase the number of angel investors supporting very early-stage startups. Inside of these networks, independent investors are assessing together investment opportunities and are able to bring more money on the table than by acting alone.**

The Cairo Angels, one the leading business angel networks in Africa, are collectively investing between €15k and €150k and, to date, have financed 25 startups in Egypt and MENA for a total amount of €2,5m making them a key player to finance and support pre-seed and seed startups in the region.



Benin Business Angels Network (BBAN) was launched in April 2019.

Dakar Network Angels, launched in April 2019, aims to make four investments of between $20 000 and $100 000 yearly.

Mali Business Angel Network was launched in May 2019, targeting tech-enabled startups for early-stage investments, five times per year.

With the support of the African Business Angel Network (ABAN), the World Bank, VBAN and the SAIS program supported by the Finnish Government, new networks of angel investors are likely to emerge in 2020 in Guinea, Zambia and Botswana.

As seen with the VC funds, we observe the creation of business angels networks dedicated to finance women-led startups - such as the Lagos-based Rising Tide Africa and Cape Town's Dazzle Angels - with the purpose to fight the inequalities as most of the funding is going to male founders, which is similar to the situation in more mature markets.

### Encouraging high-net worth individuals to invest in early stage startups:

Another interesting initiative is the association between African Business Angel Network (ABAN) and Afrilabs, a Pan-African network of technology and innovation centres to provide additional capital to startups who will be raising money from angel investors registered in the ABAN network and being part of Afrilabs incubators. Part of the funds are provided by the French Development Agency (AFD). Multiplying similar initiatives may encourage high net-worth individuals to start investing in startups.

### Training Angel investors to mentoring startups:

Angel investment is much more than just investing money. Organisations including the VC4A startup academy and the African Angel Academy are producing content to train and educate angels in Africa.

This Mentor-driven capital free course aims to enable angel investors to create more value to startups than the purely financial approach through mentoring, sharing knowledge, experience and network built during their career, while also maximizing the return on their investments.[5]

The African Angel Academy aims to foster angel investment through the creation of an angel investing curriculum, tools and mentorship from established angels that are available on an online portal. The content that will be covered both online and through in-country workshops in Southern Africa,and includes topics such as; angel investing strategy and mandate, deal sourcing, due diligence, deal structuring, valuations, negotiations, teams, post Investment and value addition, exits and angel group management andtructures.

[5] https://academy.vc4a.com/courses/mentor-driven-capital/

# KEY TAKEAWAYS

Angel investment in Western markets represent a key part of the funding available for Pre-seed and Seed entrepreneurs looking to scale their ventures. Unfortunately, the opportunities to access angel investment are very limited in Africa as the number of local angel investors remains very low. Despite few significant exits (startups being acquired or going public) over the last few years, we will need much more exits to increase the number of former entrepreneurs and first employees that could give back to the ecosystem.

Initiatives supported by various organisations such as ABAN, Afrilabs, African Angel Academy, VC4A and some others are leading to the creation of new business angel networks as well as to the creation of training programs for angel investors. These initiatives may change the perception of investing in early-stage startups and increasing the number of angel investors.

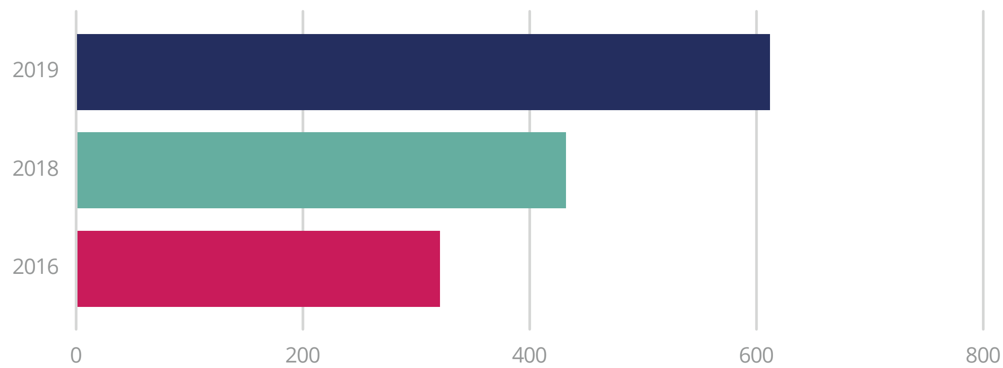
3.3

# TECH HUBS SUPPORTING ENTREPRENEURS: BEHIND THE FIGURES

Tech hubs play a critical role in Africa to foster entrepreneurship and support startups. They include a large range of organizations such as incubators which support very early stage startups at the ideation stage where they have not found yet the combination of their product and their customer (also called product market-fit). Accelerators, on the other hand, provide skills, access to experts and networks, and often capital to accelerate the growth of more mature startups. However, 25% of these tech hubs only propose co-working spaces where tech people can meet in a physical space and enjoy internet access and electricity.

By exploring founders' and investors' experience with incubators and accelerators, we see that despite the quick growth of the tech hubs noted by GSMA (the association representing mobile operators worldwide), the services they offer and their impact on the startups vary strongly between the players.

**ACTIVE TECH HUBS IN AFRICA**
2016 - 2019

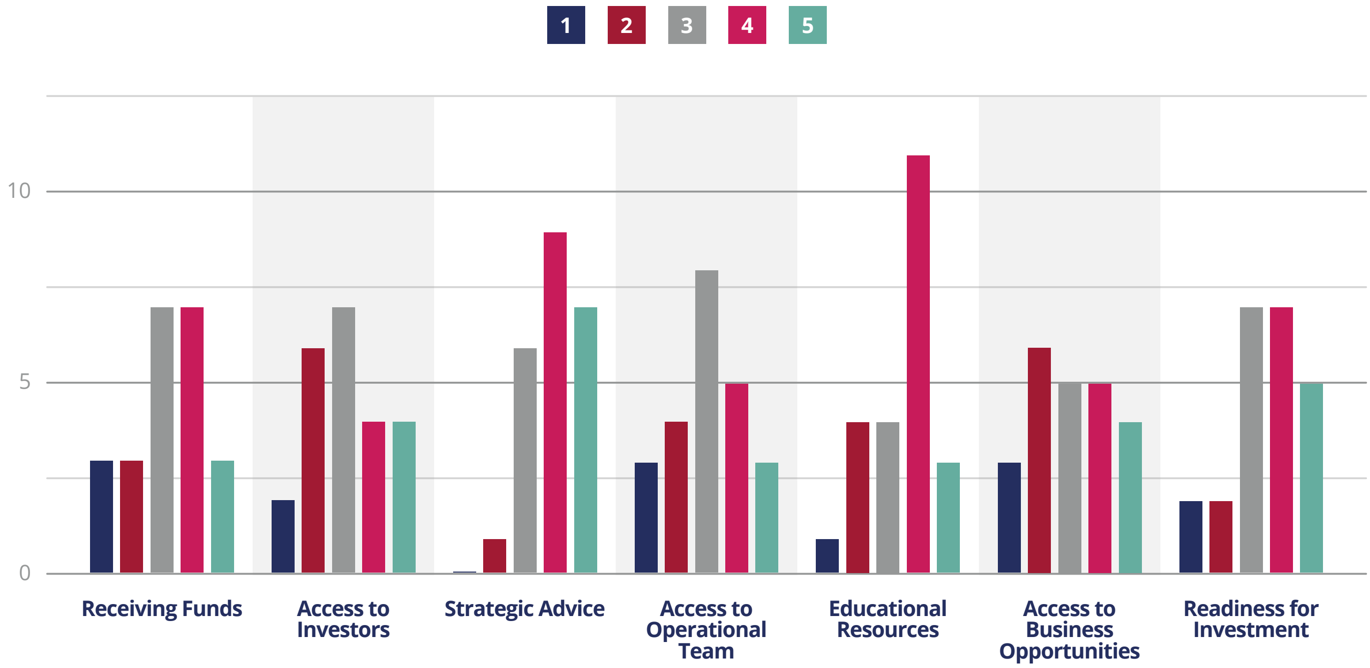



Interviewing the AfricArena startup community, 65% of them took part either in an incubation or an acceleration programme, confirming the role of these organisations in facilitating the growth of tech startups.

