Innovative Credit Models In Africa

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FSD Africa is a specialist development agency working to reduce poverty by strengthening financial markets across sub-Saharan Africa. Based in Nairobi, FSD Africa's team of financial sector experts work alongside governments, business leaders, regulators and policy makers to design and build ambitious programmes that make financial markets work better for everyone. Established in 2012, FSD Africa is incorporated as a non-profit company limited by guarantee in Kenya. It is funded by UK aid from the UK government.

Intellecap is a pioneer in providing innovative business solutions that help, build and scale profitable and sustainable enterprises dedicated to social and environmental change. It is part of the Aavishkaar Group which has over $1 billion in assets under management and have over 15 years of experience in providing on-the-ground business consulting and thought leadership across diverse sectors such as financial services, energy, agriculture, etc., with offices in Kenya, India and US. Our Financial Services (FS) advisory practice works with finance companies, micro-finance institutions (MFIs), development finance institutions (DFIs) and fintechs to advise and assist them across areas of business strategy, digital financial services (DFS) research, business transformation, digital financial Inclusion, credit analytics and business process re-engineering.

DISCLAIMER

The findings and conclusions contained in the report are those of the authors, and not of FSD Africa. The findings present an aggregated view of each innovation – represented by the research sample (based on secondary research and data collected from a sample of innovators) and are not linked to any specific innovator unless explicitly mentioned. Any unsourced data point in the report is based on the researchers' analysis from primary and secondary data collected.

In this report, East Africa refers to the three focus countries in the region; Kenya, Tanzania and Rwanda.

LIST OF ACRONYMS

ACGSF	Agricultural Credit Guarantee Scheme Fund
ACSS	Agricultural Credit Support Scheme
AFF	Agriculture, Forestry and Fishing
AOI	Agriculture Orientation Index
API	Application Programming Interface
APR	Annual Percentage Rate
CACS	Commercial Agricultural Credit Scheme
CBA	Commercial Bank of Africa
CBK	Central Bank of Kenya
CBN	Central Bank of Nigeria
CGAP	Consultative Group to Assist the Poor
CRB	Credit Reference Bureau
CRM	Customer Relationship Management
DAFF South Africa	Department of Agriculture, Forestry and Fisheries, South Africa
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortization
EFL	Entrepreneurial Finance Lab
FAO	Food and Agriculture Organization
FMARD Nigeria	Federal Ministry of Agriculture and Rural Development, Nigeria
FSD Africa	Financial Sector Deepening Africa
FSP	Financial Service Providers
GDP	Gross Domestic Product
GFSI	Global Food Security Index
GNI	Gross National Income
GOGLA	Global Off-Grid Lighting Association
GPS	Global Positioning System
GSMA	Global System for Mobile communication Association
IFC	International Finance Corporation
IFPRI	International Food Policy Research Institute
IMF	International Monetary Fund
IoT	Internet of Things
KCB	Kenya Commercial Bank
KYC	Know Your Customer
LDR	Loan-to-Deposit Ratio
LEAP	Lending for Education in Africa Partnership
LPG	Liquefied Petroleum Gas
LTV Ratio	Loan-to-value Ratio
MFI	Microfinance Institution
MNO	Mobile Network Operator
MSME	Micro, Small and Medium Enterprises
NIMs	Net Interest Margins
NPL	Non-Performing Loans
OEM	Original Equipment Manufacturer
P2P	Peer-to-Peer
PAYG	Pay As You Go
PoS	Point of Sale
PPP	Purchasing Power Parity
ROA	Return on Assets
SME	Small and Medium Enterprises
SMS	Short Message Service
SSA	Sub Saharan Africa
STK	Sim Tool Kit
UNDP	United Nations Development Programme
USP	Unique Selling Proposition
USSD	Unstructured Supplementary Service Data
WRF	Warehouse Receipt Finance

EXECUTIVE SUMMARY

While sub-Saharan Africa (SSA) undergoes a digital metamorphosis to financial inclusion, credit access remains low.

Domestic credit provided by the financial sector in SSA stood at 39% of gross domestic product (GDP), and grew by 4% between 2015 and 2018. This is relatively low compared to South Asia which stood at 69% in the same year.[1] The region continues to face a myriad of challenges across the spectrum of the lending value chain, which affect credit access. These include low-income levels, poor infrastructure, weak policy and a high cost of credit. The sector is characterised by high non-performing loans (NPLs) - above 10% in several countries, and low returns on assets (ROAs) - below 2% in many countries[2].

The key challenges to the credit sector cut across the lending value chain.

01

Customer segments and products

- Income and cash flow seasonality
- Lump sum disbursement
- Low supply chain finance penetration
- Lack of focus on micro retailers
- Ineffective cross-sell
- Low financial literacy
- Low product customization

02

Credit/risk management

- Unforeseen external risk
- Underdeveloped warehouse receipt finance
- Low capacity for valuation, hypothecation and re-possessions
- Non-risk based pricing/high interest rates
- Lack of/low quality of collateral
- Lack of income documentation
- Recent and few credit bureaus
- Poor customer contactabilty
- Untested alternate data scorecards
- Lack of end use tracking

03

Distribution and process

- Low branch productivity
- Costly digital acquisition
- Difficulties in banking correspondent (BC)/ agent channel implementation
- High turnaround time

04

Technology

- Low application programming interface (API) integration
- Data security and privacy difficulties
- Difficulties in transforming legacy systems

05

Funding

- High cost of funds
- Limited access to funding

06

Ecosystem

- Underdeveloped fintech regulations
- Limited Original Equipment Manufacturer (OEM) partnerships

Innovative digital technologies and business models are emerging in an attempt to solve credit access challenges.

The research identified over 30 credit innovations that leverage technology, multiple data sources, and partnerships to enhance access and delivery of financial services to underserved segments across the globe. Sixty-seven percent of these innovations and over 186 innovators are operational in the research focus countries, which include South Africa, Nigeria, Kenya, Tanzania and Rwanda. South Africa leads the other countries in both the number of innovations and established innovators. Seven of the identified innovations operational in the focus countries are discussed in detail in this report. These innovations were selected based on the quantum of challenges they are solving, and both their demonstrated and potential impact.

[1] World Bank, 2017-18. Domestic credit to private sector (% of GDP)
[2] IMF Financial Sector Indicators 2018

CONTEXT AND OBJECTIVE OF THE STUDY

FSD Africa aims to contribute to a greater understanding of factors that inhibit growth of credit markets in SSA.

The insights generated through the commissioned research are intended to highlight market opportunities and challenges, and will be of value to policy makers, regulators, credit providers, financial sector analysts, as well as others interested in supporting credit market growth in the region.

FSD Africa engaged Intellecap to undertake research on market innovations in retail credit markets.

The key objective was to assess innovative models emerging in selected countries (South Africa, Nigeria, Kenya, Tanzania and Rwanda) and identify the critical factors for success. South Africa, Nigeria and Kenya were selected as they are leaders in number of startups while Tanzania and Rwanda were considered given the increasing level of innovation in the countries. Overall, the countries present a holistic picture of financial inclusion development and challenges across SSA.

APPROACH AND METHODOLOGY

Based on a three-step process, the research identified seven key innovations that have the potential to contribute to addressing credit access gaps in a meaningful manner.

The first step was to identify a long-list of credit innovations across the globe that leverage technology, alternate data, and partnerships to enhance access and delivery of financial services. This led to the building of a list of 32 innovations. The second step was to identify the list of critical credit challenges across the research focus countries and map the challenges to the innovation. Top 10 innovations were shortlisted based on the quantum and severity of the challenges they are solving. The third step involved identifying the level of innovation across the top 10 innovations and shortlisting the seven innovations for detailed study. The detailed innovation shortlisting approach is highlighted in Annex 3.

The assessment sought to determine the feasibility, scalability and sustainability of these innovations.

The innovations identified include telco-based lenders, edufintech (digital education finance), pay as you go (PAYG), invoicetechs, scoretechs, lending aggregators and peer to peer lenders.

The research used secondary research, telephonic and one-on-one stakeholder interviews to generate crucial insights.

The secondary research identified existing innovations and innovators globally and in the focus countries. Fifty-seven stakeholder interviews were conducted, including with fintechs, banks, micro finance institutions (MFIs), investors and ecosystem enablers.

PROMISING CREDIT INNOVATIONS

Scoretechs (credit scoring platforms) enable lenders to assess credit risk better.

Scoretechs leverage data such as mobile wallet transactions, social media activities, consumer financial behavior, and psychometrics to underwrite customers who lack income documentation and banking history. Scoretechs have a sound business model with a fee-based revenue structure, driven by strong recurrence and customer lifetime value. However, the resilience of the scorecards has not yet been tested against extended economic cycles, which may impact their sustainability in the long run. A total of 20 innovators were identified across the research focus countries, nine operating in South Africa, six in Nigeria, five in Kenya, three in Tanzania and two in Rwanda[3]. Some key players include Social Lender, FarmDrive, CreditInfo and JUMO.

Invoicetechs (digital invoice trading) are platforms that address working capital needs of small and medium enterprises (SMEs) by providing immediate credit against outstanding invoices.

These platforms help overcome challenges hindering SME finance, such as limited credit history and poor financial documentation, by leveraging the invoice as an indicator of receivable income. The wide SME financing gap and repetitive nature of the business make it a highly feasible innovation. Seventeen innovators are already operational in the focus countries, six operating in South Africa, six in Kenya, three in Nigeria, two in Rwanda and one in Tanzania[4]. These include Kountable, FACTs, InvoiceWorx and efactor.

Lending aggregators provide a one-stop shop where customers can compare loans from various banks and MFIs, lowering the search costs for both borrowers and lenders.

The platforms offer single point flexibility to view, compare, choose and apply for loans offered across multiple service providers. The aggregators also deliver advice on the products and services being offered. However, the low fees generated, high-cost structures and dependence on lenders for financing successful leads hinders the feasibility of this innovation. Nonetheless, feasibility can be enhanced through adoption of hybrid customer acquisition strategies that reduce cost and diversification of revenue sources. Four aggregators, mainly based in South Africa were identified: Fincheck, Finfind, fundingHub and StartCredits.

Telco-based lenders are a unique partnership that integrates bank and mobile network operators (MNO) capabilities to addresses challenges in underwriting individuals and micro businesses for improved credit access.

This is the leading innovation within East Africa in particular. It utilizes data generated from mobile wallet transactions, unstructured supplementary service data (USSD) and sim tool kit for loan applications, and mobile money agents to facilitate disbursement and repayments. High annual percentage rates (APRs), low cost of customer acquisition and high customer lifetime value contribute to high profitability and the overall feasibility of the model. There were seven innovators identified, mainly operating in Kenya. Commercial Bank of Africa (CBA) dominates telco-based lending having established partnerships with MNOs in four countries including Kenya, Tanzania, Rwanda and Uganda.

[3]The sum of innovators across countries is more than 20 since some innovators operate across several countries but are accounted as one in the total. This applies for all innovations

[4]The sum of innovators across countries is more than 17 since some innovators operate across several countries but are accounted as one in the total. This applies for all innovations..

PROMISING CREDIT INNOVATIONS

Pay as you go (PAYG) model enables the financing of assets by leveraging them as collateral.

PAYG eliminates the need for additional collateral and enables flexibility in asset ownership. It leverages the internet of things (IoT) technology to enhance ownership of consumer goods by reducing the upfront cost burden and allowing customers to pay only for usage, over a stipulated time and frequency. At the same time, the IoT technology enables the innovator to control asset usage in case of non-repayment. The leading use case of this model has been in energy, which has shown low profitability and feasibility due to high NPLs caused by the income fluctuation of the target customers. However, PAYG presents potential for financing productive assets which can potentially enhance income generation and consequently timely repayment. A total of 19 innovators were identified across the focus countries, over 90% of whom are solar based.

Peer to peer platforms eliminate geographical barriers and connect lenders with borrowers that meet their portfolio requirements.

