



Africa Technology Ecosystem

2020

Africa's tech ecosystem growth story

African software developer population

- We estimate 700,000 software developers across Africa, primarily are concentrated in five countries: **South Africa, Nigeria, Kenya, Egypt, and Morocco**
- African coders use **multiple formal and informal education channels** to gain skills and access to well paying jobs
- The expanding ecosystem has created many **opportunities for female coders**, especially in the leading countries

Technology ecosystem

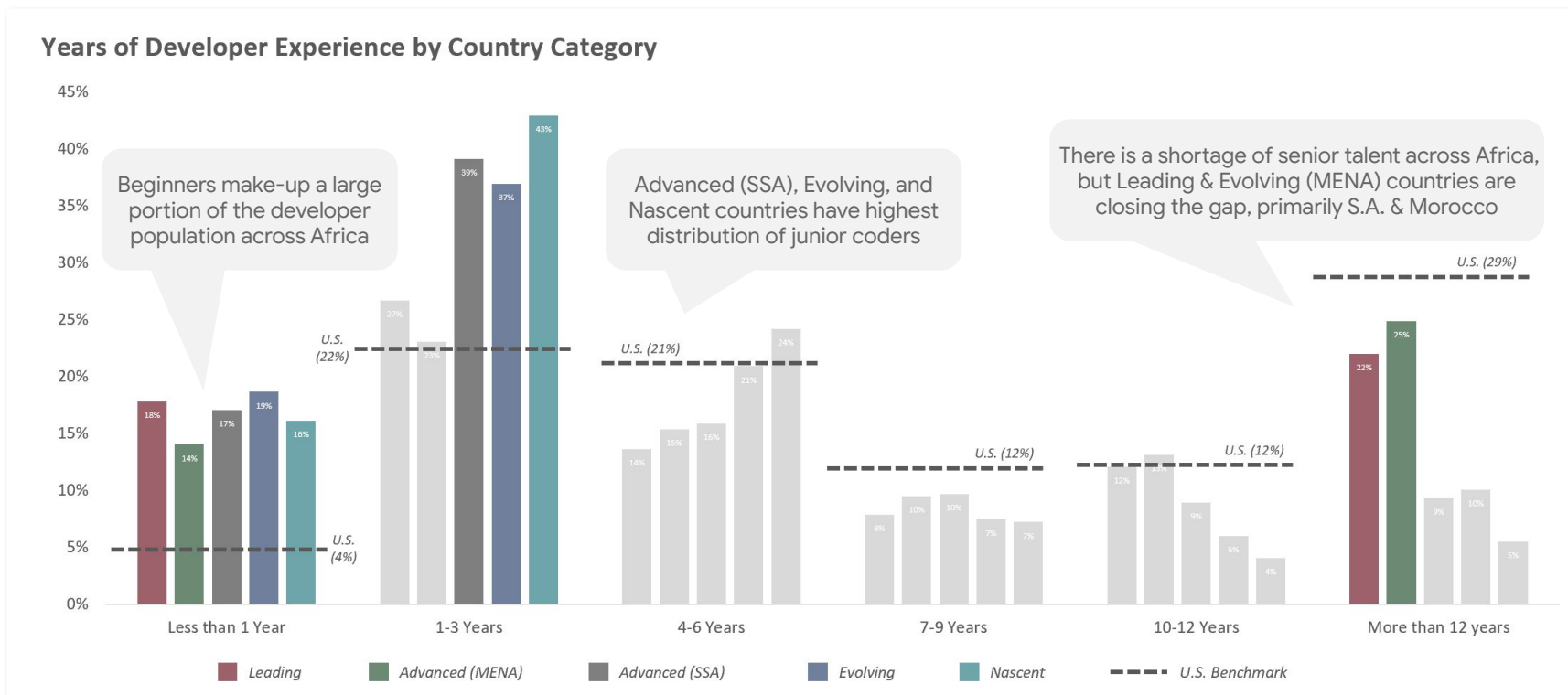
- **Funding remains a challenge in growth markets**, while investors have begun to fill the 'missing middle' in leading ecosystems
- **National governments are promoting growth** by building tech ecosystem-friendly environments, but cross-country cohesion is limited
- Entrepreneurs are building **innovative Africa-centric solutions for unique African consumer needs and challenges**