Below is an overview of the opinions given by the founders on the incubators and accelerators they have been part of. It covers 18 different incubators in Nigeria, South Africa, Ghana and Kenya. A surprising point lies in the strong variation in the ability to have an impact on the startups supported with some organizations being very efficient where others are rated as low in most of the criterias listed in the chart below.

RATE THE SUCCESS OF THE PROGRAM IN IMPROVING YOUR BUSINESS

Scale: 1 (not successful at all) to 5 (very successful)




Source: AfricArena research

**Based on the survey, we observe the key following strengths of the incubators and accelerators:**

- **Strategic advice**
- **Access to educational resources**
- **Improving readiness for investment**

On the other side, the ability to access investors or business opportunities seems too often limited as is the opportunity to work with an external operational team. This supports the direction of the Village Capital report, highlighting the often limited experience and network of tech hubs to bring real value to the entrepreneurs. The opportunity to get funding directly from the incubator or the accelerator largely depends on the organization.

There is a lack of visibility as to which incubators and accelerators are really providing value and which are not. This leads entrepreneurs to give away equity and waste their time with unappropriate support organisations. The Arabella collective is currently working to provide more transparency about the impact and specifications of incubators and accelerators across Africa.

FRENCH SOUTH AFRICAN TECH LABS
CAPE TOWN

Renier Kriel, CEO of the French South African Tech Labs, a Cape Town-based incubator shared with us his vision about the role of incubators. He shared that many founders may gain more by being customer-driven and focusing more on that at the beginning is important. Indeed, it is wise to  build a great product that customers will pay for rather than spending time raising funds or any other domain. At the FSAT Labs, they have made the choice to really focus the support they offer on product development, encouraging the startups' teams to set up assumptions, ask for constant feedback from customers,and adapt their products accordingly. This is the number one priority to gain early traction. FSAT Labs' team also believes that there is a need for more online, very practical content available from successful entrepreneurs to educate first time entrepreneurs on how to build a great product and find the product market-fit.

Startupbootcamp
AfriTech

Philip Kiracofe, co-founder and CEO of Startupbootcamp Afritech, a top ranked pan-African accelerator, highlighted that corporate-backed accelerator programs have a materially bigger impact on the participating startups because they are able to scale much faster through established distribution channels. Moreover, startups with successful pilots and commercial agreements are much more attractive to investors, which raises the valuations for startup alumni from top tier accelerators. This creates a self-reinforcing virtuous circle where startups, corporates, founders, investors and mentors are all mutually benefitting and growing the ecosystem as explained us Philip.

However, to leverage on that opportunity, corporates committing to these programs need to be driven by a clear and identified business problem that they want to address. If corporates decide to commit for corporate social responsibility (CSR) purposes, it is often very tough to get internal support from the business units as their support will not impact the bottom line of their company. It is also necessary to have an internal sponsor to help the startup navigate inside the corporate and facilitate the interactions to limit time waste and overcome culture and process differences. One of the key points to help startups to scale is the ability to provide them with skills and strategic advice as well as introductions, which then require to have entrepreneurs in residence and advisors with a strong entrepreneurial experience in acceleration programs.

To make incubators and accelerators more impactful, some initiatives are being set up to train hub managers such as the AfriLabs Capacity Building Programme designed by Afrilabs and partly financed by the French Development Agency (AFD). It aims to combine physical workshops with online training and grants attribution to help the hubs to scale and become more impactful. One of the goals is to train 600 hub managers over the three next years. The real impact of such types of initiatives is unknown at this stage.

Damilola Teidi-Ayoola, leading the startup support at Cchub, the largest innovation centre in Africa shared with us the way they support startups efficiently. By working with public and private stakeholders on various missions linked to innovation, Cchub has been able to develop internal resources in various domains such as design, product development, public health, governance and education that entrepreneurs can leverage on. Damilola also emphasized the role played to support startups with their recruitment and talent management questions. By providing activities to public and private stakeholders, tech hubs may develop their business and investors networks and have on the long-term a more impactful approach on the startups they support. Focusing on a specific skill or value proposition may also help tech hubs to be more impactful as the spectrum of skills & support required is more limited.

**New players combining entrepreneurs support, investment and education:**

**African tech community has often acknowledged the lack of equivalent to leading worldwide incubators such as YC or Techstar on the continent. We are glad to see that more of these players are now reconsidering the opportunities on the continent.**

Founders Factory Africa, the startup accelerator based in Johannesburg, South Africa which is financed by leading corporates is offering, as part of their acceleration program, support from their operational team with proven entrepreneurial experience as well as capital. This bridges the skill gap (as highlighted by the Education Index) and fosters the development of their startups. By setting up acceleration programs in multiple locations across the world, Founders Factory have been able to reach a critical size and reputation, and pool important resources to support the entrepreneurs. At the same time, they are adapting to local markets through regional offices, such as the office in Johannesburg. Through their small investments as part of the acceleration program in exchange for equity, Founders Factory Africa is incentivized to support the entrepreneurs on the long run with the expected outcome being an acquisition or the startups going to public stock exchange.

More and more incubators are now setting up micro VC funds to support their startups portfolio,and create an alignment over the long term. However, the limited size of the funds leads to small management fees that are not able to create a sustainable model without other sources of income. A classic business model of the tech hubs remains the provider of co-working space to finance support activities, but this move may help to bridge the gap for very early stage funding.

As mentioned above, few countries have taken initiatives to financially support their startups such as Tunisia or South Africa through seed grants programs. A few programs are also organized by private foundations and deliver seed grants every year, including the Tony Elumelu Foundation, offering $5000 to 1000 startups every year as part of their entrepreneurship programme. The Bill and Melinda Gates Foundation also provided, over the last few years, a few millions $ every year to a very limited number of impact startups. We estimate that,in total, these grants account for roughly to $ 25million every year. We need more public and private initiatives to support early-stage businesses that will have a systemic impact.

# KEY TAKEAWAYS

There is a surge in the number of tech hubs supporting tech entrepreneurs on the continent throughout different formats such as but not only incubators, accelerators and co-working spaces.

The AfricArena founders' survey showed that key strengths of incubators and accelerators are the ability to give strategic advice to the startups, access to education resources, to improve readiness for investment  and, sometimes, the ability to provide startups with direct funding as part of the programs.

Tech hubs have the ability to really impact the startups they host but the efficiency widely varies between the organisations. Some are described as owning limited business and investors networks as well as limited or no operational teams to support the startups. This is partly due to staff having limited entrepreneurial experience according to Village Capital research.

We observe initiatives to strengthen the impact of these organisations such as the Afrilabs Capacity building program.

Multiple incubators and accelerators are now raising micro VC funds to finance directly the early-stage startups they support.

3.4

# ACCESS TO TALENT IN SUB-SAHARAN AFRICA

Ranked as one of the major goals for raising funds, the ability of startups in Africa to attract and retain talents is not well documented. We explored this further through interviews with founders, investors, recruitment specialists and from existing researches.

Africa has seen a growth in the last decades of the number of students enrolled in tertiary education, particularly through the increase of private institutions according to the WorldBank Research. However, these figures remain much lower than in other continents, and this obviously affects the ability of startups to hire the skills they need to deliver a world-class product and scale.

Various coding schools or companies training developers have been developed over the last years such as Andela. Business schools have developed quite a lot across the continent,but from our expert interviews, it appears that there is still a lack of product developers, due to the very limited training available. As ecosystems are still very young, African developers have, for the most part, limited experience and there are not as many experienced professionals to coach them as we can see it in more mature markets such as in the US or Europe.