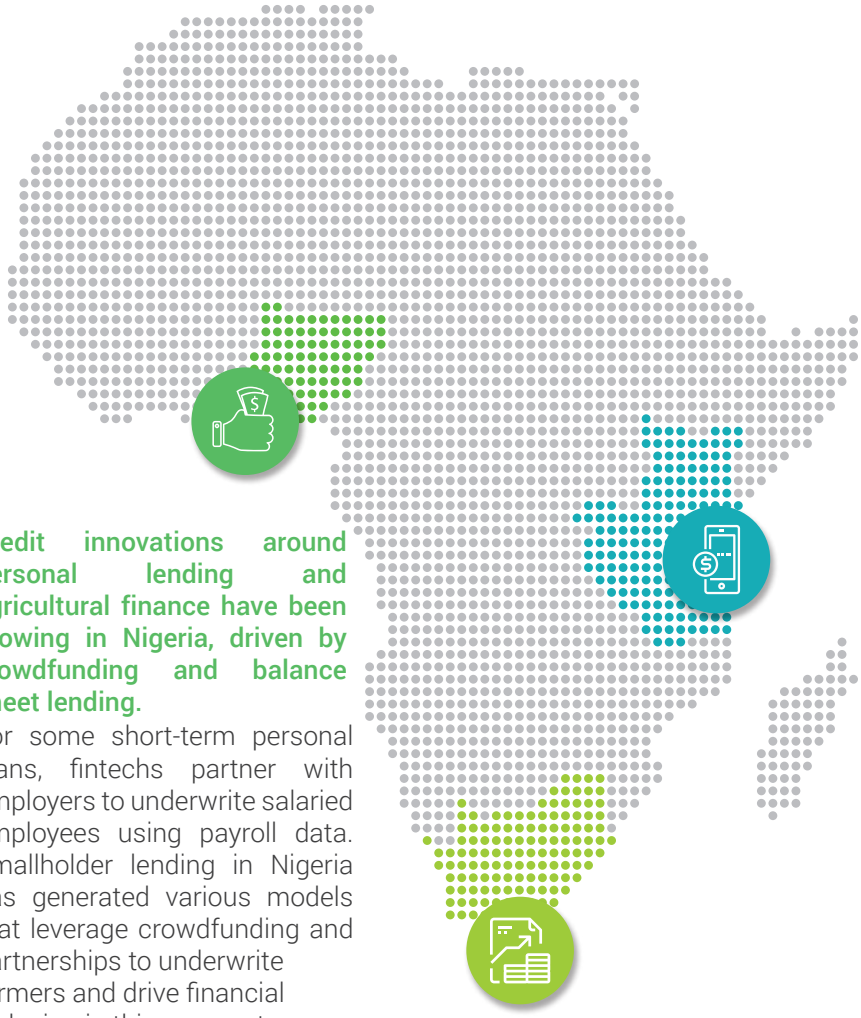
These are digital marketplaces that can facilitate the provision of digital credit (and other financial services) by matching borrowers and lenders. Within the research focus countries, it was found that peer to peer platforms struggle with a high cost of digital marketing for acquisition. The hybrid model of P2P lending, wherein the platform partially owns the risk of loan defaults, offers a unique approach to elevate investor confidence and generate higher revenues through an improved commission structure. 16 P2P platforms were identified across the focus countries; 7 operating in Kenya, 5 in South Africa, 3 in Nigeria, one in Tanzania and none in Rwanda.

Edufintech (digital education platforms) leverage students' and parents' data to assess credit worthiness in financing student needs.

Edufintech seeks to address challenges in underwriting and the lack of credit customised for the purpose of funding education. Students' data that is evaluated includes exam scores, class attendance, type of courses and future earning potential, while needs that are financed include tuition fees, accommodation, travel and laptops. The innovation enables long-term financing tenors with flexible repayment terms. Despite the huge market gap, innovators are almost non-existent in the focus countries due to overall profitability challenges facing the model. Nevertheless, a number of global success cases such as Prodigy Finance, SoFi and Common Bond exist in education finance and the need for education financing every semester generates continuous business for the lenders, thereby driving sustainability.

ENHANCING CREDIT ACCESS - KEY IMPLICATIONS

Key differences in innovations across the focus countries



Credit innovations around personal lending and agricultural finance have been growing in Nigeria, driven by crowdfunding and balance sheet lending.

For some short-term personal loans, fintechs partner with employers to underwrite salaried employees using payroll data. Smallholder lending in Nigeria has generated various models that leverage crowdfunding and partnerships to underwrite farmers and drive financial inclusion in this segment.

East Africa has a number of lending innovations spurred by a vibrant mobile money ecosystem, including telco-based lending arising from partnerships between banks and MNOs.

Mobile money innovation has been a key driver of financial inclusion in the region. In addition to telco-based lending, other credit innovations have sprung up, such as app-based nano lending[5], P2P lending and crowdfunding platforms across the three countries. MSME lending innovations are also slowly growing, particularly invoice factoring.

South Africa has an advanced fintech ecosystem, which, supported by a number of hubs, accelerators and co-working spaces, drives credit innovation.

Its most significant credit innovation is in micro small and medium enterprises (MSME) financing, with innovations such as invoicetechs, digital business loans, digital marketplaces and merchant cash lenders. In addition, South Africa has lending aggregators and digital banks, which are non-existent in the other research focus countries.

[5]These are platforms that leverage alternate data like social media data and activities, mobile wallet transaction data, to undertake credit assessment and determine loan limits. They lend from their own balance sheet and offer loans ranging from USD 2 - USD 700

Social value of innovations

Innovations that generate borrower data, reduce transaction costs and encourage repayment all address factors that contribute to a high cost of credit.

Most innovators, however, are trying to serve "riskier segments"[6] and are still testing their scorecards and hence are unable to bring down the lending rates. Although digital lenders are like Tala and Branch leverage technology to lower operational costs, they face external and internal challenges like high cost of capital and high NPLs, and consequently charge high interest rates (up to 15% per month) to cover themselves against loss. Innovations that, for example, provide access to cheaper capital for the lenders, can help address these challenges. However, whereas telco based lenders like KCB M-Pesa and M-Shwari are able to leverage bank partnerships to access funds at a much lower rate, they too have been unable to lower interest rates.

Telco based lending has been a successful innovation in increasing household access to credit.

The number of digital loans in Kenya for example doubled between 2016 and 2018 and represented 86% of total loans taken up in the country[7] . However, research suggests it is resulting in increased indebtedness, with 35% of digital borrowers[8] reported to be borrowing from multiple lenders. The widespread penetration of mobile money and easy access to mobile loans has played a big role in its success, with over 30 million[9] people subscribed for telco-based loan products across East Africa.

Key innovations are expected to further increase financing to the agricultural sector and SMEs.

Approximately 37%[10] of telco-based customers in Kenya borrow to finance their businesses. In addition, about 26% are based in rural areas[11]. This is expected to increase further as innovators such as Scoretechs continue to evolve their algorithms for financing the agriculture segment, PAYG move into financing of agricultural equipment like tractors and irrigation pumps, and invoicetechs offer quicker access to working capital financing.

Opportunity and way forward

To address credit market challenges more effectively, innovators may need to revisit their business model's feasibility and sustainability.

Despite the value propositions presented, they face various challenges relating to cost and revenue structures, as well as funding sources. A few solutions could be partnerships with traditional credit providers, leveraging emerging technologies, adopting hybrid customer acquisition models and diversification into new customer segments.

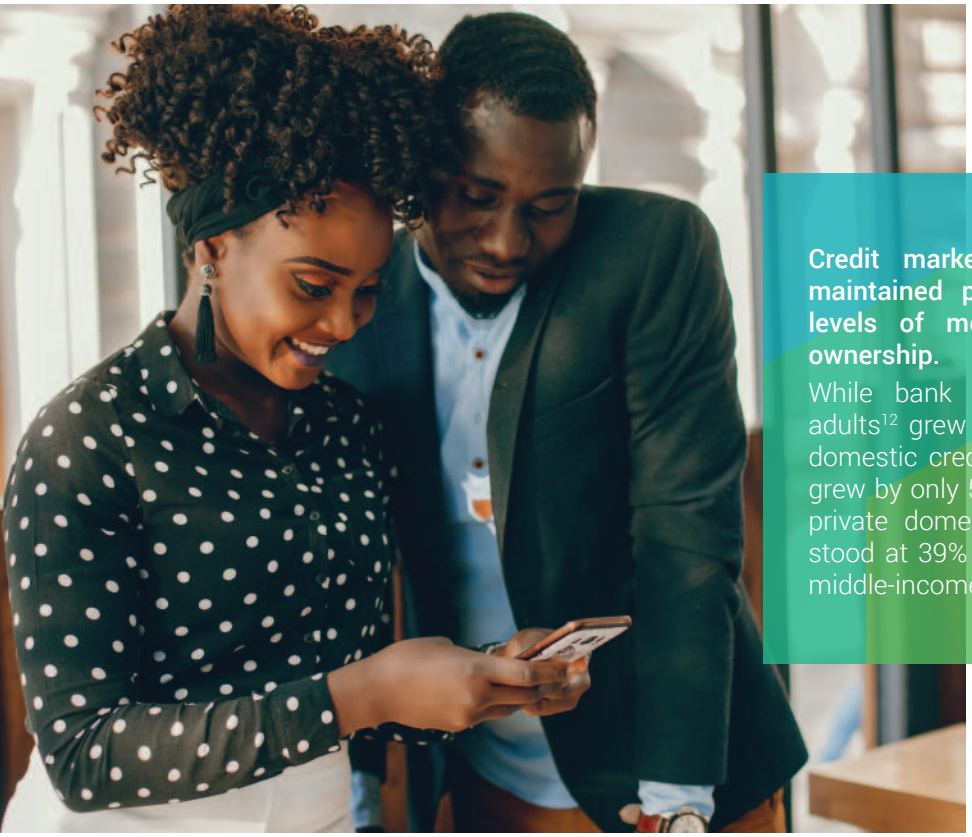
Putting in place a more supportive ecosystem is necessary to enhance feasibility, scalability and sustainability of credit innovations.

Various areas of support were identified across the models reviewed, which will require deliberate efforts from governments, development institutions and other market players. These include building human resource capabilities, grant provision, patient capital and investment loss guarantees – as well as the development of enabling regulatory frameworks, a push for adoption of open APIs and promotion of more responsible practices among credit providers.

[6]Consumers with no collateral, credit or banking history
[7]Microsave Consulting: Making digital credit truly responsible, 2019
[8]FSD Kenya - The Digital Credit Evolution in Kenya: An assessment of the market demand, 2018
[9]Intellecap analysis
[10]FSD Kenya - The Digital Credit Evolution in Kenya: An assessment of the market demand, 2018
[11]FSD Kenya - The Digital Credit Evolution in Kenya: An assessment of the market demand, 2018

CHAPTER 1: OVERVIEW OF CREDIT MARKETS AND MAPPING OF INNOVATIONS

Overview of credit markets in research focus countries



Credit market penetration in SSA has not maintained pace with the region's improving levels of mobile money and bank account ownership.

While bank account ownership among older adults[12] grew from 28% in 2014 to 33% in 2017, domestic credit provided by financial institutions grew by only 5% over the same period[13]. In 2018, private domestic credit by the financial sector stood at 39% of GDP - less than half the level of middle-income economies[14].