Nearly 700K developers across Africa, 50%+ located in top 5 countries

Category	Country	Professional Developers	% Total of Africa
<i>Leading</i>	South Africa	120K	17%
<i>Advanced (MENA)</i>	Egypt	85K	12%
	Morocco	45K	7%
<i>Advanced (SSA)</i>	Nigeria	85K	12%
	Kenya	60K	9%
<i>Evolving</i>	Ghana	15K	2%
	Rwanda	5K	1%
<i>Nascent</i>	Ethiopia	20K	3%
	Tanzania	15K	2%
	Uganda	10K	1%
	Ivory Coast	10K	1%
<i>N/A</i>	Rest of Africa	220K	32%
AFRICA TOTAL		690K	100%

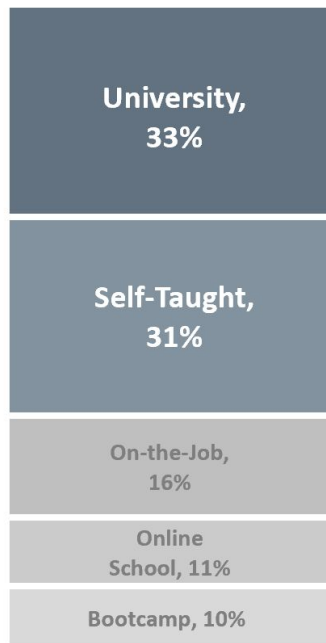


The African developer population skews very young vs. mature markets



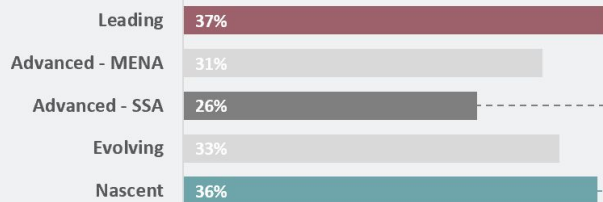
University programs and self-learning are primary forms of developer education

Developers by Education



Education Deep Dive

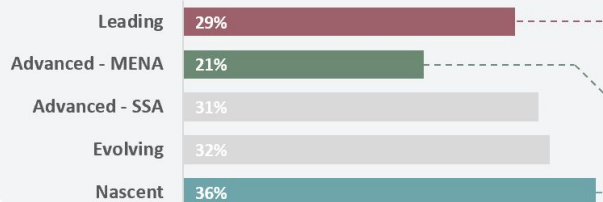
University Education by Country Type



Key Drivers

- World-Class Universities:** High-quality universities in South Africa attract developers
- Informal Alternatives:** Kenyan & Nigerians leverage more bootcamps & online schools
- Lack of Options:** Coders in Uganda generally choose between formal education & self-learning