Understanding how startups access talent, we often hear about the strong power of the network and the opacity of the labor market. This means that it is not easy to recruit high performing individuals without an extensive network even though some local job boards are developing in various ecosystems across Africa.

To tackle this issue, Yacob Berkhane, former Venture Partner at Ingressive Capital (and with previous experience in growth ventures such as mSurvey and African Leadership University) and Wossen Ayele, a former consultant at McKinsey and an M&A attorney at Simpson Thacher recently founded Pariti. This B2B platform aims to connect investors and startups with highly skilled freelancers to help growth-stage businesses and investors to access the talents they need.

Morgane Vannier, who gained a strong experience by working extensively with West Africa tech entrepreneurs and currently HR advisor at Talent2Africa, a startup that is supporting companies to hire talents in Africa shared with us her vision. She pointed out that startups often underestimate their ability to have top talent especially as equity states have limited value since acquisitions in the continent remain the exception.

One key differentiation point to attract the best talents is corporate culture, Morganne told us. This something that startups do not consider enough in West Africa, and that could make the difference if the employee experience (a strong team spirit and a focus on upskilling employees) is well designed. There is a need for ecosystem players such as Incubators, Accelerators and VC Funds to raise awareness about the impact of the culture in startups to attract and retain talents.

The above mentioned is in line with the findings of Village Capital team, presented in their Talent Playbook where they observe that hiring is often considered as an administrative task rather than a strategic fonction. Through this playbook, they aim to help entrepreneurs understand the skills they need to grow their venture. Additionally, it also helps them to create an outstanding core team, hire, onboard, motivate, develop and retain their talents, but at the same time create a strong culture and a clear vision.

The startup culture and associated skills set are not taught at universities,but that are largely considered as important. Entrepreneurs that did not have the opportunity to previously work in high-growth ventures or be supported by an efficient incubator do not necessarily have this knowledge. There is a need for more organizations to start sharing courses the skills entrepreneurs need.  These include skills such as growth-hacking, hiring a team, creating an internal culture, creating a product roadmap, among many others. The way of accessing this content being really peer-to-peer and on-demand through informal platforms, including forums, Whatsapp Group or Slack communities.

One way to help startups access top talents and develop strong knowledge about subjects such as recruitment,  internal culture and more widely growth strategies,  is the reinforcement of the tech hubs supporting founders and a more hands-on approach on these questions from the investors sitting at companies' boards.


# KEY TAKEAWAYS

We observe a growth in the number of students enrolled in higher education institutions and vocational schools such as coding schools. These schools are developing across the continent. However, as this type of training only has a few years of existence, there is a limited pool of experienced talents especially on the product side.

There is a lack of consideration for hiring and creating an internal culture which may affect a startup's growth and ability to retain talents.

There is a need for more African focused online platforms to teach entrepreneurship skills and resources to aspiring entrepreneurs.

Governments and private stakeholders need to join forces to propose attractive opportunities able to retain African talents and stop the brain drain.

3.5

# REGULATION CHANGES

Tech entrepreneurs and their ability to innovate has proven that they can create leapfrogs to tackle some of the major challenges on the continent at a cheaper cost. Some of which are the lack of access to energy which finds its solution in the pay as you go solar panel model, or the quickly growing number of people getting access to basic financial services through fintech platforms. The effects of these innovations have an impact far beyond the digital sector by reinforcing the economy as a whole, for example, by the multiplication of crops outputs by accessing advice on the most appropriate inputs according to the soil characteristics through agritech platforms.

However, despite these opportunities offered by the digital solutions to transform a large number of sectors and contribute to the development of the countries (based on the SDGs), setting up a startup as an entrepreneur or investing capital as an investor remains a tough way in most African countries. These stakeholders are facing various challenges such as heavy taxes, the risk of being liable for debts (for a long time in case of business failure), weak intellectual property frameworks and restricted opportunity for cross-country payments. This excludes saying that the absence of grants to support entrepreneurs & the ecosystems or the length of administrative processes. This is one of the reasons which explain why most startups raising funding in countries,such as South Africa or Nigeria, have to move their legal structure to Mauritius, the UK or in the US where regulations are more business friendly.

We are quite optimistic as multiple countries across the continent are on the way to change their regulations to foster the creation of startups and to increase the amount of capital available for them.

Key pillars of these new regulations lie on supporting the entrepreneurs to create a venture and the startup entity itself. This will offer investors incentives to set up new local VC funds, commit state' money,and the tech hubs, including incubators, accelerators and tech events to accelerate startups' growths.

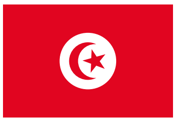
## Key pillars are usually the following:

| Entrepreneurs incentives | Investors incentives | Ecosystem support |
|---|---|---|
| Startup creation paid leave | New funds of funds financed by State's money | Grants for incubators and accelerators |
| Facilitated creation/liquidation | Guarantee program to limit investors' risks | Grants for ecosystem events |
| Tax incentives (no taxes of the first years) | Reinforced intellectual property (IP) frameworks | Facilitated policy for talent immigration (Visas) |
| Limited social charges on employees salaries | General partners incubator to train new fund managers | Reinforcement of the entrepre-neurial aspect of universities |
| Facilitated access to foreign currencies and digital payments | Fiscal incentives on capital gains made by VC funds | |
| Grants to support the development of the startup | New investment instruments | |

#i4Policy

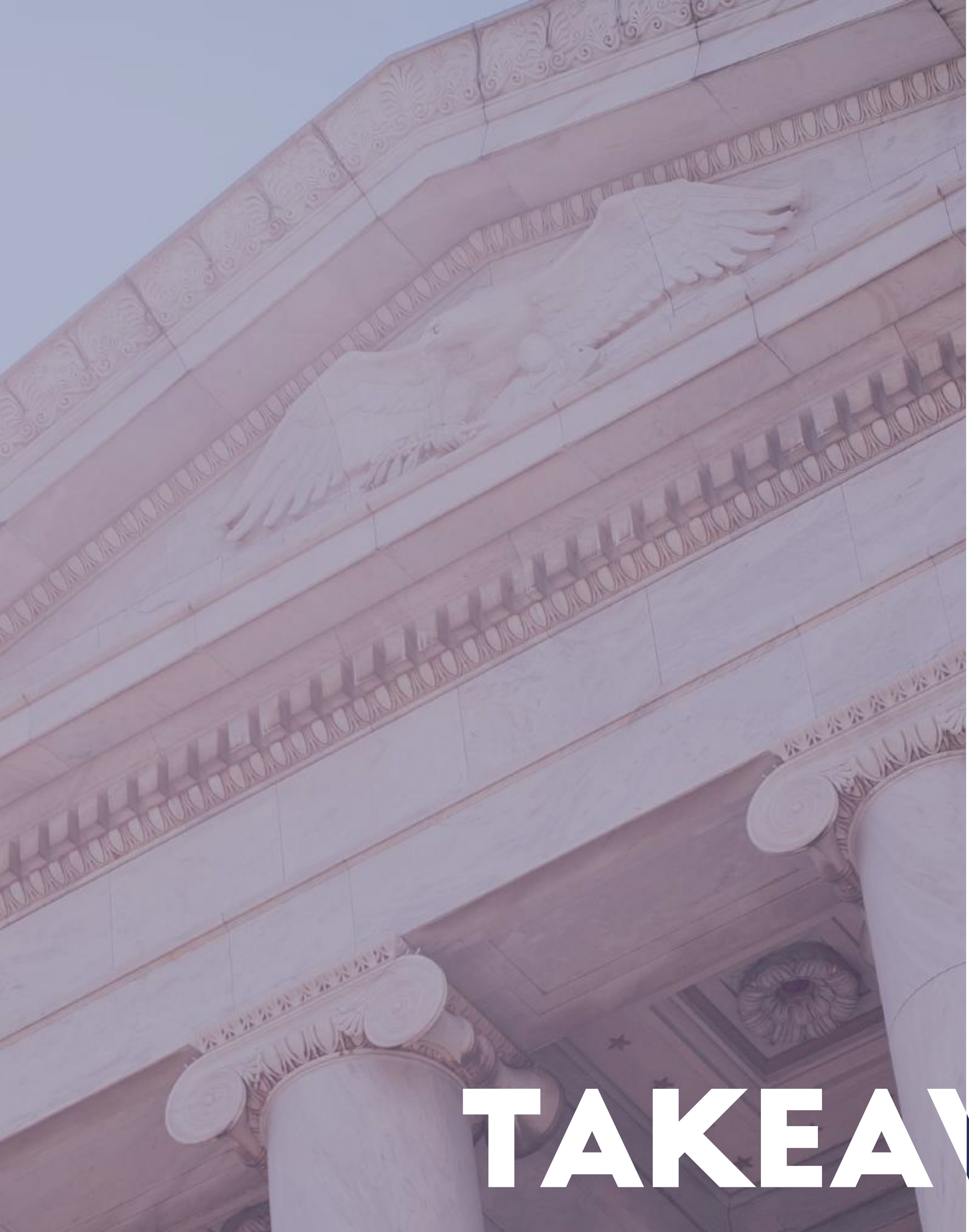
**i4Policy is leading the charge on lobbying governments for startup-friendly policy. The movement supports the emergence of relevant policy reforms driven by local tech communities and builds tools, methodologies and training to support common interest formation and public policy co-creation at scale. i4Policy has been organizing policy reform processes in Rwanda, Nigeria, Senegal, Côte d'Ivoire, Mali, Burkina Faso, Niger, Benin, Togo and Botswana to co-draft national policies intended to accelerate entrepreneurship and innovation. They announced in 2019 that at least 10 other countries have underway Startup Acts regulations, including Ghana and Mali.**