Table 1: Selected credit market indicators across focus countries, 2017

	SA	NG	KE	TZ	RW
Loans & Advances (USD Bn)	231	44	25	7	1.5
Lending 3 Years CAGR (%)	6%	7%	9%	8%	17%
Advances to GDP	181%	23%	40%	20%	19%
Advances per branch (USD Bn)	56	8	16	8	3
Assets per capita (USD)	6,710	501	753	227	284
Non Performing Assets (NPA)	4%	15%	14%	10%	7%
Loan to Deposit Ratio (LDR)	139%	82%	85%	71%	90%
Return on Asset (RoA)	1.6%	1.8%	3.5%	2/0%	2.8%
Return on Equity (RoE)	20%	21%	24%	13%	16%

Note: Banking sector data used to represent the credit market. Source: World Bank, IMF Financial Access Survey 2018 data, IMF financial sector indicators, respective countries' central banks and Intellecap analysis

[12]Age 25 and above, World Bank Findex
[13]World Bank Findex, 2017
[14]World Bank, 2017-18. Domestic credit to private sector (% of GDP)

South Africa's credit market is dominated by four banks[15], which account for over 90% of the country's credit portfolio[16].

Overall credit availability in the country has been growing in the last few years, with domestic credit to private sector as a percentage of GDP rising from 140% in 2008 to 147% in 2017[17]. Credit provided by the financial sector specifically is also relatively higher than the other countries, standing at 79% of GDP[18].

Credit availability in Nigeria is limited - private sector credit as a percentage of GDP is 14%, compared to SSA's average of 40%[19].

Although MFIs have a larger penetration in rural areas and cater to more than half of Nigerian small ticket-size credit needs, commercial banks account for 98% of the loan portfolio. Overall, the financial services sector shows low financial inclusion rates with less than 4 in every 10 adults owning a bank account and only 3% of adults borrowing to start, operate or expand a farm or business[20].

Kenya represents the most advanced credit market in East Africa, where banks account for over 90% of loans advanced in the country and domestic credit to the private sector is at 39%[21].

Several banks have adopted mobile lending, spurred by the active mobile money ecosystem, boosting borrowing and loan portfolio[22]. Kenya's lending growth during the past three years has been at a cumulative rate of 9%, and it also has the most profitable financial services sector among all the focus countries, despite high NPLs[23].

Tanzania is a much smaller credit market, at less than a third of Kenya's loans and advances.

Domestic credit to the private sector is at 15% of GDP[24], lower than Kenya and Rwanda. However, it has a similar profile to that of Kenya in terms of types of lenders and loan portfolio split among the players, as well as a growing digital lending ecosystem. Its lending growth during the past three years has been at 8%[25], but Tanzania has significantly lower credit penetration and banking sector profitability.

Rwanda's credit market differs from the other focus countries by having the majority of borrowers within credit unions and financial co-operatives, instead of banks.

These institutions cater to over 70% of the borrowers and control nearly a third of the credit portfolio. Rwanda's credit to private sector to GDP ratio has been low, but has remained stable - standing, without significant fluctuations, at around 20% in the last five years[26]. Rwanda's lending growth in the past three years has been the highest, at a cumulative rate of 17% and banks control slightly more than two thirds of the quantum of loans and advances - similar to the other focus countries.

Mapping and assessment of leading credit innovations

To assess the role that innovations play in enhancing access to credit, it is crucial to understand challenges that exist across the lending value chain, which underlines the critical steps in offering, disbursing and servicing credit. Mapping challenges across the lending value chain also allows targeted identification of leading innovations.

[15]BSA, FirstRand, Nedbank, Standard Bank | [16]South Africa Reserve Bank annual industry publication | [17]World Bank, 2017-18. Domestic credit to private sector (% of GDP) | [18] World Bank, 2017-18. Domestic credit provided by financial sector (% of GDP) | [19]World Bank, 2017-18. Domestic credit to private sector (% of GDP) | [20]World Bank. 2017. Global Findex database | [21]World Bank, 2017-18. Domestic credit to private sector (% of GDP) | [22]These include Commercial Bank of Africa, Kenya Commercial Bank and Family Bank | [23]IMF Financial Access Survey 2018 data | [24]World Bank, 2017-18. Domestic credit to private sector (% of GDP) | [25]IMF Financial Access Survey 2018 data | [26]World Bank, 2017-18. Domestic credit to private sector (% of GDP)

Key challenge dimensions across the lending value chain

The credit sector in SSA faces a myriad of challenges.

These include socio-economic factors ranging from low-income levels to literacy, as well as enabling factors such as policy, cost of funding and availability of data for risk assessment. Challenges can be categorized into six key dimensions:

Figure 1: Challenge dimensions across the lending value chain[27]

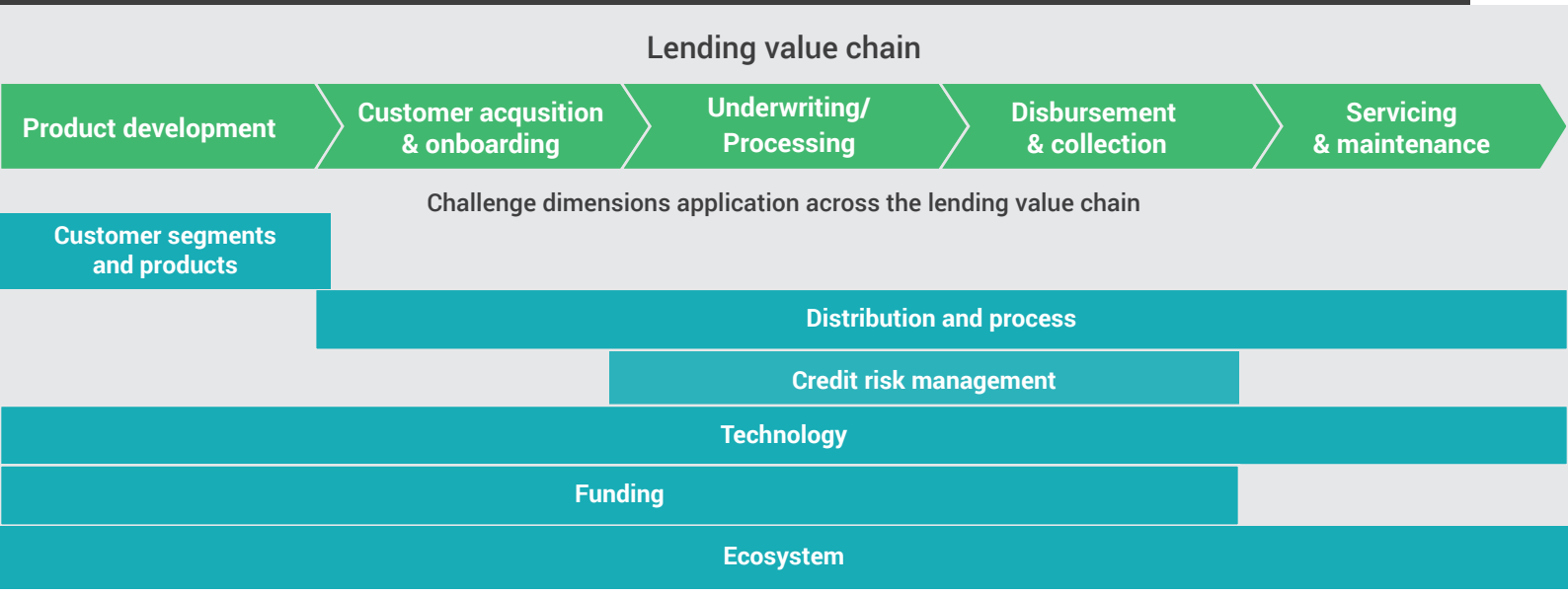


Figure 2: Summary of challenges identified, within each challenge dimension

Figure 2 summarises some key challenges within each challenge dimension, identified across the focus countries on both the demand and supply side of the credit ecosystem.

[27]Application of technology and ecosystem challenge dimension spans across the lending value chain

Overview of global credit market innovations[28]

Innovative digital technologies and business models have emerged to solve some of the credit access and delivery challenges highlighted above.

They cut across various dimensions, with a majority seeking to fill critical market gaps through new products.

Figure 3: Overview of global credit innovations identified across 4 of the 6 challenge dimensions [29]

Customer segments and products:

Innovations that target financing for un/underserved segments e.g. agri, MSMEs, education etc. which are considered risk by traditional players through customized product offering

- Online nano/consumer lenders
- Online business lenders
- Telco based nano lenders
- Instant merchant cash advance
- Digital savings circles
- Digital education finance
- Inventory backed loans
- Pay as you go model
- Invoice discounting/invoice market places
- Non EMI based equipment financing
- IOT enabled asset finance*
- Instant home financing*
- Digital credit cards
- Empathy engine based financial services*

Credit risk management:

Models that leverage alternative data or methods to underwrite and serve previous underserved segments

- Alternative data credit scoring
- Veritechs/online verification/credit investigation
- Social network powered finance*
- Open Banking/API
- Crypto currency backed loans

Distribution and process innovation:

Innovations that improve various process of the financial service lenders including; distribution, cross sell, customer experience etc.

- Admintechs
- Lending aggregators and search engines
- E-commerce platforms
- Digital/Neo Banks
- Crypto banks*
- Chat bot enables customer onboarding and lending*
- Digital debt renegotiation/collection*
- Digital consumer journey mapping*

Funding model:

Innovative models of raising funds from a wide range of credit providers

- Peer to peer lending lending platforms
- Crowdfunding platforms
- Marketplace lending as a service (mPLaas)/composite lending*

**Innovations not operational in the focus countries.*

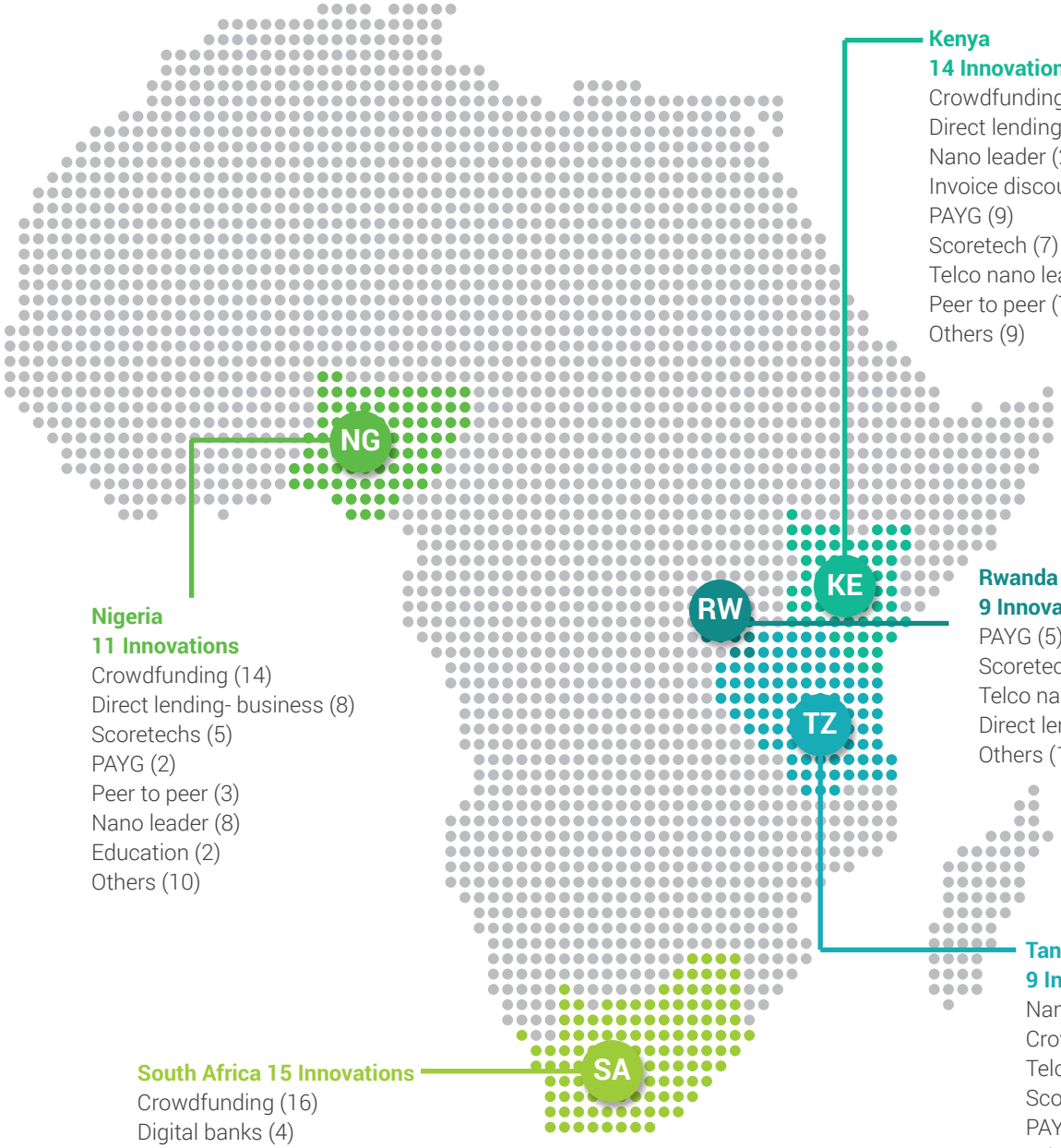
[28]The scope of innovations considered include both fintechs and innovations by traditional players
[29]Intellecap analysis based on secondary and primary research.

