frontier economics

ATBN AFRICA TECHNOLOGY BUSINESS NETWORK

Early stage investment in sub-Saharan Africa's tech sector

A report prepared for Africa Technology Business Network

November 2018

Executive Summary

We examined the barriers faced by tech start-ups in Sub-Saharan Africa

Approach

1. Desk Research
2. Qualitative Interviews
3. Synthesising

Key Findings

Funding is a major issue for Sub-Saharan start-ups

- Tech start-ups struggle to raise funding from both the informal sector as well as banks and angel investors.

Tech entrepreneurs in the region face several barriers

- Funding barriers are exacerbated by other factors like lack of high-quality talent and supporting infrastructure

A lack of successful exits in the tech sector is holding the region back

- Successful exits would develop the ecosystem, and also lead to additional investment

A number of ways of mitigating the existing challenges were suggested

- These included intervention by governments to facilitate investment in start-ups, via prioritisation of technical education for example. As well as improving perceptions of the region

We carried out qualitative research to explore the barriers faced by technology start-ups in sub-Saharan Africa

Interviews

Entrepreneurs

Funders

Tech Hubs

1. Tunji Eleso – CC Hub, Nigeria
2. Kim Kamarebe – Damascus Capital, Uganda
3. CK Japeth – Innovation Village, Uganda
4. Maxime Bayen – GSMA Ecosytem Accelerator
5. Albert Opoku – HapaSpace, Ghana
6. Barrett Nash – SafeMotos, Rwanda
7. Yaron Cohen – Viktoria Ventures, Kenya
8. Tomi Davies – Africa Business Angel's Network

Method

- We carried out semi-structured one-to-one interviews with investors and entrepreneurs active in the sub-Saharan Africa early stage technology sector.
- Tailored topic guides were used to as a starting point for the discussions. These topic guides covered:
  - Challenges faced by start-ups and investors
  - Characterisation of ecosystem
  - Evolution of barriers over time
  - Potential policy actions
  - Existence of funding gaps

Sub-Saharan Africa is a large rapidly changing region with significant developmental issues

$1,500

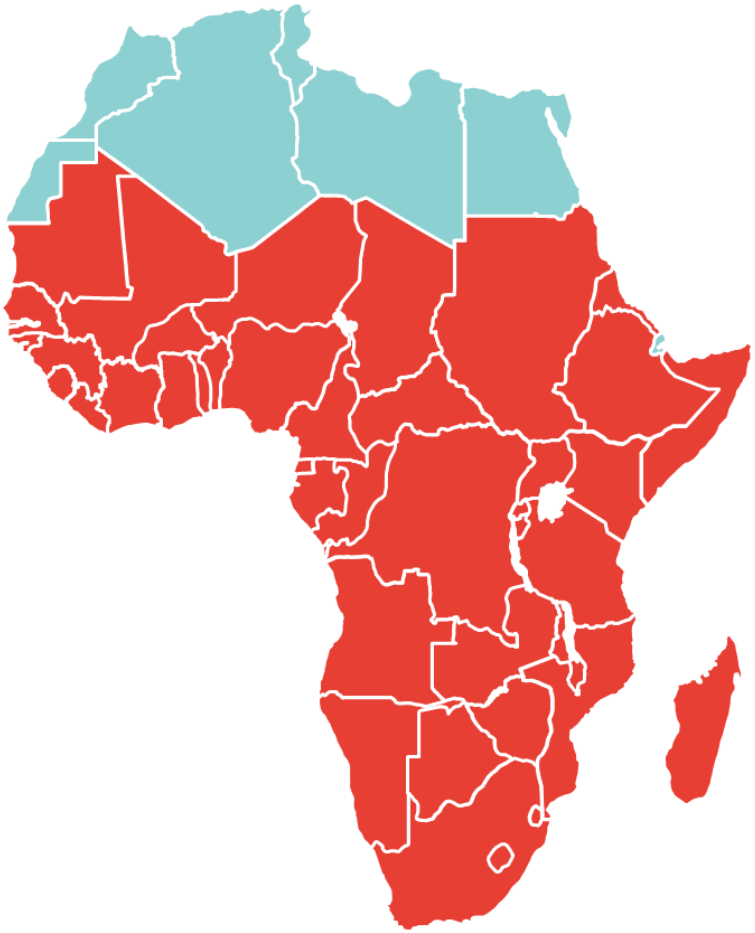
Gross national income per capita. Global average is $10,300