**August 2018:** 60 key players in the Senegalese innovation ecosystem came together to draft a startup act at the i4policy hackathon in Dakar[6]
**December 2020:** Senegal startup act has been approved by the National Assembly



**2015:** First discussions around a startup act in the nascent tech ecosystem
**2016:** First show of startup act proposal
**2018:** Laws approved by government
**2019:** Public launch of measures to support entrepreneurs, VC investment and reinforce the ecosystem

[6]https://disrupt-africa.com/2019/07/10-more-african-countries-are-working-towards-local-startup-acts/



# KEY TAKEAWAYS

Tech startups have demonstrated their ability to create "leapfrogs" by bringing solutions to the biggest challenges of the continent such as financial inclusion, access to energy, access to education or health-related.

Traditionally, many African countries are not known for their innovation friendly regulations with prohibitive conditions for the entrepreneurs and investors.

More and more countries are now setting up startups to develop their tech ecosystems (incubators and accelerators), support the development of new venture capital funds,support the development of new startups by grants, fiscal incentives and various other actions. Tunisia has been the first country in Africa to pave the way with its Startup Act, followed by Senegal in December 2019.

4.1

# OPEN INNOVATION IN AFRICA: WHAT IS OPEN INNOVATION

It is worth ensuring a clear definition of Open Innovation, often used as a buzzword with many different interpretations. The first key part of the concept is that corporates do not have access to all the ressources that the market has to offer.

**"Open Innovation is a dynamic mix of bringing external ideas and internal ideas together to fuel the Group's innovations and digital technologies. This means that we create partnerships with companies which will inspire our creation process, and where we can also reciprocate by providing our leading and vast expertise."**

**Esohe Omoruyi**
Former Senior Vice President, L'Oreal (Open Innovation & Digital Services)

In his research paper *Open Innovation: Researching a New Paradigm* (2006), Henry Chesbrough, who was the first to do extensive research on Open Innovation, and who is presented as a leading expert on the subject, wrote that "Open Innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. This paradigm assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology." From this definition, and according to Moo Ahn et al, Institut Open Innovation, there are two ways of doing Open Innovation: Inflow (In-sourcing, Venture Investment, Customer Involvement) and Outflow (licensing-out, Spin-off, Open Sourcing). We have put together the different Open Innovation models in the table below.

| Open Innovation Mode | | Definition |
|---|---|---|
| Inflow | In-sourcing | Use of external knowledge to reduce time-to-market and find new ideas. |
| | Venture investment | Investing in a promising startup to get new ideas, reducing time-to-market, generate competitive adv. |
| | Customer involvement | Finding new ideas by involving customers' feedback in the innovation process. |
| Two-way | Co R-D | Conducting R&D activities with external partners |
| | Alliances or M&A | Buying or building alliances with new businesses to gain from their knowledge. |
| Outflow | Licensing-out | Granting licenses or selling unused technologies to maximise profit. |
| | Spin-off | Spinning off internal organisations to market disruptive technologies. |
| | Open Sourcing | Granting free access to an internal project to create a new market and test potential consumer reaction |

AfricArena, as a platform for Open Innovation in Africa, has gathered valuable experience and data in taking part in Open Innovation programs, particularly regarding the in-sourcing, venture investment and co R&D parts.

In the last 3 years, we had the opportunity to run dozens of Open Innovation challenges with numerous international corporates such as the Air France KLM Group, Sanofi, Engie Africa, Vinci Energies, Old Mutual among many others. Our Open Innovation challenges covered various verticals from Insurtech and Fintech to Healthtech and Greentech - the scope is broad. Find below the exhaustive list of our Open Innovation challenges.

| 2019 | | |
|---|---|---|
| Company | Definition | Verticals |
| Old Mutual | Seeking a market ready solution aimed at the lower-end income group by finding a viable formula that assists with the distribution of financial products and payment collection. | Insurtech<br>Fintech |
| Hello Tomorrow Powered by BNP/RCS | Seeking deep technologies to help solve some of the world's toughest challenges (societal, environmental and industrial). | Deep Tech |
| Air France/KLM | Seeking African startups to develop an online game running on limited in-flight bandwidth that passengers can enjoy on their personal mobiles and tablets. | Gaming |
| Fantom Foundation | Seeking African startups that use Smart Contracts and Stable Coins to create practical solutions that contribute towards a better and smarter future. | Blockchain<br>Fintech<br>Insurtech |
| Engie Africa | Seeking African startups that provide affordable, fast-deployed and energy efficient access to clean and safe cooking solutions for households on or off grid. | Cleantech |
| Sanofi (Challenge 1) | Seeking African startups with an innovative solution empowering and educating communities by creating awareness that leads to early diagnosis and pro-active mental healthcare. | Healthtech |
| Sanofi (Challenge 2) | Seeking African tech-based solutions that help diabetic patients live healthier lifestyles by providing education and support on diet, exercise and emotional wellbeing. | Healthtech |
| Vinci Energies | Seeking African startups with technology that can make a contribution towards smarter, cleaner and safer buildings, industries and/or cities. | Mobitech<br>Energy |
| SA SME Fund | Seeking South African tech-based, high-potential, pre-Series A startups presenting a product or service that leverages technology in a unique way. | Various |
| Viva Tech | Seeking solutions that enable education in remote areas with limited access to resources. | EdTech |

| 2018 | | |
|---|---|---|
| Company | Definition | Verticals |
| Hello Tomorrow Powered by BNP/RCS | Seeking deep technologies to help solve some of the world's toughest challenges (societal, environmental and industrial). | Deep Tech |
| Sanofi | Seeking solutions that optimise patient treatment adherence and completion rate. | Healthtech |
| Air France/KLM (Challenge 1) | Looking for sustainable and profitable solutions to reduce their environmental footprint while enriching the travel experience in Africa. | Greentech |
| Air France/KLM (Challenge 2) | How technological innovations (AI, IOT, etc.) could enrich Joon’s customer journey? | Various |
| Saint Gobain (two challenges) | (1) Seeking a satellite trend analysis solution able to predict urban and climate challenges. (2) Seeking a solution to upgrade professionals’ skills across Africa (including remote areas). | GPS (1) EdTech (2) |
| RCS | Seeking a product/technology to secure/store customer ID and authentication credentials. | Security |
| Engie | Seeking solutions ensuring reliable electricity supply in urban areas. | Off-grid Tech |
| Vinci Energies (Challenge 1) | Solutions that seek how to benefit from digitization for a better optimization of industrial and energetic performance. | Energy |
| Vinci Energies (Challenge 2) | Seeking solutions that make energy more accessible in Africa due to energy efficient solutions, energy flows optimization, blockchain, and/or AI. | Energy |
| Leroy Merlin | Seeking the most innovative concept to present large offer products and allow customers to discover showrooms through VR. | AI/VR |

| 2017 | | |
|---|---|---|
| Company | Definition | Verticals |
| Air France KLM | Looking for pan-African innovative payment methods | Fintech |
| Leroy Merlin | Seeking for a solution that could enable to move goods by connecting truck drivers with customers | Mobility Transportation |
| Schneider Electric | Off-grid solutions | Off grid tech |
| RCS | Seeking innovative solutions based on data that enhance customer loyalty | Data/AI |