Credit market innovations in the focus countries

Approximately 67% of the identified global credit market innovations are operational in the five focus countries,[30] with South Africa leading in both the number of innovations and established innovators.

Despite this, Southern Africa only accounted for 28% of the total alternative finance market volume[31] in Africa in 2016, second to West Africa's 41% in the same year[32]. Southern Africa was closely followed by East Africa*, which contributed to 24% of the market share[33].

Figure 4: Overview of credit innovations in the focus countries



In bracket is total number of innovators identified for each category.
East Africa here refers to Kenya, Uganda, Tanzania and Rwanda

[30]Detailed Credit Innovations table attached as Annex 1
[31]Total transactions facilitated through non-traditional credit sources
[32]The 2nd Annual Middle East and Africa Alternative Finance Report 2018, Cambridge Centre for Alternative Finance
[33]The 2nd Annual Middle East and Africa Alternative Finance Report 2018, Cambridge Centre for Alternative Finance

South Africa has an advanced fintech sector supported by a number of hubs, accelerators and co-working spaces, which drive credit innovation.

Significant innovation is evident in MSME financing, including invoicetechs, digital business loans, digital marketplaces and merchant cash lenders. P2P models and direct lending platforms provide a robust personal lending ecosystem in the country. In addition, South Africa has lending aggregators and digital banks, which are non-existent in the other research focus countries.

Credit innovations in Nigeria have grown around personal lending and agricultural finance, driven by crowdfunding and balance sheet lending.

For some short-term personal loans, fintechs partner with employers to underwrite salaried employees using payroll data. In agricultural finance, smallholder lending in Nigeria has generated various models that leverage crowdfunding and partnerships to underwrite farmers and drive financial inclusion in this segment.

East Africa has various lending innovations spurred by a vibrant mobile money ecosystem, including telco-based lending arising from partnerships between banks and mobile network operators (MNOs).

Mobile money innovation has been a key driver of financial inclusion in the region. In addition to telco-based lending, other credit innovations have sprung up such as app-based nano lending[34], P2P lending and crowdfunding platforms across the three countries. MSME lending innovations are also slowly growing with various innovators focusing on this underserved segment mainly through invoice factoring.

Leading innovations in the focus countries

Seven key innovations are discussed across the focus countries based on how they address credit sector challenges, and the feasibility, scalability and sustainability of their business model.

Table 2: Key parameters for highlighted innovations

Key innovations	# of innovating firms	Presence within focus countries	Size of target market[35]	Penetration (Uptake/ target mkt) [36]	Approximate financing raised (USD)[37]
Scoretechs	12	Kenya, South Africa, Nigeria, Tanzania, Rwanda	80 – 100Mn financially excluded people	<15%	$250Mn
Invoicetechs	17	Kenya, South Africa, Nigeria Rwanda	40-45Mn MSMEs	<1%	$20Mn
Lending aggregators	4	South Africa, Nigeria	50-70Mn banked population	<1%	-
Telco based lenders	6	Kenya, Tanzania, Rwanda	50 - 55Mn Mobile money subscribers	<15%	-
PAYG	13	Kenya, South Africa, Nigeria, Tanzania, Rwanda	100 – 150Mn adult population	<2%	$900Mn
Peer to peer lenders	16	Kenya, South Africa, Nigeria Rwanda	100 – 150Mn adult population 40-45Mn MSMEs	<1%	$5Mn
Edufintech	2	Kenya, South Africa	10 - 12Mn tertiary education students	<1%	$50K

Sources: Intellecap analysis based on various data sources (World Bank/IFC, UNESCO, ITU, innovators websites)

[34]These are platforms that leverage alternate data like social media data and activities, mobile wallet transaction data, to undertake credit assessment and determine loan limits. They lend from their own balance sheet and offer loans ranging from USD 2 - USD 700
[35]Various data sources; World Bank/IFC, UNESCO, ITU
[36]Intellecap analysis based on number of customers served by the identified innovators
[37]Intellecap analysis based on publicly reported deals on various sources; Crunchbase, Company websites, African Private Equity and Venture Capital Association

Assessment of leading innovations

Each innovation was assessed along 13 dimensions that sought to determine feasibility, scalability and sustainability.

Table 3: Innovation assessment dimensions

FEASIBILITY	SCALABILITY	SUSTAINABILITY
Market gap and level of competition	Current and potential customer segments	Global cases
Revenue model	Potential for replication to other geographies	Non-performing loans
Cost structures	Unique selling proposition (USP)/customer experience impact	Breakeven achieved
	Funding	Cross sell/repeat business
	Volumes growth/traction	Regulation

CHAPTER 2: SCORETECHS (CREDIT SCORING PLATFORMS)

Scoretechs enable traditional and start-up financial institutions, as well as digital lenders, to underwrite unserved and underserved customers.

These platforms leverage multiple data sources to assess credit risk and generate a credit score for potential new customers.

Traditional lenders often struggle to assess the credit risk of financially excluded individuals due to lack of income documentation, banking transaction history and credit bureau data. Scoretechs leverage innovative data sources including mobile wallet transactions, social media activities, consumer financial behavior and psychometrics to generate credit scores on the basis of which lending decisions are made. For example, Social Lender based in Nigeria works with banks to lend to borrowers purely based on their reputation on mobile, online and social media platforms. To access the data, scoretechs often establish APIs with various sources including banks, MNOs, utility companies, credit reference bureaus and government agencies.

Most of the innovators in the focus countries have been sector agnostic. There has, however, been an emergence of agriculture-focused scoretechs, mostly in Kenya.

Agriculture e-commerce platforms like Tulaa help build digital farmer profiles through the transactions facilitated, whose data is then used to assess risk. FarmDrive combines farmer demographic and social media data with satellite, weather, environment, economic and agronomic data to enhance credit scores. Initial piloting of these innovators reported high NPLs of 25-35% - but thanks to continuous improvements to their algorithms, these scoretechs are currently reporting 10-15% NPLs.

Scoretechs enable customization of credit to individuals, and reduce rejection rates by lenders.

Based on the individual credit scores generated, lenders are able to customize products to each customer by recommending loan amounts and tenors. Digital lenders relying on these algorithms leverage risk-based pricing mechanisms with rates which are significantly higher than those of traditional lenders (up to 15% per month). Of all customer applications received by scoretechs, 30-40% are approved for loans - a big proportion of which would not have qualified under traditional underwriting frameworks.

Business models

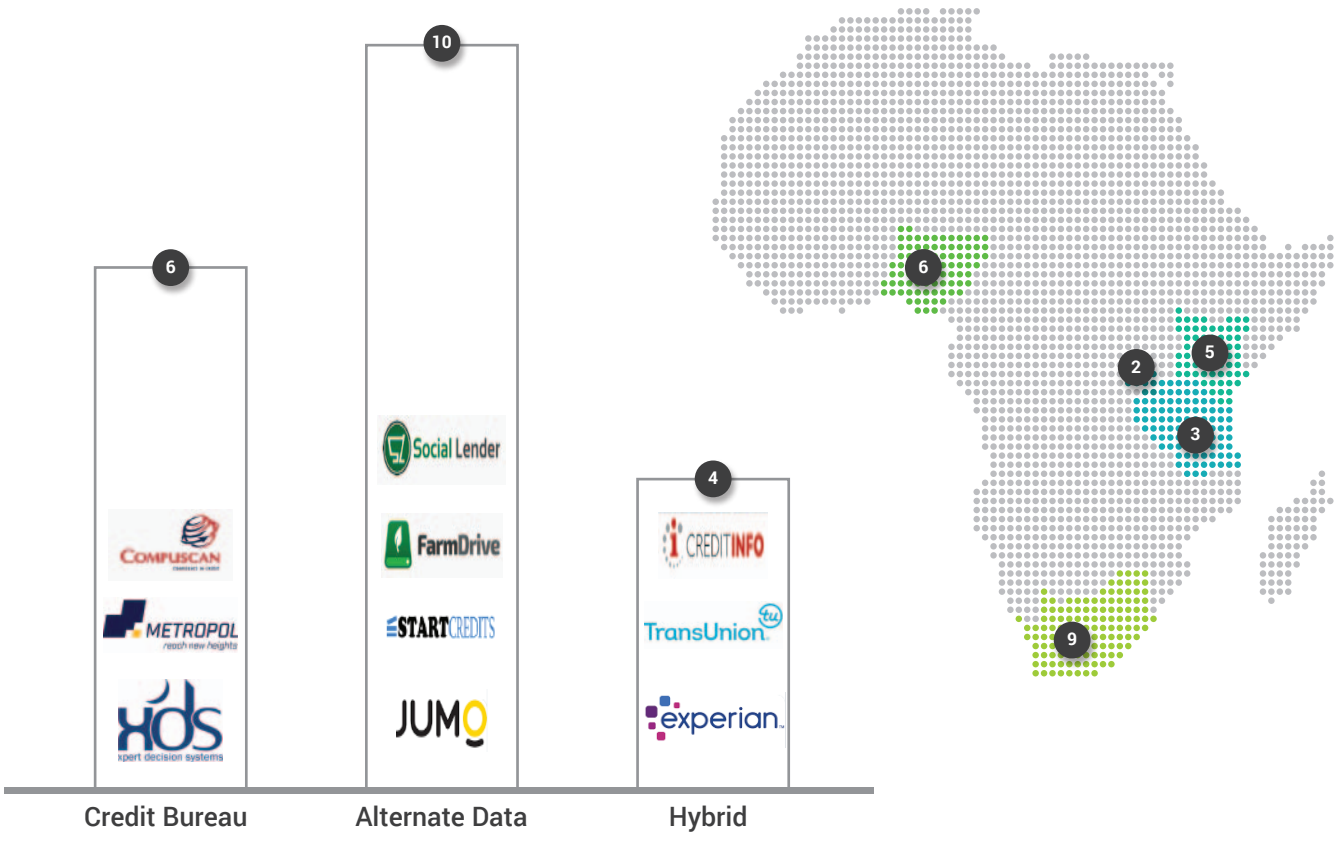
Based on type and source of data used, three innovation models are prominent within scoretech:

Credit bureau data based	Alternative data[39] based	Hybrid model
These are platforms that rely on data collected from traditional sources, such as credit bureaus. The reach of these platforms is limited to the 20%[38] of the credit-accessing population whose data has been reported to credit bureaus.	These are platforms that rely purely on non-traditional data, including mobile wallet transactions from MNOs, social media data from sites like Facebook, Instagram and Twitter, and weather and satellite data.	These platforms utilize a mix of both non-traditional and credit bureau data to generate credit scores that inform the creditworthiness of borrowers.

The hybrid model is emerging to be the most successful, as it provides a holistic view of the customers. Alternative data based innovators are increasingly working with credit bureaus to strengthen their algorithms, while credit bureaus are building their ability to assess customers whose information is not reported in the bureaus. CreditInfo, for example, was established in Kenya in 2015 as a credit bureau and leverages both the credit bureau and alternative data to assess the customers. To date, the company generates credit scores for up to one million customers per month in Kenya, up from 100,000 per month in 2017. The company has also established offices in more than 20 other countries.