74

Mobile cellular subscriptions per 100 people

20%

Proportion of the population using the internet



1 Billion

Population. 54% growth since 2000.

60

Years of life expectancy at birth. 19% growth since 2000.

69%

Proportion of the urban population with access to electricity

2.9%

Average annual growth in GDP per capital since 2010

All statistics from the World Bank (2017 A) https://data.worldbank.org/region/sub-saharan-africa

Technology has the potential to transform sub-Saharan Africa for the better

Sub-Saharan Africa is "*on the cusp of a tech-driven transformation that is already beginning to make people healthier, wealthier and better educated at a pace that only recently seemed unimaginable*" Economist (2017)

- The World Bank (2016) has explored how the internet and digital technologies promotes development:

Inclusion	The internet reduces search costs and minimises information asymmetries. This can make new transactions possible. For example more farmers in Africa can now access credit because lenders find it easier to assess creditworthiness
Efficiency	Digital technologies allows for increased automation and coordination. This makes existing transactions cheaper. African retailers can now use real-timer inventory systems.
Innovation	The extreme case of efficiency is when transaction costs fall to zero. This is facilitated by new platforms such as digital payment systems or streaming music. This gives rise to increasing returns to scale which stimulates new business models.

- Sub-Saharan Africa first began to embrace new possibilities following the introduction of the mobile phone. This allowed millions of people to 'leapfrog' the existing landline technology and promoted inclusion, efficiency and innovation (Economist, 2017).
- Each 'leapfrog' makes subsequent innovations easier:

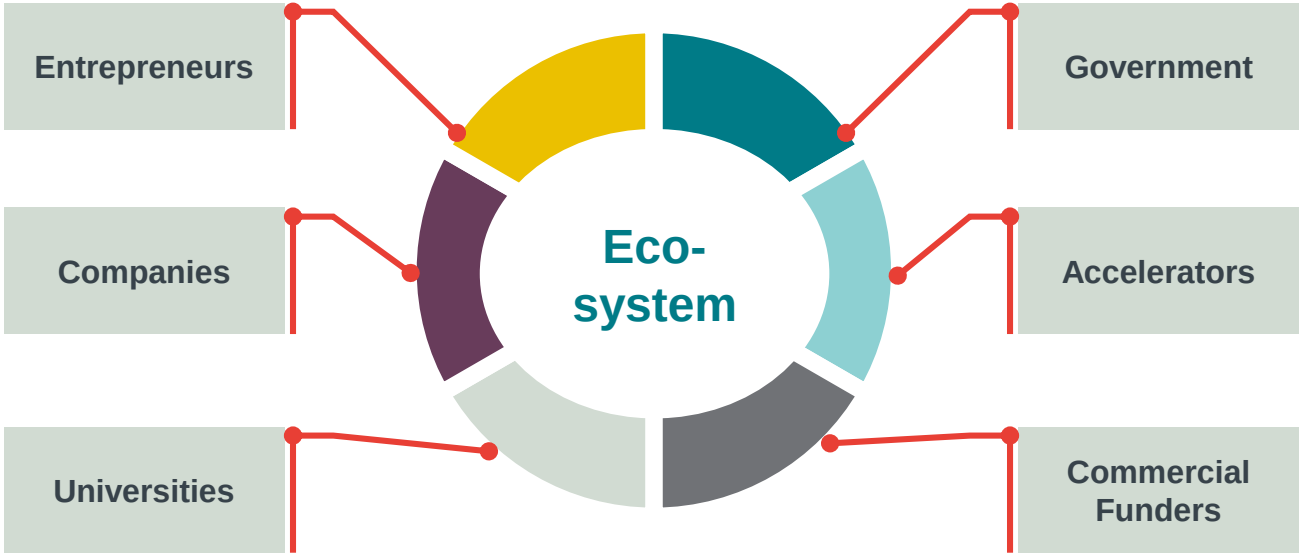
Pay-as-you-go energy
Supply chain management
Labour market matching
Credit risk assessment