## Why are corporates setting up Open Innovation strategies?

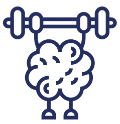
**"Open Innovation is not about outsourcing R&D to somebody else. It is about leveraging and enhancing your internal capabilities by these other mechanisms and making them more efficient and effective. Not only in cost but also in time, and in risk."**

Henry Chesbrough, American organizational theorist, adjunct professor and the faculty director of the Garwood Center for Corporate Innovation at the Haas School of Business at the University of California, Berkeley, at the World Economic Forum

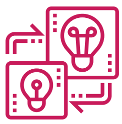
Further to cranking up internal innovation, Open Innovation programs allow corporates to gain insights in the innovation space in the continent. For various reasons such as identifying market trends and understanding the competitive landscapes, corporates, particularly those based outside the continent are seeking African market intelligence. By running Open Innovation challenges they are able to gather valuable data on the ecosystem. By ecosystem, we mean all the different players (e.g. entrepreneurs, tech hubs) that have identified and are growing solutions answering current corporate problems, among others. Concretely, setting up challenges generate a deal flow full of valuable insights and contribute to identify startups that can co-develop a product or partner to access new markets or solve corporate issues. In the long run, Open Innovation challenges may lead to incubation, done by the corporation itself or a third-party, and eventually, alliances or corporate venture investment.

Another reason, more discreet, leans towards communication and public relations. From our observation some Open Innovation challenges appeared to have an objective of strengthening the corporate's brand across the ecosystem as well as show an innovative facade.

### Why corporates are doing Open Innovation in Africa



Stimulate Internal Innovation



Market Intelligence and Market Access


PR & Communication

# KEY TAKEAWAYS

Open Innovation is a concept that people tend to define in an incomplete way. Open Innovation may take several forms depending on the corporates objective, and does not limit to bringing external knowledge into the organisation.

Corporates want to enhance internal capabilites by leveraging external knowledge.

Open Innovation enables access to new markets by identifying potential partners & solutions.

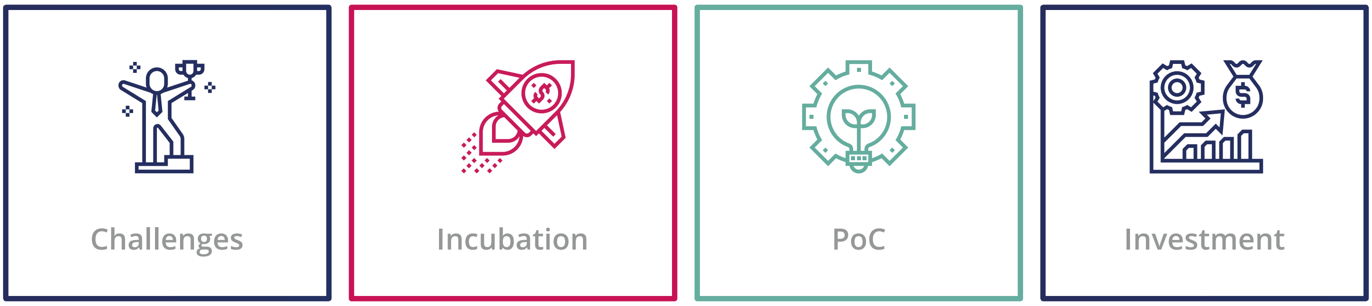
Corporates want to gain market intelligence (e.g. markets trends and competitive landscape understanding) in a continent where data is scarce.

Corporates may do Open Innovation in Africa for communication and Public Relation purposes.

4.2

# HOW CORPORATES ARE DOING OPEN INNOVATION IN AFRICA

## How corporates are doing Open Innovation in Africa



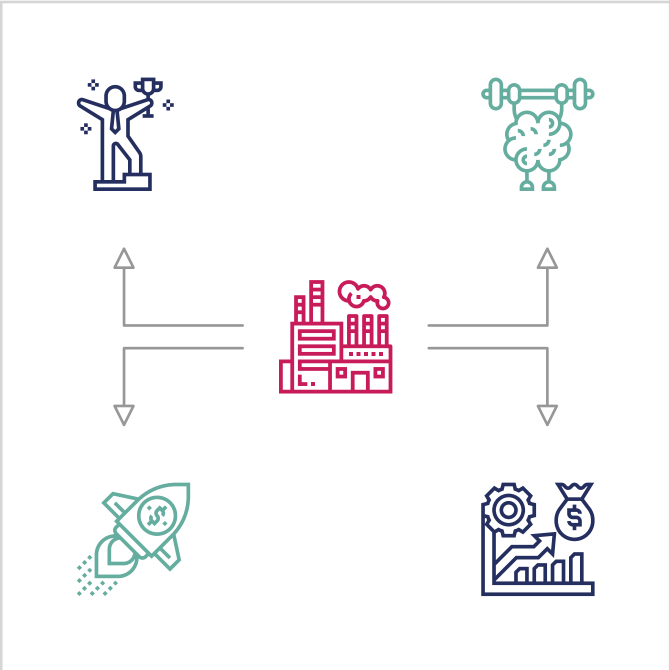

Some corporates, essentialy in more mature markets, do Open Innovation by themselves with advanced integrated developed programs. A good example is the French corporation EDF with its Pulse program. The program is an advanced Open Innovation program with an extended scope that integrates sourcing, incubation and venture investment. The idea is to attract innovative startups through different Open Innovation challenges (sourcing), grow them within the group (incubation) and potentially invest in them (corporate venture investment).

Even though possibly suffering from being perhaps not leveraged enough by the larger ecosystem - something AfricArena has proven to deliver - this is the kind of initiative that the African tech space needs. It needs Open Innovation programs that have an end-to-end approach. If we compare what is happening on the African continent, we have to admit that Open Innovation initiatives are less advanced than in more mature markets.