A total of 20 innovators were identified across the research focus countries, nine operating in South Africa, six in Nigeria, five in Kenya, three in Tanzania and two in Rwanda[40]. Some innovators like CreditInfo, JUMO and Sasa Solutions operate across various countries.

Figure 5: Overview of Scoretech innovation models identified across SSA[41]



[38]Intellecap analysis based on data from primary interviews
[39]This is data from non-traditional data sources like social media, mobile wallet etc.
[40]The sum of innovators across countries is more than 20 since some innovators operate across several countries but are accounted as one in the total.
[41]Intellecap analysis based on secondary and primary research.

Feasibility

Scoretechs have the potential to serve over 50%[42] of the adult population currently locked out of the formal financial system in the focus countries.

About 15%[43] of the market has already been served by the innovators identified in this analysis. The market is dominated by a few big players like JUMO, who have scaled across several geographies - mainly attributed to the ability to establish key partnerships.

Accessibility to accurate data and high initial technology costs are some of the biggest barriers to entry for scoretechs.

The innovators' main revenue driver is the fee per credit score, which is charged regardless of the final loan decision.

The fee ranges between 2-5% of the loan amount requested, and is incurred by the lenders. JUMO has diversified its revenue model to include other services like identity verification and loan monitoring and collection, which have enhanced revenue generation. The company has also partnered with Airtel and Tigo in Tanzania to offer mobile loans.

The cost structures for scoretechs are driven primarily by big data technology and manpower, which is estimated at 50-70% due to the need for experienced data scientists. Marginal costs, such as marketing and customer acquisition, are lower - accounting for about 15-20% of total operating cost. For some innovators, customer acquisition costs sit with the lending partners.

Scalability

Due to their ability to work with traditional lenders and the fact that they mainly target the financially excluded, the potential of scoretechs to scale across segments is very high.

For example, FarmDrive has so far enabled input loans for more than 53,000 small-scale farmers ranging from $5-500[44], through partnerships with lending institutions like Musoni. The company is also a key partner under Safaricom's DigiFarm program that seeks to provide access to affordable input loans to more than 1 million customers in Kenya. FarmDrive plans to scale to loan originations of $13 million by the end of 2019[45]. JUMO has helped facilitate loans for close to 10 million individuals[46], while Social Lender has served more than 10,000[47] customers in Nigeria, and plans to scale to South Africa.

The proprietary technology developed by credit scoring innovators can be customized and scaled across geographies and customer segments, but largely depends on availability and accessibility of accurate online data and the establishment of effective partnerships.

With the increasing of mobile and internet penetration, more people are becoming digitized and thus more data sets are available for innovators. Some innovators that have scaled across several geographies include: JUMO, which has established offices across various countries in Europe, Asia and Africa; CreditInfo, which is operational in 27 countries in East Africa, West Africa and Europe; and Lenddo, which is operational in over 20 countries.

The profitability of scoretechs is driven by the ability to generate high volumes of credit scores.

Scoretechs have witnessed steady volume growth, averaging between 20-50% year-on-year - indicating a high uptake of the services by both traditional and new lenders due to a high number of repeat clients. CreditInfo in Kenya for example, has witnessed more than 600% growth in monthly volumes since it began operations in 2015.

Scoretechs require high initial capital for developing the infrastructure and acquiring necessary talent.

Lending funding requirements are, however, minimal since pure scoretechs do not lend from their balance sheets. Innovators have been able to raise several rounds of funding to further enhance their scoring infrastructure and diversify their revenue streams. A cumulative amount of about $250 million[48] mainly in seed and venture rounds raised by six innovators. JUMO has raised the largest proportion (about 35%)[49] of the funding, which has supported its geographical expansion.

[42]Intellecap analysis based on financial account ownership data from the Global Findex Database 2017. | [43]Intellecap analysis based on total customer base of the identified innovations | [44]Digestafrica article: Kenya's FarmDrive receives additional investment led by existing backer,2019. Accessible here
[45]ibid | [46]Appsafrica article: JUMO secures US$12.5M investment from Odey Asset Management, 2018. Accessible here | [47]Techpoint.africa article: Social Lender, a Nigerian lending service expands to South Africa, 2016. Accessible here | [48]Funding data based on publicly disclosed deals
[49]Proportion of total funds raised by scoretechs

Sustainability

The credit scoring innovation has witnessed a rise in the number of successful global innovators, such as Lenddo

Launched in 2011, Lenddo initially focused on micro-lending with the long-term strategy of testing and strengthening its algorithms. The company has offices in Singapore and serves more than 15 countries, including South Africa, Nigeria, Kenya, the Philippines, India, Thailand, Indonesia, South Korea, Brazil, Peru, and United States of America (USA). It has scored more than 5 million people and facilitated disbursement of over $2 billion[50].

While non-traditional credit-scoring models are innovative, their resilience has not yet been tested against extended economic cycles, and have contributed to high initial NPLs for the lenders.

Testing, building and updating credit scoring model algorithms based on economic cycles is key in determining the effectiveness of the models in predicting risk.

> *"Testing our algorithms over time has helped us build a stronger model, reducing NPLs from a high of 70% to 25%"*
>
> ***Kenya based Scoretech***

The revenue model is sound, with the fee generated on each customer transaction thus building a strong customer lifetime value.

Scoretechs generate repeat business from lending partners as new scores have to be generated with every loan application.

The dependency on regulations has a high impact on the sustainability of the model.

Scoretechs are subjected to data and consumer privacy regulations, which aim to protect the consumer data collected. Further, innovators are subject to the Google Privacy Policy and third-party access regulations that control the data that can be collected from search engines. Any extreme changes in these regulations, such as putting excess restrictions on access to the data, may impact innovation viability and growth. Nonetheless, these regulations are crucial in protecting consumers and thus a balance between customer protection and innovation promotion needs to be achieved.

[50]Fintech Futures article: EFL merges with Lenddo, 2017. Accessible here

CHAPTER 3: INVOICETECHS

Digital invoice platforms (invoicetechs) can help address the working capital needs of SMEs by providing immediate credit against outstanding invoices.

They digitally originate, assess, underwrite and extend financing to businesses based on existing invoices or receivable notes.
They can provide an affordable and swift solution for businesses to convert unpaid or outstanding invoices into cash, helping them manage their supply chain and ease pressure on their cash flow. They provide a simple and fast digital application process that doesn't require a business to visit an office or make a manual application as is often the case with traditional invoice discounting approaches.

Globally, there have been advances in the use of emerging technologies for invoice discounting.
These include blockchain-based peer-to-peer marketplaces, and the use of artificial intelligence (AI) and analytics to score invoices. Incomlend, a Singapore-based invoice finance platform, for example, has adopted InvoiceCheck, a blockchain tool that allows users to detect if another funder has already paid an invoice. Inviou leverages distributed ledger technology to minimize invoice fraud for financial institutions. Some of these advances, however, are yet to be seen across African countries.

Invoicetechs can help address key challenges hindering SME credit around collateral, credit history, documentation requirements and cash flow.

Stringent collateral requirements by traditional lenders often inhibit SMEs from accessing credit.
By leveraging outstanding invoices, invoicetechs can eliminate the need for other forms of collateral, with lenders recovering the amount directly from debtors. The platforms thus help in increasing the liquidity of SMEs who require immediate working capital, but have to otherwise wait for 60-90 days to get paid.

Digital processes reduce turnaround times and can enable use of alternative data sources in assessing invoices.
The innovation leverages technology for application and disbursement of funds, thereby reducing the need to visit a physical office and improving fund disbursement turnaround times. Invoices are also scored based on non-traditional (e.g. the sector and reputation of buyer) and traditional (e.g. transaction history between the buyer and the supplier, bank statements and credit bureau checks on the seller and the buyer) data points, which - when combined - presents a more holistic view of the customer.

Invoicetechs also lower the transaction costs associated with processing large volumes of small ticket and repetitive loans.
The SME funding environment is complicated by other external factors, such as variation in geographical location, size of business and high sector fragmentation, which drive up the cost of serving the segment. Digital platforms help to break these complexities and lower the costs of processing transactions.

Business models

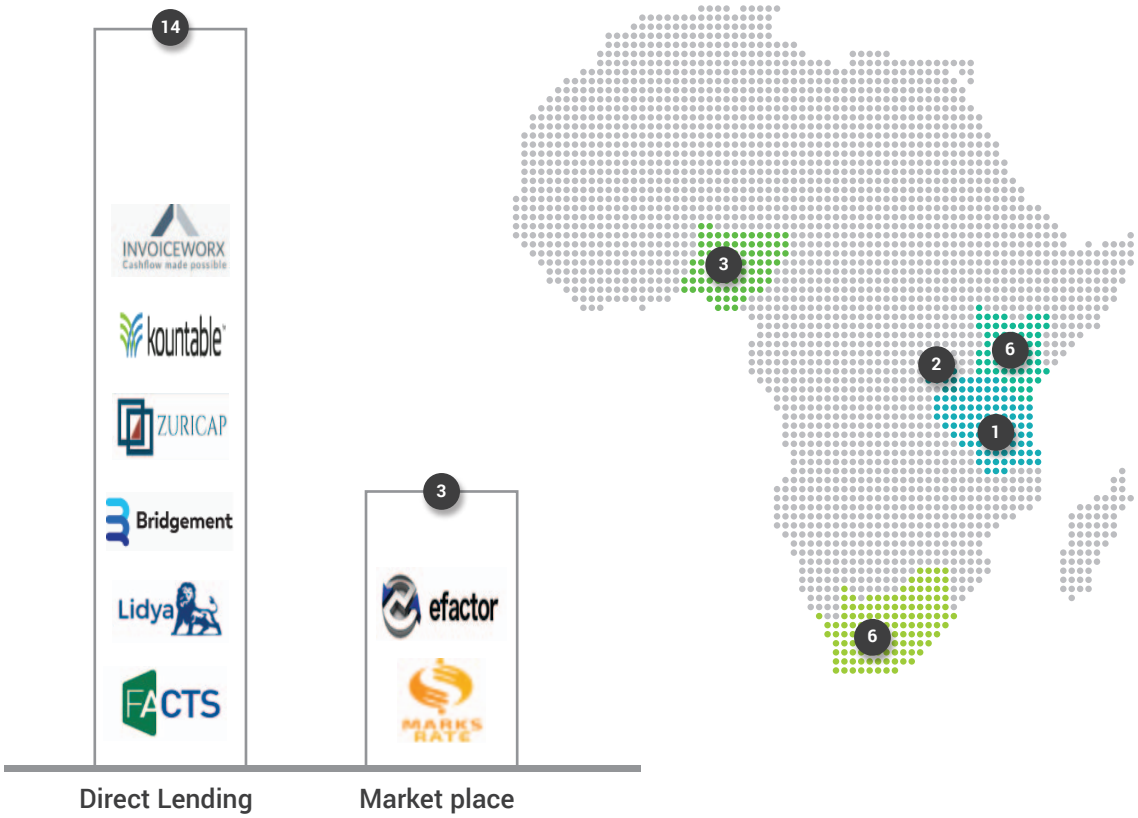
Two invoicetech business models were identified across the focus countries.

Invoice market places	Direct discounting/ financing
These platforms enable auctioning of invoices on the platform to various investors and charge a transaction fee on each invoice funded. These include efactor based in South Africa and Marks Rate based in Kenya.	These are platforms that discount and fund invoices from their own balance sheet, or facilitate direct discounting by financial institutions. Fourteen of the identified innovators fall in this category. They include: Zuricap and FACTs in Kenya, Invoice Worx and Bridgement in South Africa, Lidya in Nigeria, and Kountable in Kenya and Rwanda.