African entrepreneurs and start-ups will help drive this transformation. This requires a functioning eco-system

Local ideas and start-ups are needed to solve uniquely African problems.

- Locally driven strategies are needed to address challenges (I-Dev International, 2016)
- Much of the innovation taking place currently in sub-Saharan Africa arises from the combination of imported technologies (smartphones) and local solutions to uniquely African problems (mobile platform that allows informal retailers to engage in inventory management).

Entrepreneurship can only flourish in a healthy eco-system in which a wide variety of stakeholders interact (OECD, 2011):



- The OECD's eco-system assumes certain basic building blocks are in place such as a base layer of infrastructure (electricity and internet connections). This will not always be the case in sub-Saharan Africa.
- Funding is also needed at all stages of the start-up lifecycle. This may be a major challenge in sub-Saharan Africa

Tech hubs and community spaces are becoming more common across the continent.

There have been numerous tech-hubs that have sprung up around the continent

- The World Bank defines **tech hubs** as *spaces mainly focused on developing a digital entrepreneurship ecosystem, or a network of engagement between digital entrepreneurs, designers and potential investors.*
- Tech hubs can:
  - Link entrepreneurs with established businesses
  - Offer mentorship
  - Attract capital and expertise.
- A study by GSMA (2018) revealed that since 2016 the number of active tech hubs across Africa has grown by over 50%. In early 2018 there were 442 active hubs.Many of these hubs are in Sub-Saharan Africa. These include Kenya's iHub, Uganda's Hivecolab and Nigeria's CCHub. Some are social venture focused, while adopt a profit oriented accelerator model.

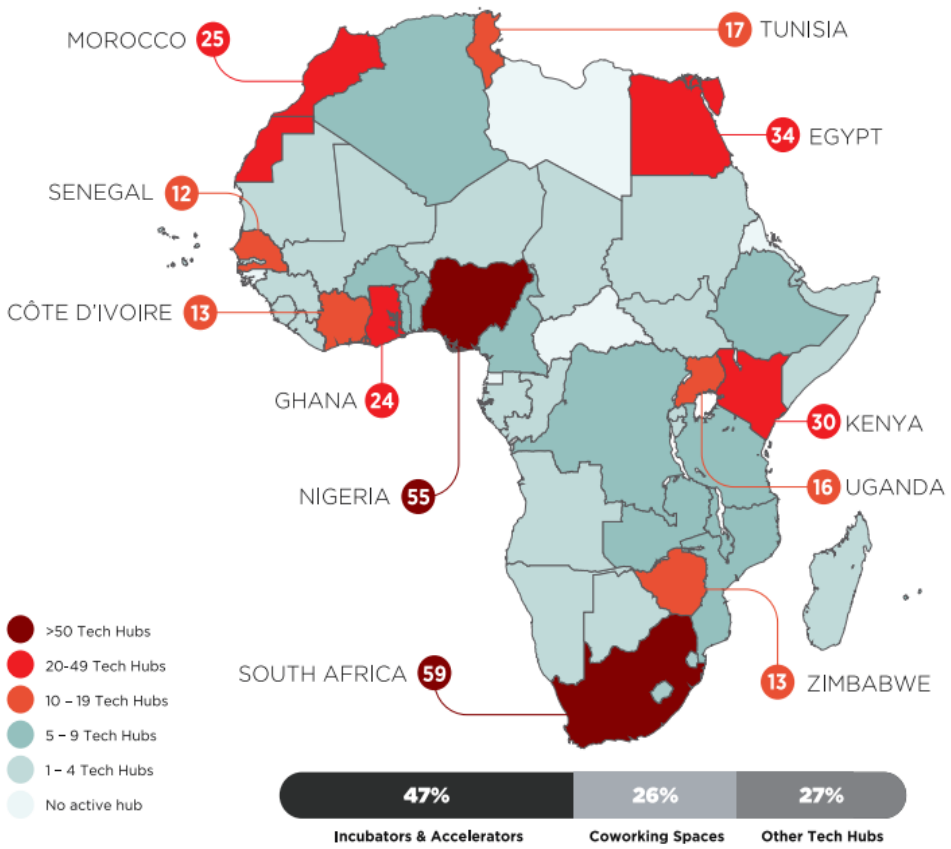
Sources:

http://blogs.worldbank.org/ic4d/importance-mapping-tech-hubs-africa-and-beyond

https://www.gsma.com/mobilefordevelopment/programme/ecosystem-accelerator/africa-a-look-at-the-442-active-tech-hubs-of-the-continent/

http://includeplatform.net/wp-content/uploads/2016/11/Heilbron_ICT-and-innovation-as-a-key-to-success.pdf

Tech-hubs in Africa



There are different types of organisations who may provide funding for start-ups in sub-Saharan Africa…

Foundations

Angel Investors

Development Organisations

Early stage VC Firms

…however, existing research suggests tech start-ups in Sub-Saharan Africa face a funding barrier

Start-ups in sub-Saharan Africa may struggle to raise capital:

- Banks are reluctant to lend to young firms due to their risk profile and lack of collateral (OECD, 2011). This is exacerbated in sub-Saharan Africa as much of the region is characterised by shallow capital markets (GIIN et al., 2015). In sub-Saharan Africa tech businesses are not getting the amount of money they need in the seed or even growth raises to develop strong business models (I-Dev International, 2016).
- Biggest sources of funding so far remain family and friends, grants and crowdsourcing, according to the Anzisha Youth Entrepreneurship Survey 2016.
- The market for Angel investing in Africa is still developing. The African Business Angels Network (ABAN) reported that the number of deals closed every month are in the 'tens' rather than the hundreds or thousands.[1] In Europe 90% of the early stage investments come from angel investors and the total size of the angel investment market is in excess of €9.8 billion.[2]
- This severity of this issue will vary. Early stage funding may not be a major barrier in all locations and sectors across sub-Saharan Africa. For example Disrupt Africa (2017) report than Fintech start-ups are the most attractive for tech investors.

$70-90 Billion

Estimated SME Credit Gap in sub-Saharan Africa (IFC, 2013)

$50 Billion

Projected size of the early stage investment market by 2020[2]

This funding gap could represent a market failure:

- There are a number of reasons why the early stage funding market may not be functioning efficiently (OECD, 2011):

1. There is a clear information asymmetry in the market. It is not easy for entrepreneurs and investors to find each other. This could potentially be improved by start-ups partnering up with more established businesses to increase their visibility.
2. There could be positive spillover-effects from early stage investment that may not be taken into consideration by investors. Research indicates that companies backed by angel investments have been important contributors to economic and job growth.

- Governments have used the market failure argument listed above as justification for intervening in the early stage funding market. For example the UK provide tax relief for angel investors via the Enterprise Investment Scheme and the Seed Enterprise Investment Scheme

1 https://opentraction.com/introducing-microtraction-d3c2991de347

2 http://wbaf2018.istanbul/wbaf-annual-congress-2018/about/

Interviewees agreed that funding was a major issue for start-ups in Sub-Saharan Africa

Key messages

- Tech start-ups in the region suffer from a lack of funding
- There are a number of reasons for this gap

