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Abstract

The prospects for long-term growth in Africa are good. Increasingly more countries on the continent are developing into rapidly growing economies with innovative solutions for local needs. Technology-based start-ups and companies in general play an important role in this.

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15.1 Record Growth with Immense Potential for Increase

Africa, with its 54 countries and around 1.3 billion inhabitants, has immense economic potential: According to the World Bank's forecast (2020), consumer and investment spending is expected to reach \$6.7 trillion annually by 2030, and the number of million-plus cities is expected to rise to almost 90. By 2060, about 1.1 billion Africans from the rapidly growing population are expected to belong to the middle class.

New technologies have driven the development of a dynamic startup and IT ecosystem across the continent in recent years. Although about two-thirds of adults do not have a bank account (QZ Africa, 2020), the citizens of the rising middle class use their mobile phones not only for communication but also for shopping and payment, as well as for educational and health services, business matters or official procedures. By 2025, the number of mobile phone customers is expected to rise from just under 500 million to around 630 million. This is just one example of the above-average growth potential of technology-based startup business on the African continent.

15.1.1 African Technology Centers Develop African Solutions

According to a study published by Briter Bridges and AfriLabs at the end of 2019, there were 643 hubs in Africa, divided into incubators (41%), coworking spaces (39%), innovation hubs (24%) and accelerators (14%). Four countries are taking a leading role: 90 hubs were counted in Nigeria, 78 in South Africa, 56 in Egypt and 50 in Kenya. The middle field includes Tunisia with 36 hubs, Morocco with 34, Ghana with 27, Tanzania with 23 and Ivory Coast with 22 hubs. They bear names like iHub or Silicon Savannah in Kenya, Knowledge Lab in Rwanda, Yabacon Valley in Nigeria, Kumasi Hive in Ghana or Silicon River and Silicon Mountain in Cameroon.

The innovations that emerge in African technology centers all have one thing in common: they are adapted to the living conditions in Africa and tailored to the local needs of Africans. New ideas for better food and infrastructure supply as well as topics such as mobility or clean technologies (Cleantech) are in demand, but also for alternative approaches to self-sufficient energy supply, health and education, domestic and foreign venture capital is flowing. The startup analysis portal Disrupt Africa sees particularly large increases and further potential for financial technology and digital commerce.

15.1.2 Returnees and International Sponsors as Catalysts for Entrepreneurship

Many Africans educated and living abroad are now attracted by this potential and the comparatively promising economic conditions in their home countries and return to become entrepreneurs or establish companies abroad with a focus on Africa. Some gov-

ernments, like the one in Rwanda, particularly promote this. Rwanda has articulated the vision of taking the lead in information and communication technologies in the region. The so-called returnees understand Western business and corporate cultures and have useful networks for international investors and companies that are active in Africa or want to become active.

Large European companies also contribute to the growth and success of technology-based startups in Africa, as they need local partners, for example for logistics and other services. For instance, Volkswagen and Siemens have launched a pilot project in Rwanda to promote e-mobility as part of the “Moving Rwanda Initiative”. In the first step, 15 charging stations were available in the capital Kigali for new e-Golfs. The innovative app for car sharing was developed by the local startup Awesomity Lab.

According to the Partech “2019 Africa Tech Venture Capital Report”, 234 African startups raised a total of \$2.02 billion in equity in 250 rounds, compared to just \$277 million in 2015. From 2015 to 2019, the volume of growth financing increased 24-fold from \$38 million to \$912 million. However, the funds for seed funding only increased eightfold over the same period from \$18 million to \$151 million. The volume of financing rounds A and thus predominantly human capital and B for scaling effects (Series A and B Funding) was somewhere in between. Compared to the markets in Asia, the USA and Europe, the growth of venture capital in Africa was more than seven times higher between 2015 and 2019—although the absolute value is low in international comparison and holds immense potential for further growth.