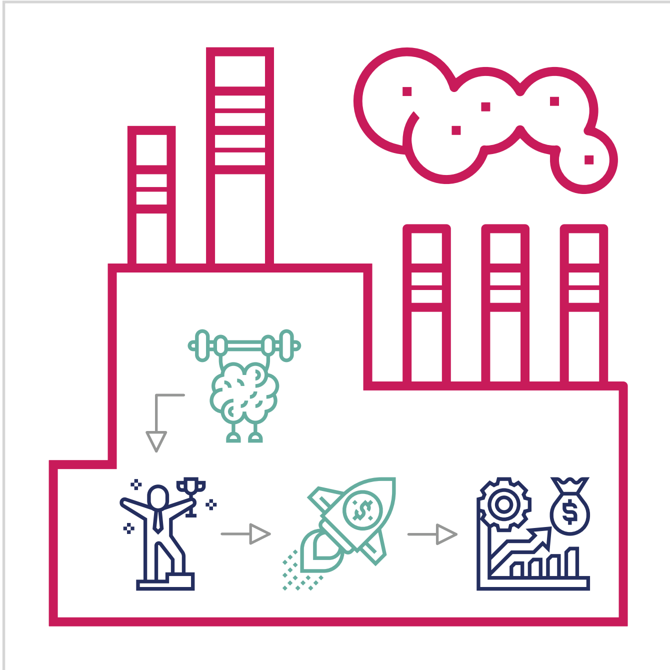
Our assessment of the current situation in Africa is that developed and advanced pan-African Open Innovation programs are scarce. There are pan-African initiatives, but they are rather powered by organisations that are not the corporates themselves, and which have made executing Open Innovation strategy their business model. This is the work that is being done by organisations such as ours, incubators and accelerators across the continent. In Africa, to a greater degree than in more mature markets, corporates tend to diversify their initiatives and out-source them. It is common to see corporates backing small and different programs with different organizations such as incubators or acceleration programs, but not having an integrated program owned by the corporation.

Three finalists per AfricArena challenge come to Cape Town to take part in the AfricArena Summit where they get the chance to pitch to investors and corporate executive partners.

**FRAGMENTED OPEN INNOVATION PROGRAM**
AFRICA



**INTEGRATED OPEN INNOVATION PROGRAM**
EUROPE



AfricArena has developed a strong understanding of corporate Open Innovation challenges by helping several organizations over the last 3 years accessing startups innovating in their domain of interest.

## How do we run an Open Innovation challenge, how do we execute it?

Firstly, the corporate defines the concrete questions or challenges they want to address, usually as a collaboration between the innovation department, the business units involved and with the advice of the service provider. It is important to identify from the beginning the business units that would be involved in the challenge to make sure that it is solving a concrete issue and to ensure that the challenge outcome will have an impact on the corporate. Appointing a powerful sponsor within the organisation who would oversee the whole process and facilitate when necessary is one of the advice we give to our partners.

After the challenge definition, the sourcing starts. This part can take almost up to a year, depending on the corporates needs. In order to source the best startups in the continent, there are different techniques.

Firstly, we leverage our extensive network of investors, entrepreneurs and tech hubs to detect the earliest startups still under everyone's radar. Indeed, as we spend months every year to meet with key stakeholders of the ecosystems, it enables us to reach a very large part of the local tech communities and get media exposure for our challenges.

Secondly, we scour the continent's tech hubs by organizing events in partnership with the top tech hubs in order to meet with the local and international actors of innovation in Africa. We leverage this opportunity to invite pre-selected startups to pitch on scene as part of our selection process before our final summit. We also organize e-pitching sessions for startups that are not located in cities or countries that we visit.  In 2019, the AfricArena team covered 10 african cities and met with hundreds of investors, entrepreneurs, corporate executives and tech enablers across the different regions. You can find some data about our tour events in the table below.

## AfricArena Tour 2019 Key Metrics

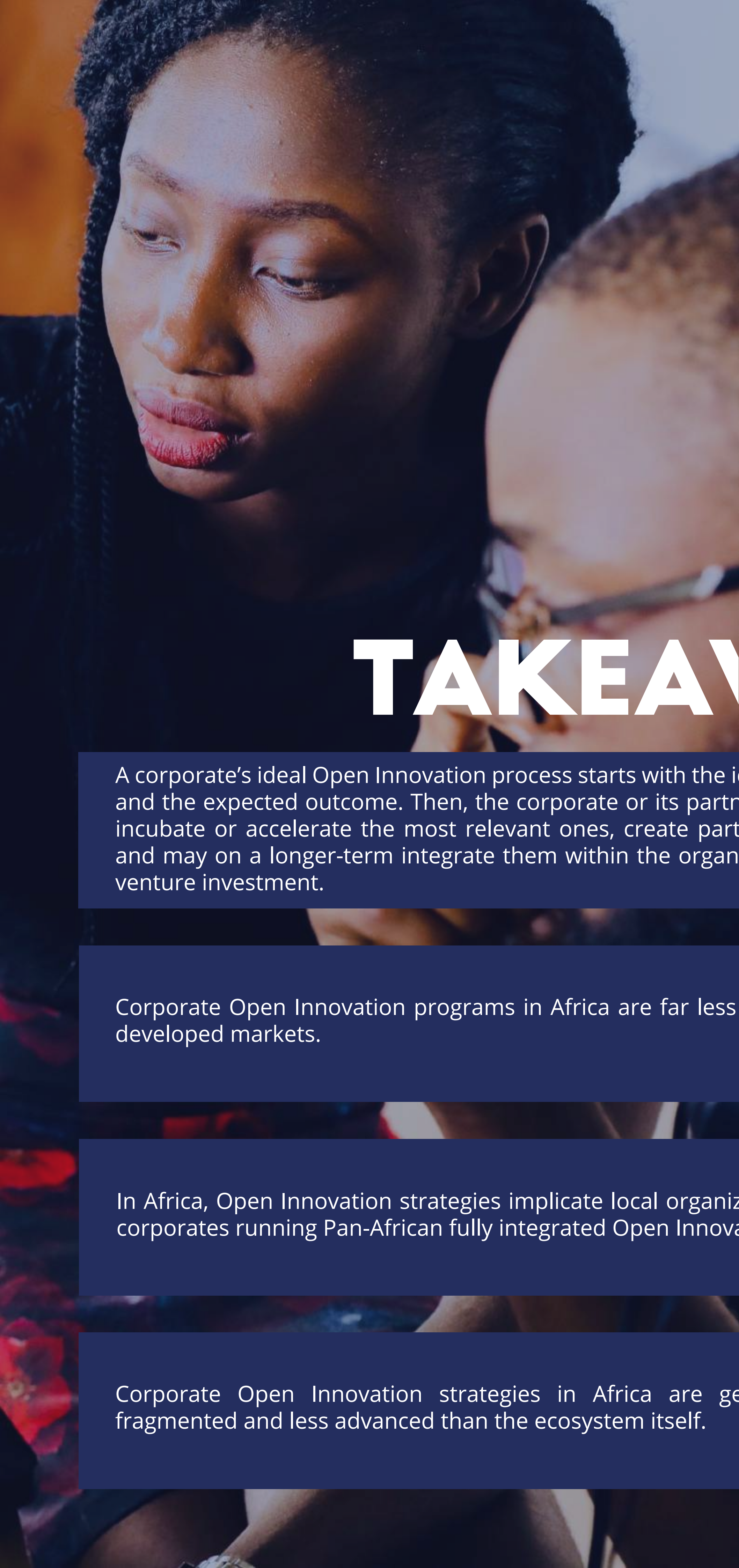
| Destination | Date | Attendees | Startups | Winner |
|---|---|---|---|---|
| Nairobi | 30/04/2019 | 125 | 8 | Cloud9 XP |
| Kigali | 02/05/2019 | 114 | 11 | FreshBox |
| Lagos | 07/06/2019 | 135 | 10 | GeroCare |
| Abidjan | 11/06/2019 | 85 | 7 | African Food |
| Dakar | 13/06/2019 | 110 | 7 | AfrikaMart |
| Casablanca | 03/07/2019 | 136 | 10 | PopAddress |
| Tunis | 05/07/2019 | 175 | 12 | EchoAero |
| Cairo | 18/07/2019 | 114 | 11 | XIOT |
| Cape Town | 03/09/2019 | 162 | 12 | ABI Bonang |
| Johannesburg | 10/09/2019 | 180 | 12 | Khula App |
| **Totals** | | **1130+** | **100** | |

Thirdly, in close consultation with our corporate partner, we select three finalists per Open Innovation challenge. For the startups that would have been selected apart from our Tour events, they would have been selected either due to an introduction from our network or by a pure sourcing from our side (e.g. going to tech events, cold calling targeted organisations or cold direct contact).