Tech start-ups in the region suffer from a lack of funding

- There was agreement amongst the interviewees that tech start-ups in Sub-Saharan Africa lack funding. However, there was also a consensus that this lack of funding was not concentrated on the tech sector but was more widespread. Interviewees also told us that the extent of these funding gaps will vary considerably by geography across the region.
- Most interviewees felt as though that major funding gaps existed across the entire funding spectrum from initial seed capital for brand new start-ups to venture capital for more established ventures. However, some stakeholders indicated that the gap was most severe in regards to mid-level funding
  - We were told that in some cases entrepreneurs were able to raise initial seed capital through informal routes or via competitions for example. Also, once start-ups reach a certain level of maturity Venture Capital (VC) companies were willing to make relatively big investments. However, there are fewer medium sized funding options relative to opportunities at either end of the spectrum. This could be because medium sized investments still require high levels of due diligence which could reduce their commercial attractiveness.
- Stakeholders were confident that the funding gap was leading to tech start-ups with high potential failing. Specifically stakeholders indicated that there are good ideas that have shown proof of concept which cannot secure funding: *"Currently start-ups are failing for the wrong reasons"*

There are a number of reasons for this gap

- Firstly, lack of informal finance from family and friends and reluctance of banks to engage with start-ups. Also potential angel investors have lots of other attractive investment options which offer higher potential returns for less risk. Specifically interviewees referred to government bonds, commercial debt instruments and property as alternative investment options which may be more attractive than supporting a tech start-up. In addition investing in start-ups is not yet an established part of investors' mindsets across the entire region.
- Also there is nervousness amongst international investors who do not always understand what is happening on the ground and therefore lack confidence. These information gaps can relate to market size and consumer preferences in the region.

1 https://www.ft.com/content/6e2e0a7a-504a-3ac1-bd83-e68f21090d5b

Our research indicated that tech entrepreneurs in the region face several barriers

Key messages

- Funding gaps can interact with other issues faced by entrepreneurs
- Some entrepreneurs in the region lack experience and market insight
- Additional capital alone is not enough to boost the start-up sector

Funding gaps can interact with other issues faced by entrepreneurs

- Interviewees repeatedly emphasised the high costs of running a tech start-up in sub-Saharan Africa. This is because high quality talent or supporting infrastructure (such as reliable broadband for example) are in short supply and are therefore very expensive.
  - Highly skilled workers can provide expertise in areas such as marketing or finance where some tech entrepreneurs are less expert. However, these employees can charge a premium rate which means they are out of reach for most entrepreneurs.
- Entrepreneurs ability to overcome these barriers is hampered by a lack of funding.

Some entrepreneurs in the region lack experience and market insight

- In addition to funding gaps interviewees indicated that entrepreneurs in Sub Saharan Africa can lack experience and market insight. This is partially due to underdeveloped ecosystems as entrepreneurs tend to learn best from other entrepreneurs.
- This is consistent with research by GIIN et al. (2015) who report that the investment readiness of enterprises is a crucial constraint to impact investments in West Africa. Businesses can lack trained personnel and enterprises do not always have robust business systems.

Additional capital alone is not enough to boost the tech start-up sector

- We were told that while capital is badly needed it is by no means sufficient to foster successful tech ecosystems. Stakeholders made the point that the funding needs to be both “smart” e.g. accompanied by market savvy and “patient” - not overly focused on short term returns.
- Interviewees also repeatedly emphasised the importance of high quality mentoring and the existence of role models both of which enable start-ups to learn from the experience of others. Mentoring could also help to overcome information asymmetries mentioned above as established entrepreneurs from the region with wide networks could help to raise the profile of new start-ups and signal the value of potential investments. Mentoring has been successful in supporting tech start-ups elsewhere. For example Tech City UK’s (a government funded body) provides start-ups with access to expertise from the private sector and government.