15.1.3 Some African Countries Take a Leading Role

In principle, all African states have attractive startups, especially if they have the potential for pan-African expansion. However, there are some countries that have taken the lead in different aspects such as technology, number of tech hubs and transactions, investment volume, economic stability and access to talent. This includes Nigeria, which according to the Partech “2019 Africa Tech Venture Capital Report” again achieved a record high of \$747 million in venture capital investments, accounting for 37% of the total volume in Africa, even though the country only reached 4th place in terms of the number of transactions. Egypt itself made it into the top 3 and overtook South Africa for the first time with a total investment sum of \$211 million compared to South Africa’s \$205 million. Kenya took second place again with 52 transactions and \$564 million in investment volume. Thus, according to the Partech Report, the four countries Nigeria, Kenya, South Africa and Egypt received a total of 85% of the total investment volume in Africa in 2019. Ghana follows the top 4 and Senegal leads the francophone countries of Africa.

A look at technology-based start-ups shows: According to the “African Tech Startups Funding Report”, 2019 was the best year so far for tech investments. After that, 311 companies received \$491.6 million. This represented an increase of 47% compared to 2018.

Over the same period, the number of tech startups grew by more than 50% according to the annual report of the research portal Disrupt Africa. And for 2020, despite the Covid-19 pandemic, a decline in the single-digit percentage range is expected at most—as many small companies have quickly adapted their business model to the needs during the crisis.

In summary, all recent surveys on Africa's startup and IT ecosystem show high growth over the past years with further very high growth potential. But what about the success rate of young companies?

15.1.4 Operational Support Increases Success Rate

To this end, the GreenTec Capital Africa Foundation, together with Weetracker, examined the data of 500 randomly selected startups based or active in Africa in 2020 and summarized the results in the report “On the path to become the better Africa”. 69% of the funded startups failed after the seed phase. While the overall risk of failure was 54%, those startups that had received operational help and support beyond financial funding achieved better results: the failure rate in these companies was only 33%.

Startups in Africa not only meet consumer needs, they also play a key role in job growth. And this despite a high failure rate due to lack of capital, know-how and network. Currently, the African continent lacks huge sums of private capital, especially in the early phase of business development. To tap the immense potential of companies operating in Africa, a combination of capital and operational know-how as well as a resilient network is essential.

Particularly challenging is the capital procurement in the so-called “Valley of Death”. This is the phase that begins after a company has developed its first product or service—often as part of an incubator or accelerator program—and is now entering the market. In this phase, there are often no more grants and entrepreneurs are on their own. This means that the costs for (new) personnel, product adaptation, rent and the like have to be earned first. But since the product is often not yet able to generate revenues in sufficient amounts, this phase represents a difficult hurdle. Many investors shy away from investing in this phase as they classify it as a high-risk phase. On the other hand, some are looking for acquisitions that are exactly in this phase.

The currently active seed funds include ACCION, CRE, echoVC, Goodwell Investment Nailab, Savannah Fund and Sawari. GreenTec Capital invests in this phase through the Results4Equity Investment Model.

In general, many international investors are looking for so-called unicorns, i.e. companies that can reach a value of over \$1 billion. In Africa, it is worth looking for camels or antelopes. On the one hand, and this has also been particularly shown by the Covid-19 pandemic, it is important to have reserves to survive a crisis, even when money on the market becomes scarce. And on the other hand, it is very important to be able to change and thus adapt direction quickly. This so-called “pivoting” is of course also important for start-ups that do not come from Africa—but in many African countries there are often

circumstances that require quick reactions. These can be political issues or environmental influences. Many African entrepreneurs already have a lot of experience with this and so many were able to show that they could meet the challenges of Covid-19 with an agile adaptation of the business model.