The most innovative models have been those that provide end-to-end support for the SMEs, in addition to the invoice financing. Kountable, for example, helps facilitate global trade for its customers by providing services that include procurement, financing, insurance and logistics on a single platform. So far it finances SMEs in Kenya, Rwanda and Ghana.

17 innovators are already operational across the focus countries; six operating in South Africa, six in Kenya, three in Nigeria, two in Rwanda and one in Tanzania[51]. Whilst most of the innovators are sector agnostic, a number of them focus on specific sectors. For example, Zuricap, Umati Capital and FACTs finance SMEs in the agriculture value chain, while Kountable focuses on health-based SMEs.

Figure 6: Overview of Invoicetech innovation models identified across SSA[52]



[51]The sum of innovators across countries is more than 17 since some innovators operate across several countries but are accounted as one in the total.
[52]Intellecap analysis based on secondary and primary research

Feasibility

A cumulative SME financing gap of over $245 billion[53] exists across the focus countries, presenting a large opportunity for innovative financing models.
The SME sector thus provides a compelling and largely untapped market opportunity for innovative finance providers who incorporate new lending models and risk assessment tools. Despite this, the research identified only 17 innovators with access to capital for on-lending identified as one of the biggest barriers to entry.

The main revenue drivers include a one-time processing fee (+/-2-3%) and a factoring fee (+/-2-5% per month), charged to SMEs for the duration of the invoice (which averages 60 days) and translating to high APRs of between 35-40%.

The key cost driver for invoicetechs is the cost of capital which averages 20-25% for those lending from their own balance sheet.
The high cost of capital can be attributed to several factors. These include the fact that most funding is internationally-sourced and thereby builds in foreign exchange and hedging costs. Also, SMEs are considered a risky segment, with loans priced at a higher rate as a result. Core operational cost drivers for invoicetechs are marketing, acquisition and platform maintenance costs. Customers are sourced through referrals, partner networks and large corporations.

Scalability

There are close to one million SMEs and over 40 million micro enterprises operating in the focus countries - more than 50% of which are financially constrained but yet have limited funding options[54].
Less than 1%[55] of these SMEs have been served through digital invoice trading platforms with loans offered ranging between $400–50,000 for small enterprises and up to $500,000 for medium enterprises. Kountable has so far funded more than 200 SMEs and disbursed over US$ 46 million in Kenya and $8 million in Rwanda.

The innovation can potentially be scaled to other countries, with some of the innovators assessed having operations across multiple countries.
Kountable, for example, has already set up offices in Kenya, Rwanda and Ghana. The performance in each geography depends on the ability to establish effective supply chain partnerships, such as relationships with corporates to access to SME and corporate data for risk assessment. The set-up of local operations is also key to ensure some form of physical interaction with SMEs through frequent physical follow ups.

The repetitive nature of the business has resulted in increased volumes.
The surveyed innovators have been experiencing more than 100% growth in revenues annually – driven by high loan reapplication rates of between 90-95% and awareness creation to SMEs on invoicetech as an alternative source of funding[56].

Dependency on funds for on-lending, especially for the direct discounting model, is a key challenge affecting scalability.
The ability to raise funding for on-lending is a challenge facing innovators adopting the direct discounting model. The sustainability of the model is dependent on the ability to raise a good mix of debt and equity. Yet, innovators have struggled to raise debt, with a current debt to equity ratio of 1:1. Such innovators can, however, reduce the funding dependency adopting a P2P model (which is more common globally) or through bank partnerships. Invoicetechs in the focus countries have cumulatively raised about $20 million, mostly in seed and venture funding .

[53]International Finance Corporation (IFC) MSME Database, 2017. Accessible here
[54]International Finance Corporation (IFC) MSME Database, 2017. Accessible here
[55]Intellecap analysis based on total customer base of the identified innovations
[56]Funding data based on publicly disclosed deals

The innovation leverages technology for application and disbursement of funds, thereby enhancing customer experience.

Technology enhances the turnaround times for the lenders, with disbursement done within 3-5 days, providing timely funds to the SMEs. Kountable has automated the loan application process, where customers are on-boarded through a self-service mobile app which undertakes KYC and enables the customer to scan required documents. This improves the process of fund disbursements and enhances SME business performance.

Sustainability

Global cases that have scaled successfully across geographies indicates sustainability of the innovation

A number of invoice trading platforms have been established globally which have scaled across geographies and serve a large number of customers, and which can inform the development and refinement of models in SSA. The majority of such innovations have adopted the marketplace model. For example, MarketInvoice has financed over 170,000 customers and has facilitated over $1 billion worth of invoices to SMEs in the United Kingdom (UK)[57], while Kredx has financed more than 300,000 invoices in India[58].

NPLs are lower in the segment since the invoices serve as quasi-collateral. Fraud risk can, however, drive up NPLs.

Although most innovators report NPLs averaging 5%, some reported NPLs as high as 15% - driven by operational risks arising from fraudulent activities between SMEs and buyers. To mitigate against losses, innovators like Zuricap request for equipment collateral from the invoice payers, while Umati Capital has taken up insurance to cover against loss. Globally, emerging technologies like blockchain are increasingly being used to reduce operational risks and drive sustainability.

Given the high repeat businesses and low operating costs, the model is predominantly profitable and demonstrates breakeven potential.

Some of the innovators have been able to achieve earnings before interest, tax, depreciation and amortization (EBITDA) margins of between 20-40%.

Invoice financing presents a significant opportunity for repeat business and cross-selling.

The innovators interviewed enjoy high re-application rates from SMEs given the continued need for working capital financing. They can also cross-sell other products, such as unsecured business and personal loans.

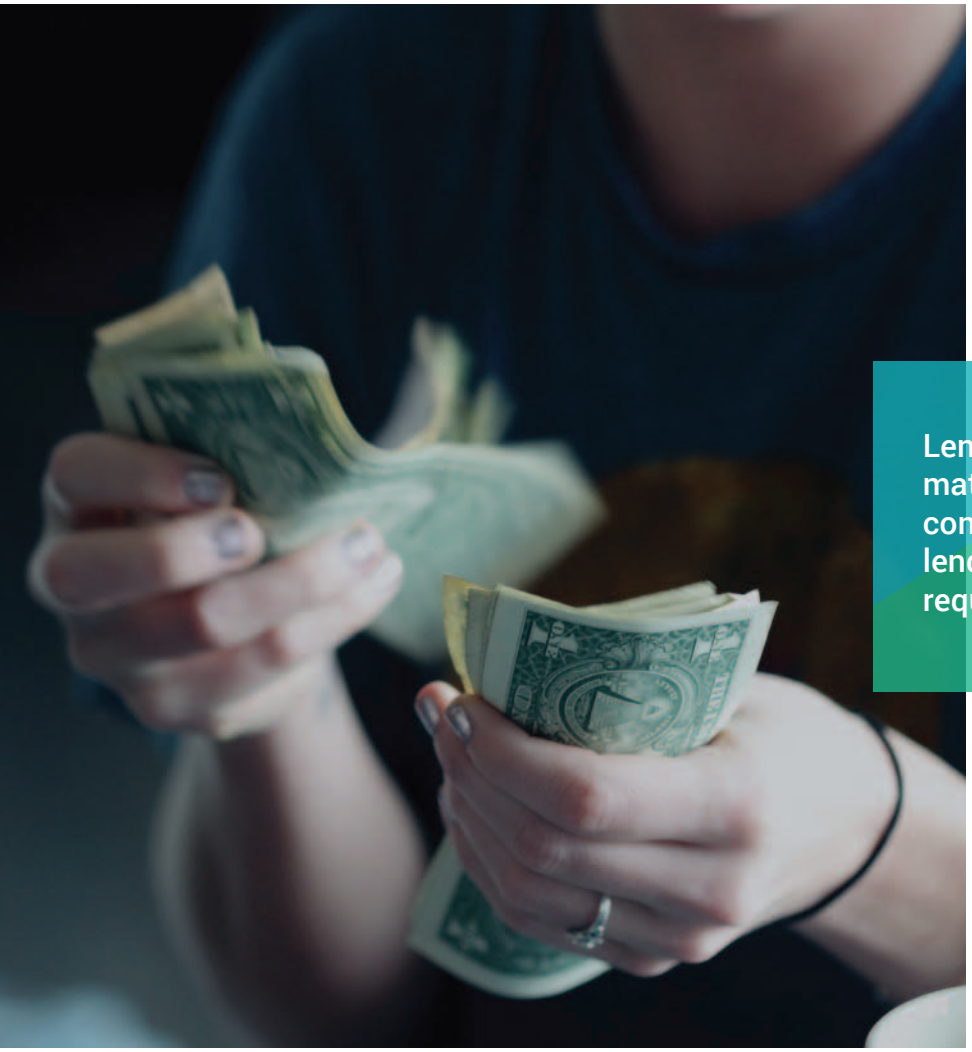
There are no specific regulations on digital invoice discounting platforms across the focus countries.

However, the national regulatory frameworks for credit services apply in Nigeria and South Africa. The lack of regulations can act as a deterrent to investors, especially in the case of the marketplace model where clear fraud and money laundering guidelines need to be put in place.

> *"Since a bigger proportion of our customers supply to governments, any change on procurement regulations e.g. supplier payment terms or process has a negative impact on our business"*
>
> ***Kountable***

[57]https://marketfinance.com/
[58]https://www.kredx.com/

CHAPTER 4: LENDING AGGREGATORS



Lending aggregators are match-making sites that connect customers to the right lenders based on their specific requirements.

These platforms offer a single point of flexibility to view, compare, choose and apply for loans offered across multiple credit providers, reducing the search time and cost for borrowers.
They allow customers to apply directly for loans through their system, eliminating the need for manual application and enhancing customer experience. For the lenders', aggregators simplify and reduce costs related to marketing, customer acquisition and distribution of products. The aggregators focus on delivering added value to customers by recommending only those products that meet their requirements as well as lender's eligibility criteria. Globally, aggregators like BankBazaar have also developed pre-screening algorithms to ensure the eligibility criteria of credit providers is met.

Low financial literacy is a major challenge across the focus countries and affects both low- and middle-income consumers.
Rwanda ranks lowest, with only 26% of the population financially literate, whilst rates are 38%, 40%, 26% and 42% in Kenya, Tanzania, Nigeria and South Africa respectively[59]. The platforms aggregate a broad range of products including business loans, personal loans, mortgages, and equipment financing, which serve a broad range of customers. Aggregators further enhance financial literacy by providing advice on various products and services, helping borrowers to make informed decisions.

[59]Standard & Poor's Ratings Services. 2014. Global financial literacy survey

Business models

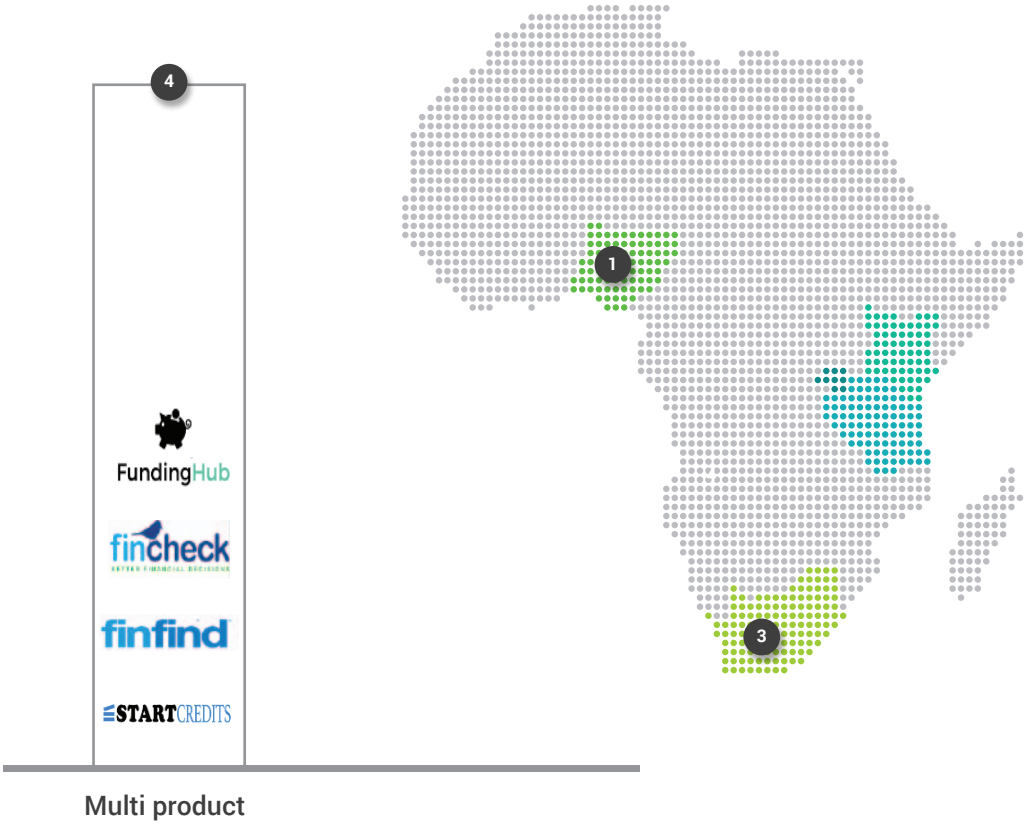
Globally, four key business models have emerged based on the diversity of products offered on these platforms and the additional services provided.