1 https://technation.io/programmes/future-fifty/

Interviewees told us that a lack of successful exits in the tech sector is holding the region back

Key messages

- High profile successes would help the ecosystems develop
- Successful exits can lead to additional investment
- Exits can also accelerate the decline of existing barriers to funding

High profile successes would help ecosystems develop

- Stakeholders repeatedly emphasised that a few high profile examples of success would assist tech entrepreneurs in Sub Saharan Africa and help ecosystems to mature
  - High profile major exits can cause a snowball effect and would encourage angel investors or other high net worth individuals that tech start-ups can be a viable and profitable investment opportunity
  - Stakeholders did not indicate that there was a shortage of entrepreneurial ideas in the region. However, one stakeholder felt that start-ups were perceived negatively by certain individuals and organisations and that this would be abated through more success stories.

Successful exits can lead to additional investment

- In addition, interviewees also highlighted that major commercial successes for entrepreneurs also boost liquidity as founders tend to reinvest in other (and often tech) start-ups.
  - They can also offer credible mentoring and guidance, that is also industry and region-specific (as opposed to hubs that are often located outside of Africa and offer more generic advice).

Exits can also accelerate the decline of existing barriers to funding over time

- Stakeholders were optimistic, and felt things have improved over time, with governments becoming more conducive to an entrepreneurial environment, more hubs being established, a greater focus on building technical skills through not just training and workshops, but also at the school level.
  - Success stories would also reduce these barriers greatly, by attracting investment – especially from international investors
- The importance of successful exits in developing a thriving ecosystem emphasises the value in providing targeted support to help the sector develop. The snowball effect referred to above may mean that less intervention is needed in the future.

Our interviewees suggested a number of ways in which to mitigate the existing challenges

Key messages

- **More intervention is needed**
- **Hubs and incubators have a crucial role to play, provided they are funded well**
- Efforts could be made to change international investor perceptions

More intervention is needed

- Stakeholders iterated that the challenges faced by tech start-ups will not disappear organically. Some intervention either by governments, international organisations or multi-national businesses can play an enabling role in mitigating some of the barriers.
- Stakeholders also told us that in certain parts of the Sub-Saharan region the government can actually inhibit start-up activity:
  - Governments' need to raise finance can crowd out investment in entrepreneurs. This is because Government bonds may offer a higher risk adjusted return than an early stage start-up.
  - Specific government policies regarding foreign currency outflows for example can reduce liquidity and dissuade international investors
- Some countries in the region lack clear, up-to-date legislation regarding commercial activity. In other areas investors may be concerned that policy direction could change unfavourably and unpredictability in the future due to competing political factions espousing different views (GIIN et al., 2015). This could limit the commercial attractiveness and increase the risk of investing in the region. Interviewees highlighted that this varies considerably by country across the region. Interviewees also highlighted that often, formulating the policy is not the problem, but rather their implementation. They cited examples where the government had failed to follow through and deliver policies that had already been legislated (e.g., making ICT education examinable in Ghana's schools to incentivise improvements in technical education).
- Other regions have successfully increased tech start-up activity via government intervention. For example the French Tech Visa and French Tech Ticket programmes successfully support international tech entrepreneurs via funding and partnership support.

Hubs and incubators have an important role to play

- Continued development of incubators and accelerators were generally viewed very positively by interviewees. We were told that the quality of these hubs can vary. Specifically to make a meaningful contribution the hubs need to be properly funded themselves. In addition, we were told that incubators are far more beneficial when they are indigenous rather than based outside of the region as this can lead to a disconnect between the start-ups and the target market. Stakeholders also suggested making better use of existing resources such as universities in order to establish incubators - which can catalyse growth.

Our interviewees suggested a number of policies which could mitigate the existing challenges