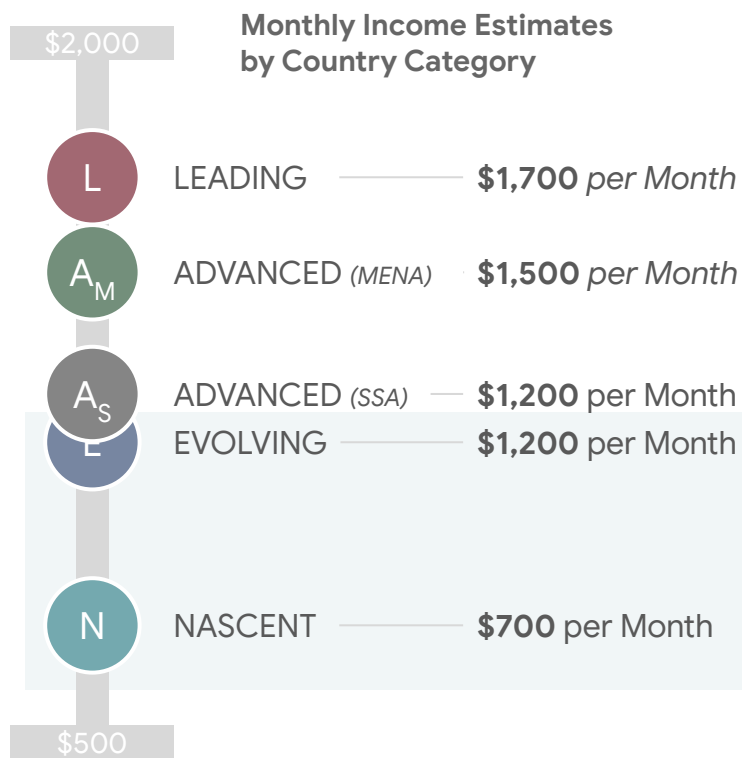
Self-Taught by Country Type



- Accessibility for All:** Free self-learning in South Africa provides education to the underprivileged
- Enterprise Employment:** Large enterprise employers provide on-the-job training in Morocco
- Global Expertise:** World-class content is available online when local educators cannot provide it

■ Leading
 ■ Advanced (MENA)
 ■ Advanced (SSA)
 ■ Evolving
 ■ Nascent

Coders view software development as an avenue for social mobility



Attitudinal Indicators

73% Need to **work multiple jobs** as a coder to make enough money

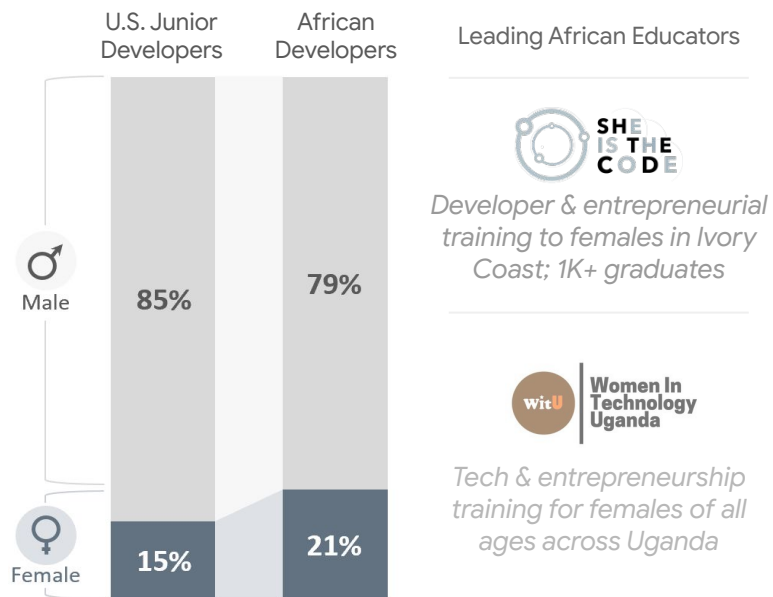
54% Believe **software development provides better opportunities** than other professions in their home country

52% Learned to code (or hope to learn) for the **opportunity to move to another country** for work

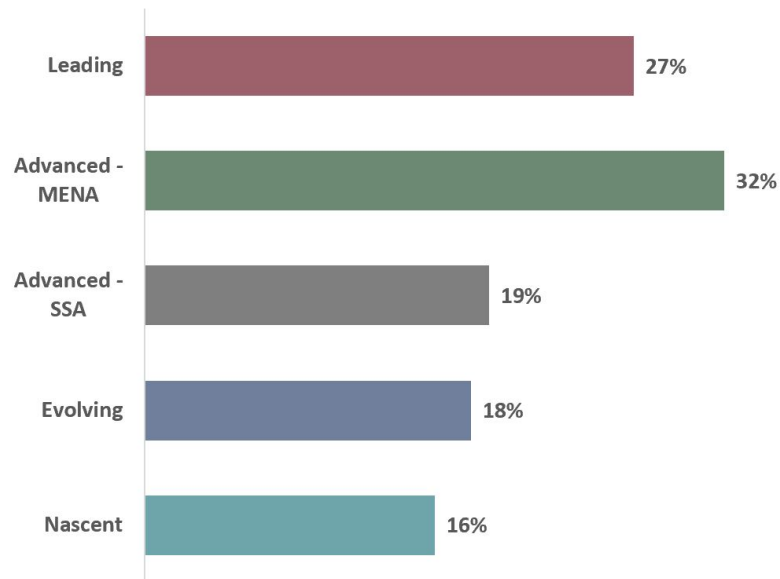
ZA, NG, KY Selected by coders as countries **providing the best job opportunities** for developers