Single product aggregator	Multi-product aggregator	Aggregator with pre-screening services	Aggregator offering risk sharing
Such platforms allow borrowers to compare only one type of product offered by multiple lenders e.g. home loans or motor vehicle loans	Under this model, borrowers are able to compare various loan products offered by different lenders, for example credit cards, insurance, personal loans, and equipment financing.	These platforms offer other services in addition to loan comparisons, which include lead management, KYC processes and primary underwriting for the lending partners to generate quality leads for partners.	Such platforms partially own the risk of loan defaults. This provides some sort of guarantee to the lending partners on the quality of leads that the platform is generating.

Aggregators offering risk sharing have emerged as the most innovative model. In countries like India, most aggregators use proprietary algorithms that analyze consumers' data and run basic underwriting checks. Some also undertake initial KYC and facilitate a completely paperless loan application process. Banks and other credit providers find great value in such services as they can push up the approval rates by as much as 20%.

Across the focus countries, lending aggregators are almost non-existent; only four aggregators, mainly based in South Africa, were identified as part of the research. These offer multi-product comparison services and perform basic KYC on behalf of the lending partners.

Figure 7: Overview of lending aggregator innovative models across SSA



Feasibility

The innovation seeks to fill a critical gap by enabling access to credit products and information to over 50 million banked individuals and about 1 million SMEs in the focus countries.
However, only four aggregators were identified across the countries, most of them offering both business and personal loans. Finfind based in South Africa has attracted more than 250,000 borrowers and 260 lenders, and has enlisted close to 200 products. Fincheck, also based in South Africa, has received more than 2 million applications since 2015, with about 17% of these applicants receiving funding. The biggest barrier to entry is the ability to build strong relationships with lending partners, who are often hesitant to engage with fintechs.

Lending aggregators mainly earn their revenue from successful leads financed by the lenders.
The platforms generate commission fees of between 3-5% of the funded amount. Given the low fee charged and the reliance on lenders for conversion, the innovators need to diversify their revenue sources in order to achieve profitability. In addition to the commission generated, Finfind also earns revenue from the sale of data generated on the platform to researchers and business development service providers.

Lending aggregators run high operating margins driven by digital marketing and acquisition, which account for the biggest proportion of their total costs.
This is because the platforms need to continuously attract quality leads for the lenders and rely on digital marketing channels like Google AdWords and Facebook. The cost of using these digital channels is about 5-10% of the loan amount for small ticket sizes, yet the commission rate from the lenders upon disbursement is 3-5% of the loan amount.

> *"Using digital channels to acquire customers is quite expensive, which has made us resort to manual process which is cheaper but time consuming"*
>
> ***FundingHub***

Scalability

Lending aggregators target individuals and SME borrowers with information on available financial products and features.
Lending aggregators work with the credit offerings presented by their lending partners and are thus unable to scale to untapped segments on their own. Given the low number of innovators, minimal scale has been achieved across the focus countries, with less than one 1% of the potential market being served. Conversion rates are also low and require dedicated focus from the partner credit providers to help these platforms scale.

The technology leveraged by the lending aggregators is replicable across geographies and can be used to serve customers in multiple countries.
However, the innovation relies on accessibility of the internet and thus scale is limited to urban and banked segments. These platforms also rely on establishing effective partnerships with credit providers.

Lending aggregators have minimal dependency on funding and mainly require patient capital to build the platform and establish effective partnerships.
Lending aggregators have, however, struggled to raise initial funding and mainly rely on capital from the founders.

Their biggest value proposition is the ability to enhance customer experience by providing a one-stop shop which enables customers to compare and select the lowest product fees or pricing across multiple credit providers. Some of the platforms also offer advice on the most suitable products for customers. Finfind, for example, provides business advisory to both borrowers and lenders, which helps in addressing supply and demand challenges for business loans and boosts uptake.

Sustainability

Globally, some lending aggregators have achieved scale.

BankBazaar, which was established in India in 2008, has a customer base of 23 million and has scaled across 6 countries including India, Singapore, Malaysia, Philippines, UAE and Mexico[60]. PaisaBazaar, also established in India in 2011, has served close to 140 million customers and facilitates $1 billion worth of loans every year[61].

Profitability in a regular aggregation model is questionable since a typical lead and disbursal fee of 3-5% of the funded amount is not sustainable for the platforms.

Further, the high cost of operations suppresses the profitability of the model. Finfind has been able to achieve breakeven due to the additional business advisory services provided.

The lending partners own the customers, thereby reducing chances of repeat business for the aggregators.

Interaction with the customer comes to an end after a successful application, with banks managing the relationship thereafter. This limits the aggregator's ability to get repeat business from the customer.

Lending aggregators have low dependency on regulation.

Like most of the other innovations across the focus countries, lending aggregators are unregulated. This, however, does not significantly impact the operations of the aggregators as they do not lend from their balance sheets.

[60]https://www.bankbazaar.com/
[61]https://www.paisabazaar.com/

CHAPTER 5: TELCO-BASED LENDERS

Telco-based lenders present a unique partnership that integrates bank and MNO capabilities to enhance access to credit for individuals and micro businesses.

Telco-based lenders leverage partnerships between credit providers and MNOs to offer small ticket and short tenure unsecured digital loans.
MNOs provide access to mobile wallet transaction data for credit assessments, as well as access to a wide customer base, while banks/MFIs provide funding. Interest and facilitation fees charged on the loans are then split between the two players. Additionally, the lenders offer a micro-saving channel for customers.

This model has seen significant growth in East African countries, where there is a high penetration of mobile money, while none were identified in South Africa and Nigeria. It was first established in Kenya in 2012 following a partnership between Commercial Bank of Africa (CBA) and Safaricom to launch M-Shwari. Two other banks and one MFI in the country have also followed suit and the CBA has launched similar products in Tanzania, Uganda and Rwanda.

Commercial Bank of Africa dominates the telco-based lending space having launched products across several East African countries.

The innovation seeks to address critical challenges in underwriting, acquisition, distribution and customer contactability that limit servicing of a greater proportion of the low income and unbanked population.

These lenders leverage data generated from mobile wallet transactions, such as M-Pesa and Airtel Money transactions, to assess risk and offer unsecured mobile loans.
The data used include mobile money deposits and withdrawals, bill payments and airtime usage. This data is supplemented with credit bureau data to provide a holistic view of the customer. Telco based lenders have reported usefulness of such data, recording lower NPLs than the industry average. The use of customer mobile phone numbers for registration ensures easy communication and contactability.

By digitizing core lending value chain processes, the innovation helps reduce the costs associated with offering small ticket loans and enhances customer experience.
Digital customer acquisition, loan application, disbursement and repayment, through USSD and mobile money agents, significantly reduce the cost of serving low income and SME segments. Additionally, innovators are able to upsell loans to existing customers based on repayment trends as well as cross-sell other products like savings. Loan decisions are also made instantly which enhances customer experience, especially when the funds are needed for emergency purposes. The loans are accessible regardless of the type of phone (feature and smartphones) through USSD, sim tool kit and mobile apps.

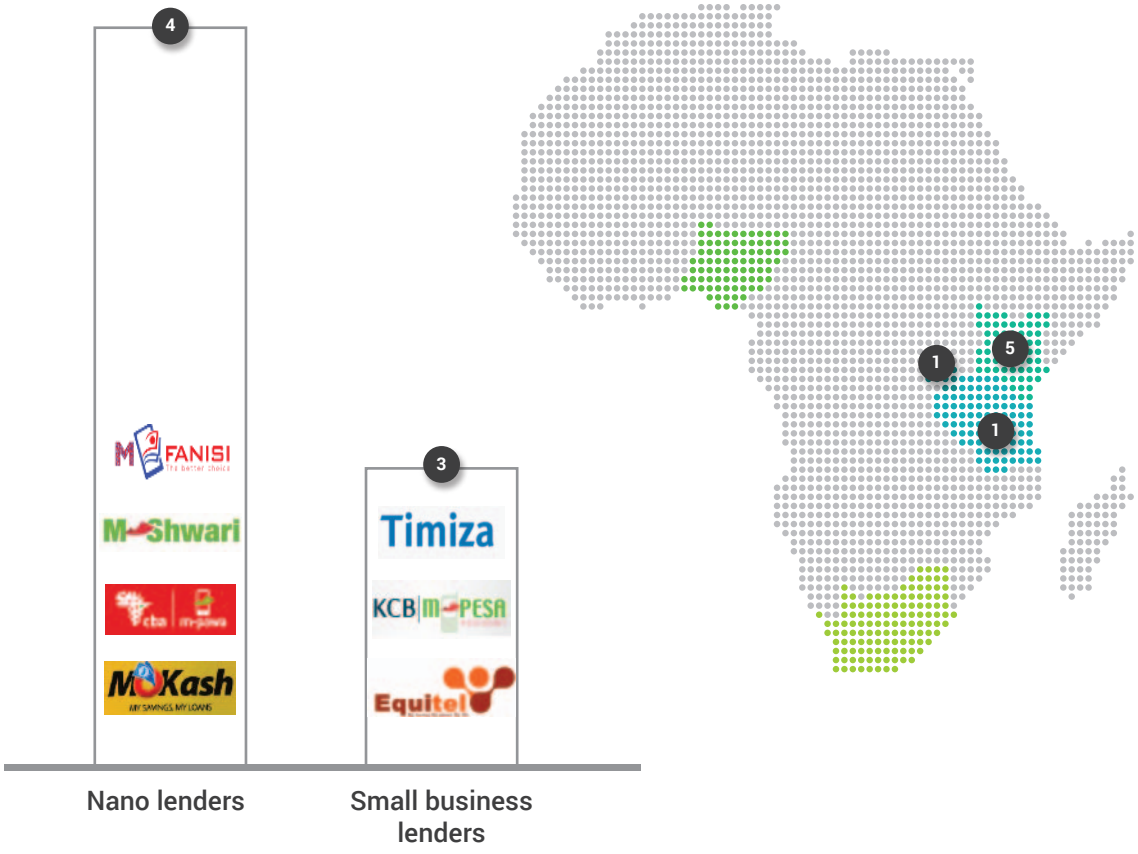
Business models

The research identified seven innovators adopting either of the two business models below with key differentiation being the customer segment targeted. Five of these innovators are operating in Kenya, while Tanzania and Rwanda each have only one innovator.