Fourthly, and concluding our process, in agreement with our corporate partners, we fly (at our expense) all three finalists per challenge to Cape Town as well as startups nominated as the best of their ecosystems, outside of the challenges (80 startups in total in 2019). We invite as well leading local and international investors and all the key stakeholders that we met along the tour in order to connect these ecosystems and generate opportunities for the selected startups.

In addition to investors and entrepreneurs, our corporate executive partners, the ones that take the decisions and can make things happen in their organizations come together for our Summit and its several accompanying activities. All of these events have a sole purpose: to accelerate innovation in Africa by giving access to funding and network.

Prior to the Summit, the selected startups come together for a few days to network, share inisghts and practices and receive advice to improve their pitches in order to make the most of the Summit. During the Summit, startup finalists enjoy a large visibility by pitching for their respective Open Innovation challenge. One winner is selected by a panel of judges. Thereafter, startups may engage with the corporate that sponsors the specific challenge. It is actually the beginning of the journey. This is where startups integrate the Open Innovation strategy of the corporation and can start working together.



# KEY TAKEAWAYS

A corporate's ideal Open Innovation process starts with the identification of the issue and the expected outcome. Then, the corporate or its partners source the startups, incubate or accelerate the most relevant ones, create partnerships and synergies, and may on a longer-term integrate them within the organization with an eventual venture investment.

Corporate Open Innovation programs in Africa are far less advanced than in more developed markets.

In Africa, Open Innovation strategies implicate local organizations and there are no corporates running Pan-African fully integrated Open Innovation programs.

Corporate Open Innovation strategies in Africa are geographically restricted, fragmented and less advanced than the ecosystem itself.

4.3

# OPEN INNOVATION IN AFRICA: SUCCESS AND LIMITS

## Success

Open Innovation challenges lead to success stories in many ways, and not only by its outcome. During the journey, startups enrolled in Open Innovation challenges may be exposed to many opportunities that may accelerate their growth. Due to our engagement with corporates and investors, entrepreneurs enrolled in our challenges are able to leverage our network to boost their business along the way, even before ending up with a project with the corporate. During their year enrolled in our Open Innovation challenge, startups are able to meet different kinds of investors - from angel investors to institutional ones - but also fellow African entrepreneurs that can give crucial advice and share their experience to further unlock growth potential.

The Open Innovation challenge outcome is not the end of the journey, but actually the beginning. The underlying goal of our challenges is to connect startups with corporates in order to enable growth and innovation. The collaboration may take on different forms - from deliverable to PoC to incubation with local incubators.

Startups that go through Open Innovation challenge processes improve their visibility and may receive warm introductions to investors potentially interested in investing in their company. By pitching in front of a large audience, they get media exposure and are able to build new relationships with fellow entrepreneurs and ecosystem stakeholders. On the corporate side, even for those that did not reach tangible outcomes with the startups, we observe an impact on their corporate culture and their ability to access market intelligence. Overall, it is a net positive.

Consider fundraising - it puts the spotlight on the startups that participated in the challenge, even if they have not won it. Among our AfricArena alumni, more than $150m has been raised in the last 3 years since the year of their pitch at AfricArena. The detailed list is available in the reference page.

AfricArena Alumni have raised more than $150m in the last 3 years

| Year | Number of Open Innovation challenges | Number of companies that raised fund | Amount raised |
|---|---|---|---|
| 2017 | 4 | 15 | **$72m** |
| 2018 | 10 | 8 | **$49m** |
| 2019 | 11 | 10 | **$32m** |
| **Totals** | **25** | **33** | **$153** |

## Limits

From our observation, corporates have different levels of approach and maturity when it comes to Open Innovation. The approaches can be either PR/Marketing centric, market intelligence driven, focused on deal flow for potential partnerships or acquisition, or reliant on a more integrated Open Innovation methodology.

From a corporate perspective, running Open Innovation strategies is not an easy task. From designing to executing the strategy, corporates face many stumbling blocks. Doing Open Innovation potentially implies questioning core internal processes for potential disruption. They need to become more agile, open their doors to external businesses and gain flexibility to implement new ideas into their product development and commercialisation processes. It is also essential to onboard the business units facing the problem with a sufficient high level of decision making and the appropriate resources. At this step, it is important that a powerful sponsor within the organisation takes ownership of the challenge and oversees its execution with an outcome focus. This also requires anticipating the need to have ressources (product managers, development budget) to manage such outcomes (e.g incubation, PoC, venture investment) without knowing what these might be at the onset.

During the post sourcing phase of the Open Innovation process, we often find that the execution of the agreed PoC can stumble upon an asynchronous set of timeframes, expectations and resources between the corporate and the entrepreneur. A proven method to mitigate the risk of failure in the PoC execution phase is to designate either a strong programme manager to handle it, or to manage the PoC through a local incubator or accelerator working with the startup. The extra cost has proven in our experience to be worth the investment.

# KEY TAKEAWAYS

A lack of ownership, high-level decision making or agility in the corporate and its business units involved in the challenge would most likely lead to a disappointing

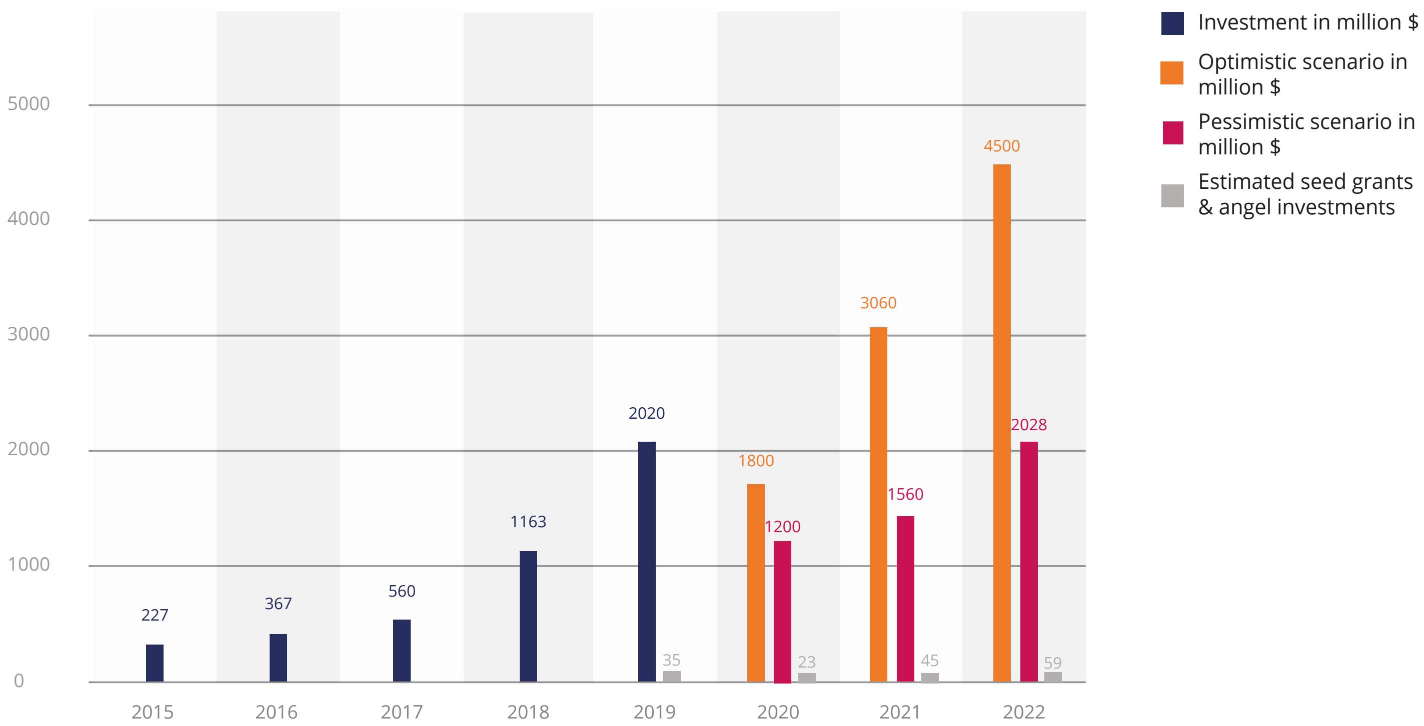
A successful Open Innovation strategy is a win-win. From enabling customer access to startups to enhancing corporate internal innovation, both startups and corporate leverage each other resources to grow their business.