Female coders gaining real traction in leading and advanced countries

African and U.S. Developer Gender Distribution



Developer Gender Distribution by Country Category



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Technology ecosystem

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An extensive approach to identify and capture ecosystem players

Data Sources

Startup Databases
 Pitchbook, Digest Africa, VC4A, Crunchbase, ACN Internal

Venture Reports
 WeeTracker, Disrupt Africa, Partech

Company/News Reports
 OCC Strategy, TechCrunch, VC4A

Expert Interviews
 Investors, Entrepreneurs, Educators, Enablers

Innovators

A screenshot of a data table with multiple columns and rows, representing a list of startups. The table is organized into several sections, likely corresponding to different markets or categories.

2,265 startups; includes funding information, founder demographics, industries / verticals of focus, and other info.

Investors

A screenshot of a data table with multiple columns and rows, representing a list of investors. The table is organized into several sections, likely corresponding to different markets or categories.

605 investors funding startups across the 11 markets; includes investor type, industries / verticals of focus, stage of focus, and other info.

Enablers

A screenshot of a data table with multiple columns and rows, representing a list of enablers. The table is organized into several sections, likely corresponding to different markets or categories.

289 accelerators, incubators and hubs; includes government / university affiliation, cohort sizes, industries / verticals of focus, and other info.

Educators

A screenshot of a data table with multiple columns and rows, representing a list of educators. The table is organized into several sections, likely corresponding to different markets or categories.

512 coding bootcamps, online schools and universities teaching coding skills; includes public vs private, and employer relationships / sponsors for bootcamps.