15.2 Leveraging Partners to Seize Opportunities and Manage Risks

The global development and use of new technologies over the past two decades have opened up unprecedented opportunities for the entire African continent in addressing typical African challenges. With the so-called “leap-frogging”, i.e., skipping stages of development of established economies, the historical lack of infrastructure in Africa can be quickly overcome. Examples of this are paying for customers without a bank account using mobile phones or better access to previously unreachable consumers. While there is often no landline for phones in Africa, it is often no longer necessary: mobile telephony has spread extremely quickly. Now the task is to provide comprehensive internet access and make data volumes affordable. The power grid is also not worth mentioning in many countries. But more and more decentralized, regional power grids are emerging, which are powered by solar energy.

15.2.1 Current Developments Drive the Economy

It is the perfect time to invest in technology-based startups and other young companies in Africa. There are several reasons for this, and we will look at three of them

- Expansion of local value creation
- Participation in the demographic upswing
- Integration of the pan-African economy.

Firstly, regarding value creation: Africa is rich in raw materials and resources. However, so far, the largest share of value creation is generated outside Africa. An example is cocoa production. African farmers grow the cocoa and harvest the beans, but the processing process takes place outside of Africa—the African value chain is short. Access to technologies enables African countries to increase local added value. This leads to a drastic change in the entire ecosystem on the continent.

Secondly, regarding the demographic upswing: The continent is experiencing unprecedented population growth. This leads to a growing demand for products and services. Since the population is very young—more than half of all Africans are not older than 25 years—they can develop into relevant consumers through education. The increase in population and rising incomes are the key growth drivers.

Thirdly, regarding the pan-African economy: Technology-based startups with an innovative business model initially build their company successfully in their own country. Often, the subsequent expansion into neighboring countries is already part of the strategy at the time of founding. This allows scaling effects to be realized and African national borders to be overcome with the help of digitization. Another major step for the integration of the African economy across national borders is the “African Continental Free Trade Agreement” (AfCFTA), an African free trade agreement between 54 member states of the African Union (AU). The agreement came into force in May 2019 after ratification by 22 African states and was extended to 54 states in January 2021. This makes it the world’s largest free trade zone in terms of the number of member states, with a gross social product of 3.4 trillion US dollars (World Bank).

15.2.2 New Technologies Enable Efficient Solutions for Daily Needs

The increasing level of education and growing entrepreneurship are leading to an increasing number of international investors and business partners becoming interested in the developing countries in Africa and their economy. With regard to the various sectors, those that meet the daily needs of the African population and can work more successfully with new technologies offer particularly good opportunities.

According to the World Bank, agriculture contributes about 15% to Africa’s gross social product. Experts predict a trillion-dollar market by 2030 and point out the need for environmentally friendly and sustainable production increases. New technologies such as platforms for purchasing, distribution, and logistics are in demand, also to allow small farmers to participate in economic development.

In 2020, the World Bank estimated the number of Africans without access to electricity at 600 million. This opens up billions in sales for the so-called “off-grid” solutions, i.e., the independent solar power supply—and enables comprehensive internet access with sufficient data volume even in regions where this has not been possible so far.

The rapidly growing African population and the associated economic upswing ensure that, according to calculations by “Environmental Science Europe” (2019), around 513 million tons of plastic end up in the world’s oceans every year and only 3% of waste is recycled. Some companies have developed suitable business ideas and successfully implemented them.

15.2.3 Know and Control Risks

But what risks should potential investors and business partners know in order to manage them successfully? Here, the topics of complexity, transparency, legal certainty, and access are at the top of the list. High-quality information from various sources and locally experienced partners as well as established networks are a must. Below are some examples of typical risks.

Firstly, the African market, compared to China or India, for example, is less homogeneous. The history, politics, administration, economy, and culture of the 54 countries differ significantly in some cases. This can have historical reasons: Anglophone and Francophone countries, for example, have different economic, administrative, and legal systems, but also a different culture. Geographical differences between north and south play a role. Or the political and regulatory measures of governments that enable and also accelerate successful economic development. This means: there is not one solution.

If, for example, regulation in a country is still in the development phase, a newly founded company initially has various options. But when the government regulates the FinTech sector more strictly, as in Nigeria, for example, the business model of the young company can become obsolete or at least face unexpected major challenges. Some investors now mitigate at least the risk that investment sums can no longer flow out of a country due to regulation by resorting to a holding structure at the African financial location Mauritius or even in Delaware in the USA.