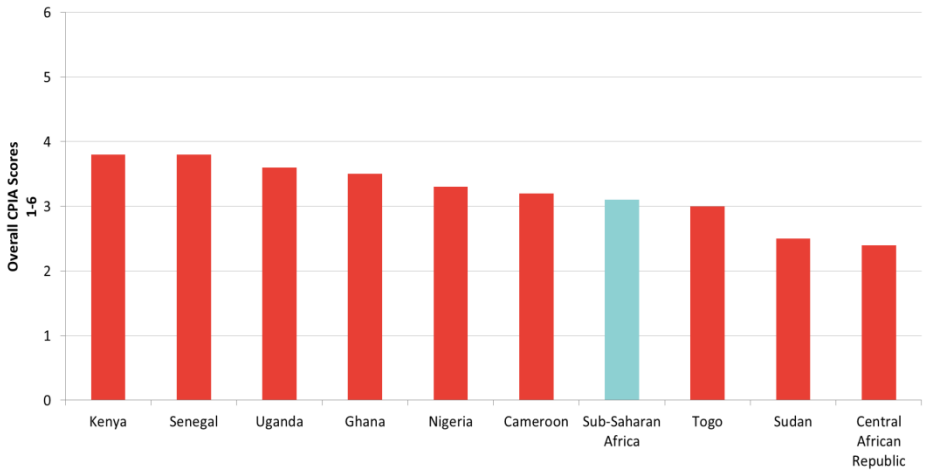
Key messages

- More government intervention is needed, aided by established domestic businesses
- Hubs and incubators have a crucial role to play, provided they are funded well
- **Change international investor perceptions**

Change international investor perceptions

- Stakeholders suggested that Sub-Saharan governments could in some cases market their country's brand to the rest of the world as an investment destination:
  - This would help to dismiss negative perceptions of Africa amongst an international audience
  - It could also encourage the diverse African diaspora settled in Europe and the US to invest in African countries
- In addition to the specific support for early stage tech funding economic research has shown that good-quality institutions are an important precondition for sustainable long-term GDP growth (Acemoglu and Robinson, 2012). While sub-Saharan Africa has on the whole become more stable over the last two decades the World Bank recently reported that policy and institutional quality in sub-Saharan Africa actually weakened in 2016.
- 40% of the countries saw a deterioration in their overall quality of policies and institutions. The World Bank also acknowledged a significant dispersion in policy and institutional quality within the region. Macroeconomic and political instability will deter potential investors and further exacerbate and funding gap.

CPIA scores of selected SSA countries



Notes: The Country Policy and Institutional Score (CPIA) rates countries on the basis of economic management, structural policies, policies for social inclusion and equity, and public sector management and institutions.

Source: World Bank

https://datacatalog.worldbank.org/dataset/country-policy-and-institutional-assessment

Background

This report supports ATBN's work on African tech ecosystems

Project

- This report forms part of a project carried out in 2017/18 by the Africa Technology Business Network (ATBN) with support from Innovate UK.
- The project focuses on investigating opportunities for accelerating collaboration between the UK and Africa tech ecosystems.

ATBN

- The Africa Technology Business Network (ATBN) is a London based social enterprise and global network committed to fostering sustainable and inclusive technology innovation in Africa.
- ATBN has three primary goals:
  - Support African digital start-ups and entrepreneurs to grow by connecting them with our global network.
  - Drive gender inclusion within the African digital ecosystem.
  - Lead initiatives to increase technology access and skills through collaboration with the UK.