Top Startups

JUMIA

OPay

JUMO

Twiga

cellulant

Kobo

copia

mPharma

Flutterwave

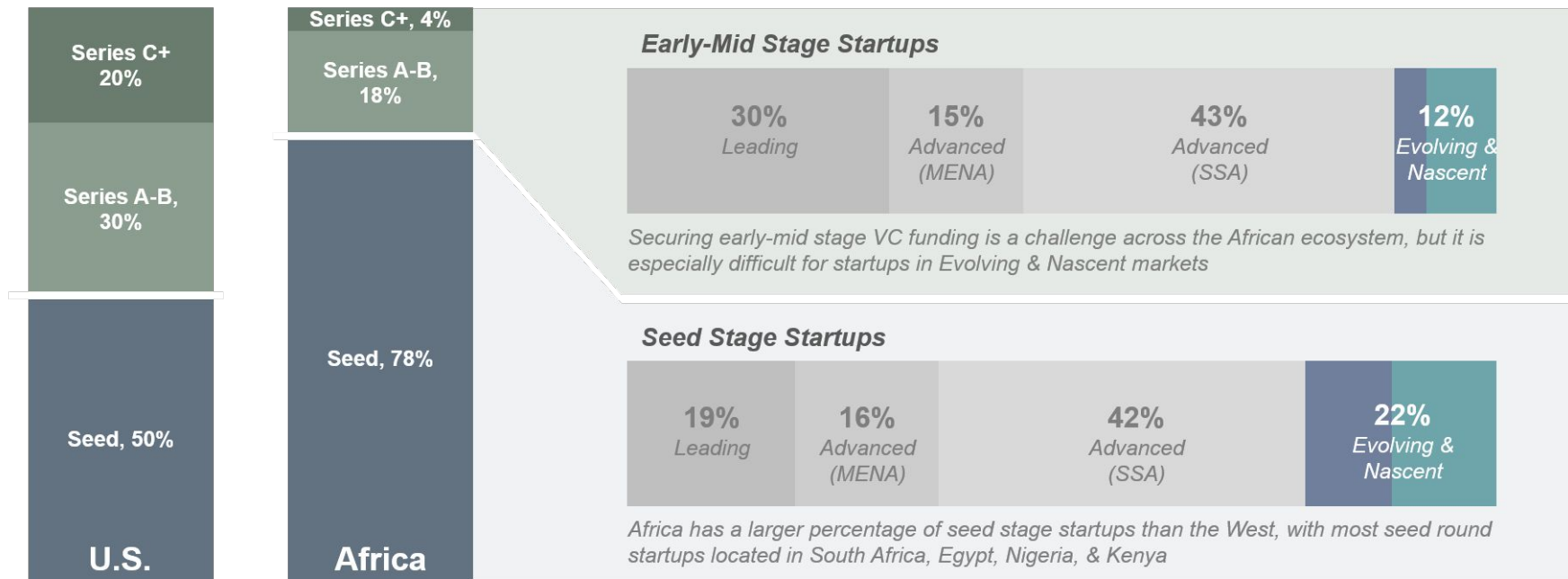
kountable

carepay

Securing growth capital remains a challenge, especially in less mature markets

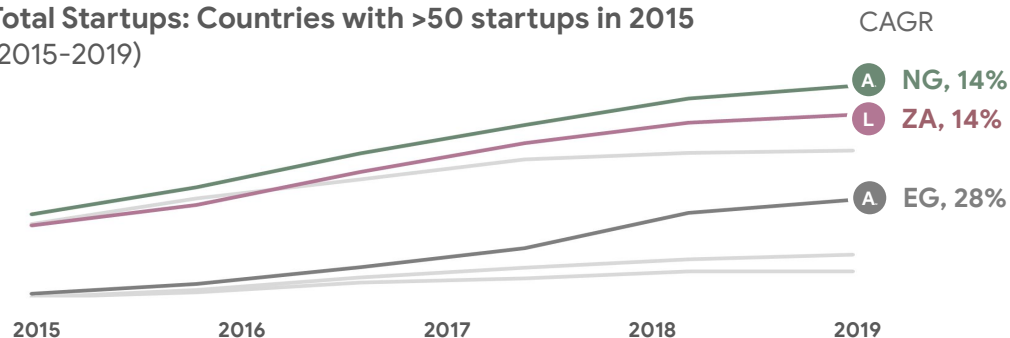
U.S. & African Startups by Stage

Startup Share by Country Category



Governments accelerate growth of startup ecosystem through targeted initiatives

Total Startups: Countries with >50 startups in 2015
(2015-2019)



Finance Act 2020: Reduces or eliminates income taxes for startups

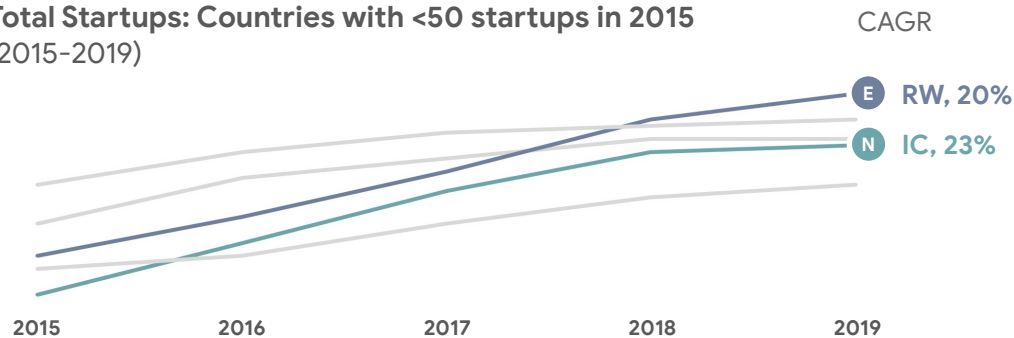


Program 12J: Provides tax deductions for VCs investors that fund domestic startups



FinTech Cairo: Supports FinTech ecosystem with largest FinTech accelerator in the world

Total Startups: Countries with <50 startups in 2015
(2015-2019)