# 5.
# A DIVE INTO AN UNCERTAIN FUTURE PROJECTIONS ON FUNDING OF AFRICAN STARTUPS

The future is certainly not what it used to be. Whilst until early 2020 the trend seemed to be relatively clear in terms of the growth of investment in the continent's tech ecosystem, the Covid-19 crisis has put a high level of uncertainty and poses many challenges. There are:

- Will the investment momentum be put to a brutal halt or only a short delay?
- Can the new context impact the type, size and structure of transactions?
- Will the investors protect their portfolio or make new deals?
- Will the early-stage sector African tech startups, which are largely underfunded and typically have less than 3 months cash on hand, survive the drought?

**Investment in African tech startups: 2015 - 2022**
Source: Partech reports (2015 to 2019), AfricArena Analysis (2020 to 2022)



The previous chart highlights the growth of investments in African tech startups between 2015 and 2019 based on the research from the VC firm Partech Africa. It includes our estimate regarding the amount of seed grants & angel investment in Africa in 2019 (see more explanations in angel investment and tech hubs sections), which unfortunately remains extremely limited.

The AfricArena research team is forecasting, based on assumptions about the time and severity of impact of the current COVID-19 crisis, that new VC funds that have been recently set up and will invest in African startups as follows:

- We estimate that the total of the 2020 investment in tech startups will drop to between $1.2 and $1.8 billion, compared to over $2 in 2019. Based on the deal momentum of $343m in the first 3 months of 2020 (source Maxime Bayen, Greentec) which factored a 27% YoY growth, we expect deal activity to fall sharply in Q2 and Q3 2020, primarily fueled by VC investor doing refinancing deals on their portfolio. In spite of valuation metrics likely down by a 20 to 30% factor, new deals will be limited until the broad economy restarts. The worst case scenario ($1.2 billion) factors no significant pick up of deals this year - yet equates the same level as 2018 - while the best case scenario factors a strong uptake in Q4.

- We foresee that 2021 remains a highly uncertain year with our forecast ranging from under $1.6 billion to over $3 billion, with worst case scenario based on a prolonged and fragmented impact on the African economies, and the best case scenario factoring a full recovery by Q1 2021.herefore resuming and then exceeding the pace observed in Q1 2020.

- 2022 will largely depend on the speed of recovery observed in 2021 and is expected to range between $2 billion and over $5 billion.

Quite clearly, much is therefore at stake for the investment industry and the tech ecosystem in the coming months. Macro economic factors as well as the success of containment and resilience of healthcare systems will play a dominant role. However, the investment community behavior, as well as the active support of governments to the tech ecosystem - which might often not be a priority at all - will prove decisive. One critical factor is the risk that a large chunk of early-stage clusters (from pre seed to Series A) will be largely wiped out in the coming 3 to 9 months destroying much of the future pipeline of investors. We do not expect angel investment or seed funds to be able to perform well in the current context and therefore the continuous lack of early stage investors on the continent might prove particularly problematic at this juncture.

There is one thing we have learnt that in Africa in particular “it always seems impossible until it’s done”. Resilience, Agility and Frugality and amongst the key attributes of our entrepreneurs, of our ecosystem organizations, and of our investors. Let’s hope that as a community, we come together to deliver. After all it is often in crisis time that the best innovations and business models emerge. So let Africa play a key opening chapter of a new era.

# 2019 PARTNERS & SPONSORS

## KEY PARTNERS

## INVESTOR PARTNERS

## PREMIUM SPONSORS

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## SILVER SPONSORS

## BRONZE SPONSORS

# 2019 PARTNERS

## ECOSYSTEM, ACADEMIC & INSTITUTIONAL PARTNERS

## MEDIA PARTNERS

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# GLOSSARY

| Term | Definition |
|---|---|
| Startup | A company using technology to bring new products or services to the market. In our definition, it covers only companies being headquartered in or with most of its operations in Africa. |
| Founder | The initial person(s) that start a business. |
| MVP | Minimum Viable Product. A product with enough features to attract early-adopter customers and validate a product idea early in the product development cycle. |
| Ecosystem | A dynamic framework consisting of a set of stakeholders - startups, hubs, investors, academic institutions, public institutions, corporates - who interact and engage with each other to seize new opportunities, support innovation and strengthen the overall business environment for entities at different stages, sectors, and geographical locations. |
| Venture Capital (VC) | A venture capital firm is a specific type of private equity investment firm that focuses on high-growth potential, risky and innovative businesses. The expected above-average returns compensate for the high level of risk associated. It usually takes the form of an equity stake in exchange of cash money. |
| Private Equity | Private equity is an alternative investment class and consists of capital that is not listed on a public exchange. |
| Fintech | A portmanteau of “financial” and “technology” which refers to any sort of technology used to support or enable financial-related services. |
| Off-grid Tech | Technologies/products/facilities that do not rely on connectivity to a main electric grid to function, but rather, use alternative power options. |
| Healthtech | A portmanteau of “healthcare” and “technology” which refers to the use of technology (databases, applications, mobiles, wearables) to improve the delivery, payment, and/or consumption of care with the ability to increase the development and commercialization of medicinal products. |
| Bootstrap | The founder(s) of a business using their personal capital to start the business and the money coming from the sales to grow it. |
| Limited Partner (LP) | A limited partner in a VC fund transfers to the general partners the assets under management for a limited duration in order to deploy them through investments in startups. Limited partners are not commited operationally in the management of the fund. They are usually public institutions, pensions funds, development finance institutions, etc. |
| Fund Manager | A person or a legal entity who determines the investment strategy and manages the investment of money on behalf of an institution or group of people. |
| Angel Investor | An individual investor who uses their own money to fund an early stage business. |
| Seed Funding | Early stage of funding where the startup might not even have an MVP. |
| Series A Funding | Follows the Seed Funding, usually enables the scaling phase of the business. |
| Early Stage Startups | A startup in its early days, usually with little or no funding. |
| Love Money | Funding received from family, friends, associates or anyone who has close ties with the founder. |
| Evergreen Funds | An evergreen fund is an open-ended fund or permanent capital vehicle that has no termination date. Capital can be raised, repaid, or transferred on an ongoing basis. This fund enables more flexibility to keep or sell companies stakes than funds with a defined closing date. |
| Incubator | A support structure that helps early-stage start-ups transform from idea to venture, by offering advisory services, resources, workshops and hands-on training that guide entrepreneurs in defining and refining their business models and value propositions with the goal of becoming sustainable businesses. |
| Tech Hub | A centre, structure or network comprising actors supporting or facilitating the development of an environment conducive to entrepreneurship or innovation (e.g. incubator, accelerator, co-working spaces...). |
| Startup Act | A legislature that provides a framework that empowers the start and growing of ventures. |
| Accelerator | A structure that offers cohort-based and fixed term programmes to support growth stage ventures to achieve scalability and self-sufficiency. Accelerators offer advisory services, mentorship, workshops, networks and usually investments in cash or in-kind. |
| Open Innovation | The use of purposive inflows and outflows of knowledge and resources to accelerate internal innovation. |
| Open Innovation Challenge | Part of an Open Innovation program. Its goal is to source and connect startups with corporates. |

| Term | Definition |
|---|---|
| Open Innovation Program | A program aimed to stimulate corporate internal innovation, reduce time to market, gather market intelligence, develop new products, reduce risk. |
| Proof of Concept (PoC) | The materialization of a certain method or idea in order to demonstrate its feasibility. |

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