On the subject of corruption: International investors and business partners now increasingly have the opportunity for direct participation and cooperation at the company level—instead of higher-level organizations. The shift from public to private partners helps to limit the risk of corruption. The young generation is driving the transformation, they want to take their lives into their own hands, independent of government and large organizations.

The choice of business model also plays a role. How easy or complex is it to estimate demand, how realistic is the business plan, how successful were others in this segment, what were the hurdles, how could they be overcome? Industries such as agriculture and logistics, but also financial services, health, e-commerce, and education, each in connection with new technologies, offer good opportunities.

The reliability of framework conditions (governance) and the legal system perceived in Europe is lacking in Africa. Here, the law is strongly tied to the government and there is less transparency. A possible solution to this is to focus on those countries and actors that successfully take on a pioneering role in expanding the economy.

For international investors and business partners who want to participate in the success of technology-based startups or established companies and minimize risks, professional platforms offer an ideal entry point. There, the now experienced and proven actors and organizations meet, exchange ideas, check their information, and leverage their know-how and network.

15.3 Diversity Characterizes Africa

What characterizes the technology-based startup market in Africa? Why is it not comparable to the markets of other developing countries? What are the differences and what should potential investors and business partners pay attention to?

The market for technology-based companies in Africa is characterized by the typically African characteristic of diversity. Various aspects such as history, location, resources,

politics, economy, and culture, for example, shape the level of education. And the higher the level of education, the faster the technological progress.

But that is only one aspect. There are some countries that take on a pioneering role for very different reasons. These include Nigeria, with its large population and the resulting market; Ghana, due to its dynamism; Rwanda, with its ability to innovate and regulate; South Africa, as the long-established financial center of the continent, or Kenya, as the preferred location for technology and development. All the pioneers mentioned have a local investment network.

However, the presence of raw materials, and thus, one would think, the sufficient supply of domestic capital, shows no direct influence on the technological progress of a country. On the contrary: the presence of raw materials sometimes leads to conflicts that paralyze the economy, and resource-poor smaller countries like Rwanda seem to be spurred on to develop ambitious strategies to boost their own economy using new technologies—possibly just to compensate for the lack of raw materials.

In addition to macroeconomic influences, cultural differences play a role. While freer markets with equity investments in startups are common in English-speaking countries, French-speaking countries tend to rely on government activities as well as debt and very long-term investments. This leads to different growth rates. The coexistence of different ethnic groups can also significantly influence the economic development of a country. On the one hand, different ethnic groups can lead to a wealth of ideas and innovation, as different cultures develop different solutions to challenges. On the other hand, conflicts are often observed, which are about power and distributions, often based on centuries and even millennia-old conflicts between ethnic groups or (ruling) families.

While women played a role only in one-person companies for a long time, increasing education is currently leading to a rising number of successful female founders and women in top management of technology-based companies.

In summary, the diversity of the individual African countries and their technological development account for the major challenge of sufficient financing and thus the rapid further development of the continent. A glimmer of hope on the horizon for the African economy is the aforementioned “African Continental Free Trade Agreement”.

There are also differences with regard to the role of international business partners and investors. China discovered Africa early on as a sales market and as a target for large infrastructure investments in exchange for raw materials. Many European companies now see themselves in competition with the Chinese, but these produce at far lower cost, are less complex in cooperation, and are ready to finance projects. While China focuses on business, topics such as impact investing or sustainability and other values often play a major role for public and private European business partners.

With its diversity, Africa differs from other growth markets: When Europe discovered emerging countries in Asia, such as India, their markets were already much more uniform and better structured. The challenge was simply to develop alternative prod-

ucts and services that suited the needs of these markets. Many European countries now have extensive experience in this area. However, a challenge in Africa is also the different standard of technology. While some African countries, for example, already use more modern applications for using mobile phones than many Europeans, they are less advanced in the development of other technologies.