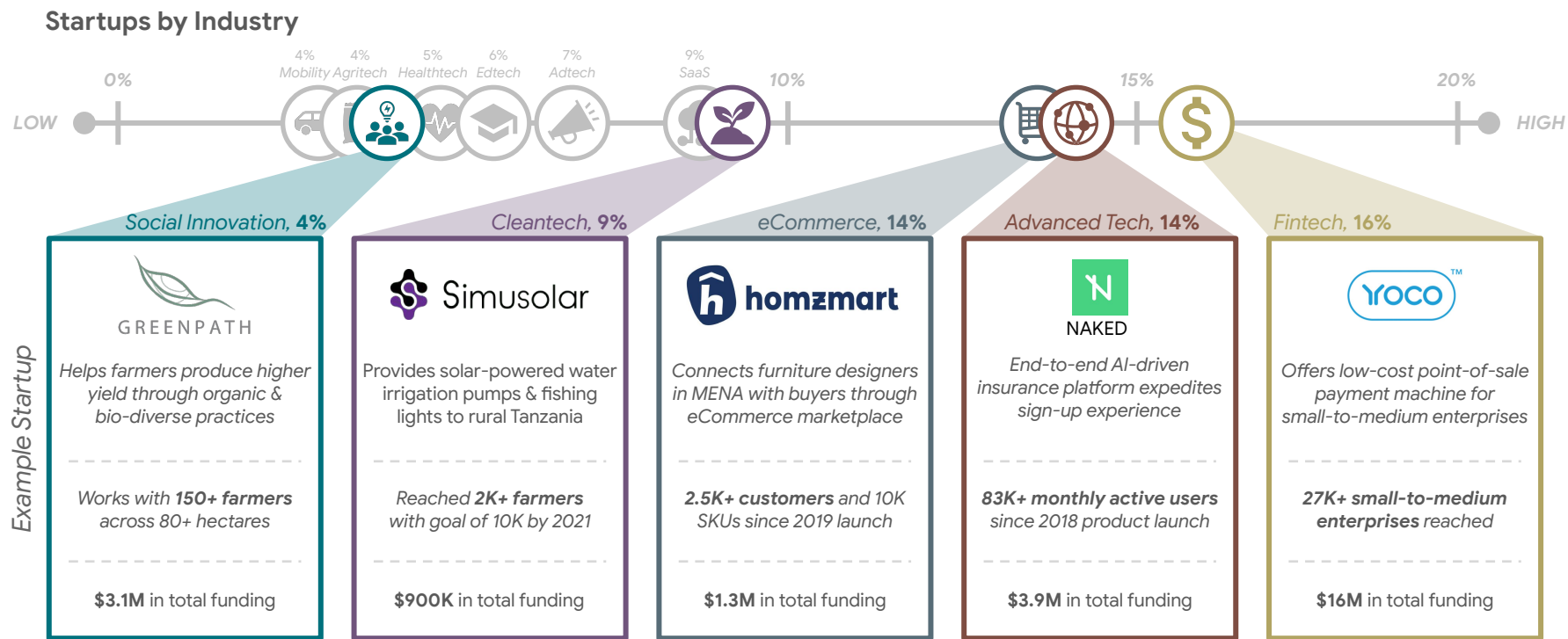


Private-Public Partnership: Partners with Carnegie Mellon to provide world-class ICT education through local campus