www.africatbn.com

info@africatbn.com

@africatbn

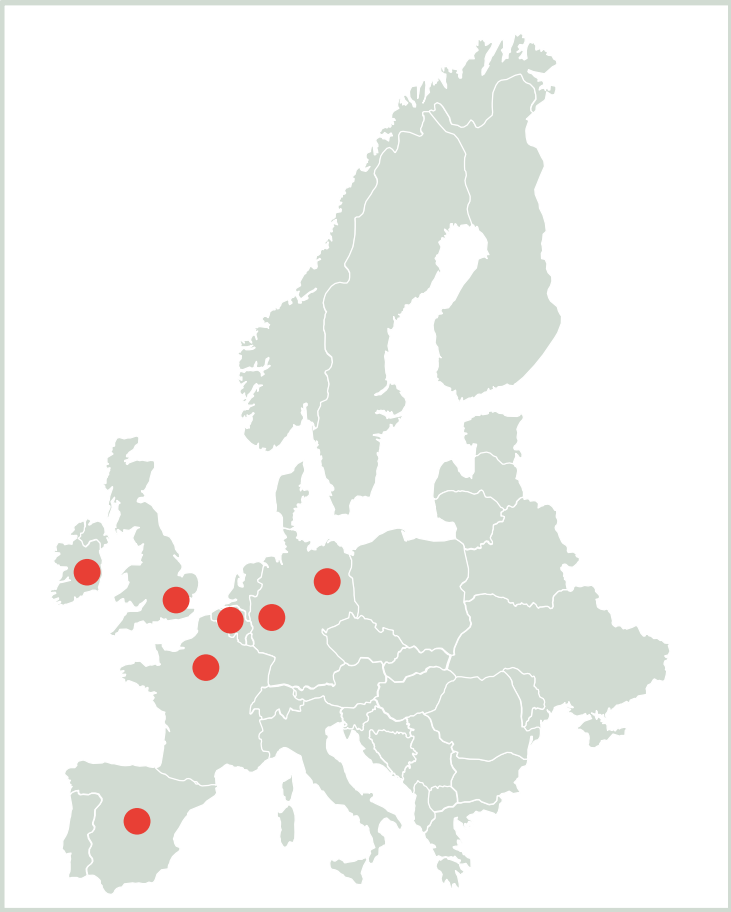
Background

Frontier is Europe's largest economics consultancy

Strategy | **Competition** | **Regulation** | **Public Policy**

- Energy
- Telecoms
- Transport & Water
- Financial services
- Retail
- Healthcare
- Media

- Frontier was established in 1999 and has 200+ economists across Berlin, Brussels, Cologne, Dublin, London, Madrid and Paris.
- Frontier is an economics consultancy that understands the intricacies and interrelationships between markets, organisations and government policies.
- We use economics expertise with in-depth industry knowledge to support our clients on some of the most interesting, topical and high-profile issues.
- The voluntary and charity sectors provide essential support for those most in need and often speak on behalf of their clients, raising policy issues and awareness. Through our pro bono work, we use our expertise to make a strong, positive contribution to charities. We work with them on a wide range of issues and add new partners every year.



References

Acemoglu, D. & J. Robinson (2012) Why Nations Fail: The Origins of Power, Prosperity, and Poverty. New York: Crown Publishers.

Global Impact Investing Network & Dalberg (2015) The Landscape for Impact Investing in West Africa: understanding the current status, trends, opportunities and challenges
https://thegiin.org/research/publication/westafricareport

GSMA (2018) Africa: a look at the 442 active tech hubs of the continent
https://www.gsma.com/mobilefordevelopment/programme/ecosystem-accelerator/africa-a-look-at-the-442-active-tech-hubs-of-the-continent/

I-Dev International (2016) #TIA: East Tech in Africa
https://idevinternational.com/en/sdm_downloads/tech-africa-tia-east/

IFC (2013) Closing the credit Gap for Formal and Informal Micro, Small and Medium Enterprises
https://www.ifc.org/wps/wcm/connect/4d6e6400416896c09494b79e78015671/Closing+the+Credit+Gap+Report-FinalLatest.pdf?MOD=AJPERES

OECD (2011) Financing High-Growth Firms: The role of angel investors
https://www.sbs.ox.ac.uk/sites/default/files/Entrepreneurship_Centre/Docs/financing-high-growth-firms-wilson.pdf

The Economist (2017) What technology can do for Africa

World Bank (2016 A) World development report: Digital Dividends
http://documents.worldbank.org/curated/en/896971468194972881/pdf/102725-PUB-Replacement-PUBLIC.pdf

World Bank (2016 B) The Importance of Mapping Tech Hubs in Africa, and beyond
http://blogs.worldbank.org/ic4d/importance-mapping-tech-hubs-africa-and-beyond

World Bank (2017 A) World Development Indicators: Sub-Saharan Africa
https://data.worldbank.org/region/sub-saharan-africa

World Bank (2017 B) CPIA Africa: Assessing Africa's Policies and Institutions
http://datatopics.worldbank.org/cpia/