However, Europeans want efficient industrial and economic ecosystems to which they can sell their products and services. Africa is still a long way from this. The task is to develop solutions together. Germany has an advantage here, as it has one of the most dynamic markets for technology-based companies worldwide and thus the chance to help build up the African middle class.

15.4 Case Studies: Successful Business Models and Cooperations are Crisis-Proof

An exciting example of a German company active in Africa is Boreal Light GmbH. Boreal develops solar-powered water purification systems, so-called “Water kiosks”. The business model was able to develop well because Boreal involves the local communities and builds an independent ecosystem around the water kiosks. These are usually operated locally by partners and the water is sold. The technical monitoring and sometimes also maintenance take place from Germany. Covid-19 could not stop the development. Even if there were some delays due to transport challenges, the company was able to record a steady increase in orders and partners and secure investments of several million euros in the company for further scaling at the beginning of 2021. Water kiosks are now not only in Kenya, where the first ones were installed, but also in Yemen, Somaliland, and Uganda.

Another good example of a company that was founded by an African in Africa is Amitruck. Comparable to the taxi platform UBER, Amitruck mediates between customers who need logistics services and truck drivers. The business concept addresses a rapidly growing market, which is estimated at a volume of 23 billion US dollars in Kenya alone. Amitruck plans to achieve a share of up to 500 million US dollars. It’s still a long way to go. But the tech startup, which was only founded at the end of 2018, has already achieved considerable growth. Amitruck recorded just over 500 deliveries per quarter in the third quarter of 2019. This number has more than quadrupled by the same period in 2020 and companies like DHL, Jumia, or Twiga Foods are now among Amitruck’s customers. In 2020, a venture capital investor also invested a significant amount in the company to enable further growth. Despite a small growth dent during the Covid-19 pandemic, the company was overall able to emerge stronger from 2020. Transportation, especially of food and other goods to meet basic needs, is always needed and, during a crisis, reliable and safe service becomes even more important than before.

15.5 An Ideal Time for Investors and Business Partners

The African continent with its immense growth potential offers countless opportunities for international business partners and investors to participate in the course of investments and cooperation. If Germany does not seize the opportunity to build partnerships with mutual benefits, other countries will. Especially in the post-Covid-19 era, an ideal time window for entry is offered, because for good business models of technology-based companies in Africa there is already increasing competition and sometimes also high company valuations.

African startups should, like German ones, be closely connected with the middle class and thus with the local sociocultural environment. This boosts value creation and integration.

For successful market entry in Africa, one must understand the business model of one's investment and partner. Typical questions are: What level of technology exists? Who are the innovation leaders and where are they? Who else is in the network? What is the trend? What already exists? What is needed? How do we jointly develop a product or service to meet local needs?

To leverage the immense potential of companies operating in Africa, a combination of capital and operational know-how as well as a robust network is essential. Cooperation with locally experienced partners not only minimizes risk but also increases the chances of success.

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Erick Yong is particularly concerned with the ecological and economic impacts of his projects on the African continent. In 2017, GreenTec Capital was awarded the German Entrepreneur Prize for Development in the Innovation category. Erick speaks fluent English, French, and German and is skilled in intercultural cooperation. He has a passion for basketball and was a professional player in his youth.



Thomas Festerling is CFO and co-founder of GreenTec Capital. His extensive financial and investment knowledge is essential for the development of the GreenTec investment approach. Thomas Festerling was Head of Product Management (International & Customized Funds) at Deutsche Bank Asset Management subsidiary and was promoted to Director within five years. Thus, he has more than ten years of financial experience and an extensive network in the finance industry. After a successful career at Deutsche Bank, he decided to use his financial expertise for work with a direct impact. Through his family ties to Peru, he was familiar with the challenges in emerging countries and began to volunteer in various projects in Africa and Latin America. He decided to make this his full-time job, as his skills and knowledge can make a significant difference for companies and projects that want to grow in emerging and developing countries.