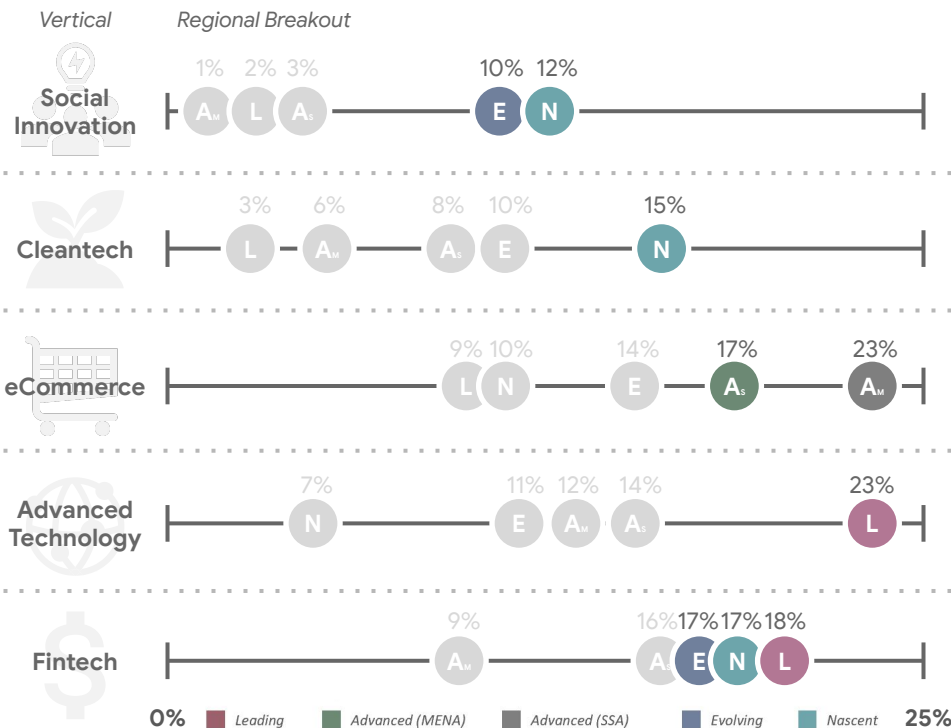


State-Mandated Technology Training: Educates young coders as part of a government-sponsored training program

African startups are building solutions for local African challenges



Nascent and evolving markets solve for immediate local challenges, while mature markets expand focus to globally-relevant advanced technologies



Key Takeaways

Social Innovation startups have seen an average of **20% YoY growth** in **Nascent and Evolving** markets since 2010

Cleantech represents **15% of Nascent** startup ecosystems and only **3% of Leading** ecosystems

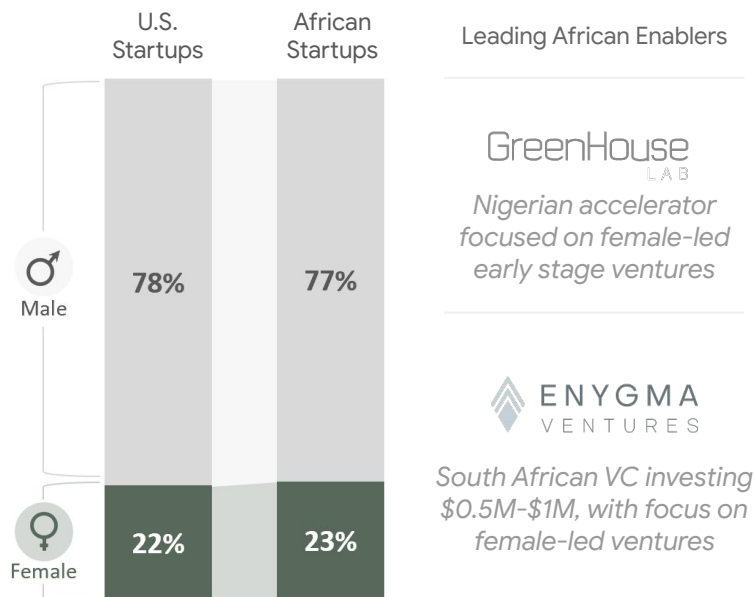
eCommerce in MENA growing rapidly, with Egypt expected to **grow 33% YoY to \$3B** by 2022

Industry-agnostic advanced technology startups (e.g., AI, Robotics) represent **23% of Leading** ecosystems and **7% of Nascent** ecosystems

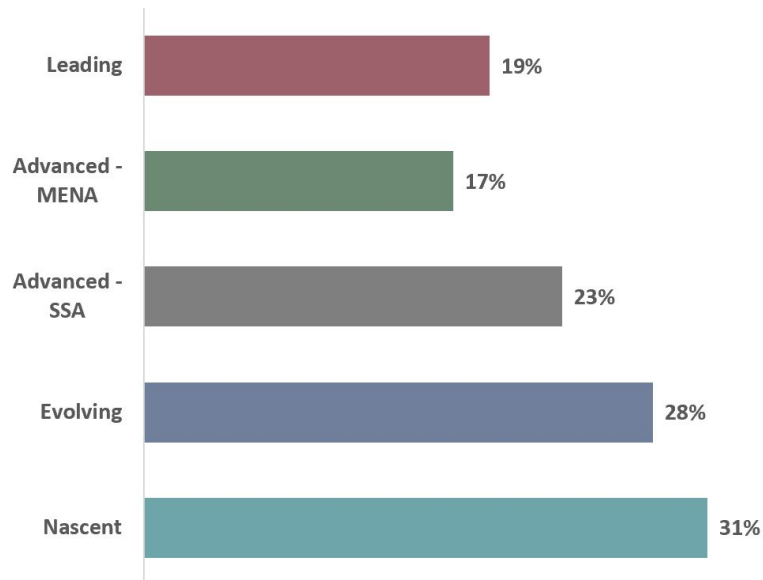
Fintech drives **growth across all Sub-Saharan ecosystems** with companies like Cellulant, WalletsAfrica, & Jumo leading the charge

Representation of female entrepreneurs is comparable to the West

African and U.S. Startup Founder Gender Distribution

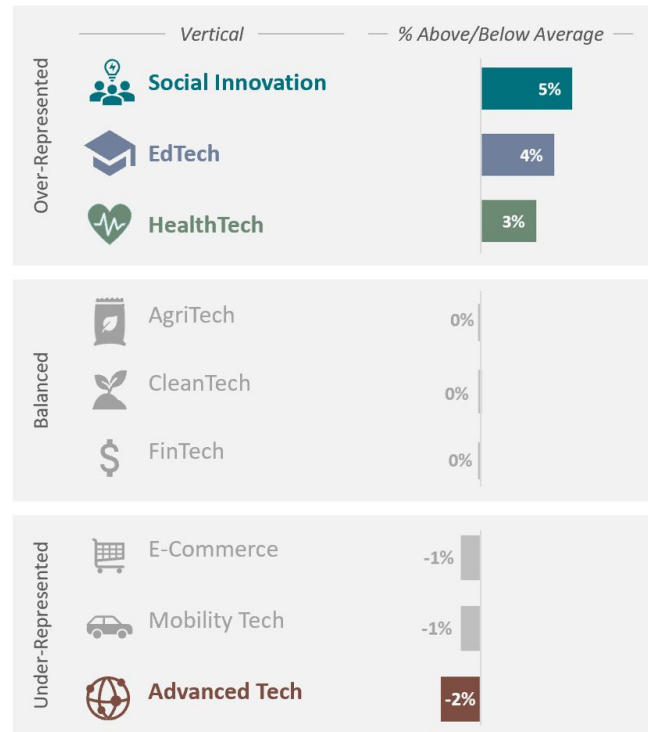


Startup Founder Gender Distribution by Country Category



Female entrepreneurs focus more on Social Innovation, EdTech, & Healthtech

Over/Under Representation of Female Founders by Vertical



Notable Examples

Social Innovation

Provides technology tools for vulnerable communities to reduce theft & improve police response times

Founded by an **all-female team** | **Won \$250K** in Google Impact Challenge

EdTech

Provides a game-based educational platform for mobile devices to improve literacy rates in Africa

50% of the founding team is female | **\$2.5M** raised in Seed funding

HealthTech

Provides advanced genetics testing and personalized nutritional education to help people lead healthier, more productive lives





50% of the founding team is female | **\$2.5M** raised in Series A funding

Advanced Tech

Provides AI solutions, such as data insights and pattern recognition for enterprises

50% of the founding team is female | **\$7M** raised in Series A funding

Multiple opportunities to support the African ecosystem

Focus Area	Identified challenge	Opportunity to address
 Talent Development	Large population of young and inexperienced coders require upskilling and education opportunities to boost capabilities	<ul style="list-style-type: none">• Increase development of free, online resources and certification programs• Partnerships with local universities to add rigor to curriculum
 Growth Funding	Nascent and evolving African startups struggle to attract late-stage growth investments	<ul style="list-style-type: none">• Greater VC attention towards Rwanda, Ghana, Uganda, Tanzania, Ivory Coast, Ethiopia
 Cross-Border Dynamics	Inconsistent levels of national and cross-border collaboration with tech ecosystems	<ul style="list-style-type: none">• Greater cross-border coordination with local governments to drive Africa-wide growth
 COVID-19	Expected decrease in VC funding deployed to Africa	<ul style="list-style-type: none">• Partnership and funding for public health startups addressing COVID-19• Opportunity to reach more students via online course materials