Nano lenders	Small business focused lenders
These innovators offer lower ticket loans (up to $500), targeting low income consumers. Four of the identified innovators fall in this category: M-fanisi which is a partnership between Airtel and Maisha Microfinance, and M-Shwari, Mokash and Mpawa, which are the CBA products in Rwanda and Tanzania respectively.	These are innovators that in addition to focusing on individuals also target MSMEs by offering relatively higher loan ticket sizes (up to $10,000). The identified innovators include Timiza, a recently launched product by Barclays Bank, and KCB-Mpesa which is a partnership between KCB Bank and Safaricom. Equitel, a product of Equity Bank, also offers loans of up to $30,000.

Small business digital lending is emerging as the innovative model under telco-based lenders as the innovators use the data generated to customize products for the business segment. KCB M-Pesa has been testing a number of products to increase uptake for the businesses e.g. a recent campaign to test market uptake of one day loan product-targeting the hustler segment[62].

Figure 8: Overview of telco based lending innovation models across SSA[63]



[62]Businesses that require daily working capital
[63]Intellecap analysis based on secondary and primary research

Feasibility

The innovation has potential to serve more than 50 million[64] existing mobile money subscribers.

While close to 50% of these subscribers are already registered for digital loan services, less than 15%[65] are actively borrowing. The relatively higher number of registered customers indicates a high need for easily accessible digital loans. Some of the customers are, however, not actively borrowing either due to existing loans with other institutions or fear of "bank loans", while others are rejected by the innovators due to low credit scores and blacklisting in the credit reference bureaus. The reliance on MNO partnerships creates a big barrier to entry for smaller players. The telecommunication sector in the focus countries is monopolistic, with a few large players dominating. The most successful telco lenders have been those that have established partnerships with the dominating telecommunications companies, like Safaricom in Kenya.

Interest rates and facilitation fees are the main revenue drivers for this model.

Innovators enjoy a 4-9% fee-based revenue charged to the customer on a one-time basis; KCB M-Pesa charges the lowest fee (4.08%) while both M-Pawa and Mokash charge 9%. M-Shwari enjoys a relatively higher rate (7%) than the Central Bank of Kenya set rate. Based on the fees and interest rate combination, and short term of the loans (up to 30 days), the APRs translate to 100%+ for most lenders.

The cost-to-income ratio for this model averages 30-40%, which includes a 15-20% payout to the telco partner for managing marketing, customer acquisition, disbursal and collection.

The innovation also relies heavily on up-selling of loans to repeat customers, which comes with minimal cost.

Scalability

Though the current target market is concentrated in the East African focus countries, significant market opportunities exist in Nigeria given its large population, relatively low financial inclusion levels and mobile money developments.

The scalability of the model across geographies is highly dependent on the level of mobile money penetration and the appetite for mobile money services. The innovation has thus been highly successful in the East African countries given the high level of mobile money innovation in the region. It is also expected to pick up in Nigeria with recent mobile money developments that allow MNOs to issue mobile money in a bid to enhance the level of financial inclusion in the country. Further, the penetration level of mobile money agents that offer cash in/cash out points also has a bearing on scalability.

The innovators have mostly offered loans targeted at the low-income population, students and micro businesses.

A big opportunity exists to offer customized products to the SME, hustler[66] and agriculture segments based on sector specific data points collected. In Kenya, the biggest proportion (over 50%) of the borrowers are wage-employed and often borrow to finance day to day needs[67], while about 37% borrow to finance their businesses[68]. There has been low uptake for agricultural purposes, necessitating the need for innovative digital agri-based products.

About 37% of KCB M-Pesa customers borrow for business purposes. This has motivated the innovator to introduce targeted terms for these borrowers e.g. a recent campaign for one day loans targeted at enhancing uptake of business loans for the hustler segment.

[64]Intellecap analysis based on data from national communication authorities - mainly refers to subscribers in Kenya, Tanzania and Rwanda
[65]Intellecap analysis based on total active customer base of the identified innovations
[66]Those who require daily working capital to finance their business - they account for 52% of total M-Pesa transactions and over 33% of Safaricom's revenue.
[67]FSD Kenya - The Digital Credit Evolution in Kenya: An assessment of the market demand, 2018
[68]FSD Kenya - The Digital Credit Evolution in Kenya: An assessment of the market demand, 2018

Scalability

Such innovators have been experiencing up to 60% year-on-year growth in loans advanced and have contributed to more than 60% growth in revenue of the participating banks.
Leveraging on its first-mover advantage, M-Shwari has managed to grow its customer base by an average of 20% year-on-year and currently has over 20 million registered customers, with about 21% of these customers actively borrowing. This is despite charging slightly higher fees compared to the other Kenyan based innovators. To date, the company has disbursed more than 67 million loans valued at about $1.5 billion and has mobilised savings worth $0.87 billion[69].

M-Shwari enabled CBA to leapfrog from a tier II bank to a tier I bank over a five-year period with profitability of the bank growing by more than 150% over the same period.

The large deposit base of the participating banks and the mobile savings provides access to adequate and cheap funding.
M-Shwari, Mokash and M-Pawa require customers to operate a savings account for a minimum of six months before they can avail a loan. Further, the model relies on bank deposits from the traditional model to supplement mobile savings. Banks advance a low interest rate (5-7% pa) on such deposits, resulting in higher net interest margins.

Instant loan application and disbursal as well as digital repayment enhance customer experience and consequently boost the reapplication rates.
Customers are able to access loans within few minutes regardless of the type of phone (feature and smartphones) which is crucial when borrowing for emergency purposes.

Sustainability

Telco-based lenders have witnessed lower NPLs than traditional lenders.
Their NPLs have averaged 5-10% on riskier (new to credit) segments vis-à-vis 10%+[70] overall lending market NPLs, and 15-20% NPLs for leading fintechs in other emerging markets in similar segments.

Loans from telco-based lenders report lower NPLs (average 8%) than traditional loan channels (average 10%)

The innovators under this model enjoy high profitability given the low cost of funds and high revenues generated especially from repeat customers.
Given the low cost of funds (deposits) for the banks in this partnership model, the model is extremely profitable. Some of the participating banks enjoy net interest margins (NIMs) of about 50%.

A high degree of customer stickiness indicates preference for these loans and leads to low marginal costs.
Innovators rely heavily on up-selling of loans to repeat customers, with an annual average of 10 loans per customer which comes with minimal cost.

Although there are no regulations specific to the innovation, the innovators are subject to the regulatory frameworks of the partners, specifically, the national telecommunication authority and the central banks.
In Kenya, for example, innovators are subject to interest rate capping regulations just like the traditional banks. Thus, despite venturing into the innovation space, bank regulatory restrictions and credit risk policies still apply which help cushion against adverse risks. These go a long way in ensuring prudent lending activities and protect the innovators from unforeseen risks.

[69]IKCB Bank: Mobile lending landscape, 2016
[70]Intellecap analysis based on individual countries NPL data

CHAPTER 6: PAY AS YOU GO (PAYG)

Pay as you go models enable financing of productive and consumer assets by leveraging the financed assets as collateral.

This innovation leverages internet of things (IoT) technology to enhance ownership of consumer goods by reducing the upfront cost burden and allowing customers to pay only for usage over a stipulated time and frequency.

The model targets financing for people with low or no credit history and leverages IoT to lock or unlock the product based on customer payment history. This enables the provider to control access to the system, while establishing new real-time data streams. PAYG makes products affordable by breaking down the cost into small amounts.

PAYG solar financing for households who lack access to electricity is the most significant application of PAYG at scale in the focus countries.

However, the PAYG market is starting to expand outside solar home systems and into adjacent industries, such as water, sanitation, telecommunications, and agriculture.

The underlying assets sold to customers represent collateral that can be repossessed or returned should the borrower not be able to continue with the payments.

This eliminates the need for additional collateral. The innovation also adopts a flexible product ownership model where payments are spread out over a longer period of time (up to 36 months), reducing the financial burden on the borrower, with use restricted to payments made.

Digital repayment options provided by the model minimize the costs associated with collecting small values.

The innovation enables use of mobile phones for repayments through mobile money or scratch cards, reducing travel costs and time spent in making repayments.

Business models

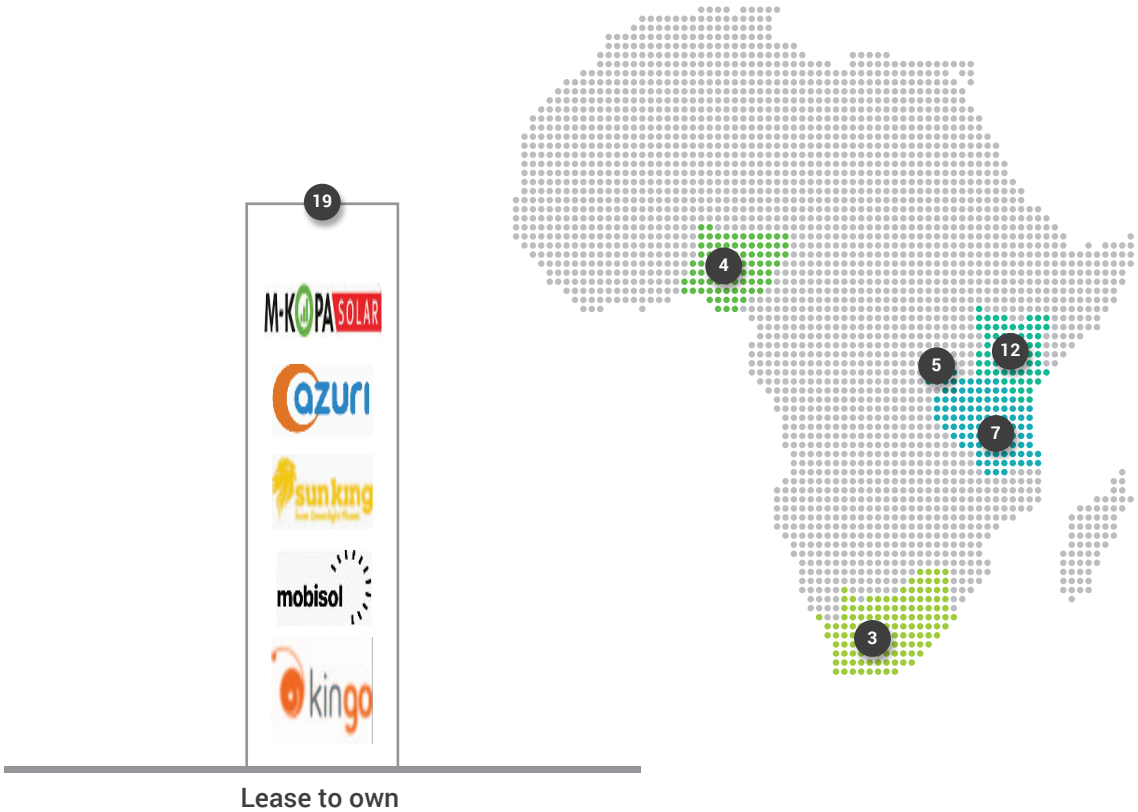
Two PAYG business models have emerged globally:

Lease to own	Energy as a service
Under this model, the customer pays a deposit and the rest over staggered payments, and retains ownership after the end of the repayment period.	In this arrangement there is continuous payment for the life of the service contract, with the service provider always maintaining ownership of the asset. The model has been adopted in USA by Origin Energy, Solar City, and Sunnova.

Innovators in the focus countries have focused on the lease to own model mainly in the energy sector. A few innovative companies focused beyond the energy sector were however identified. These include PayJoy based in South Afric,a which provides access to smartphones for underserved segments, and Hello Tractor based in Nigeria and South Africa, which enables farmers to own or lease a tractor.

A total of 19 innovators were identified across the focus countries all adopting the lease to own model; 12 operating in Kenya, seven in Tanzania, five in Rwanda, four in Nigeria, and three in South Africa[71]. East Africa accounts for the biggest proportion of PAYG companies which can be attributed to the high mobile money penetration in the region.

Figure 9: Overview of PAYG innovation models across SSA[72]



[71]TThe sum of innovators across countries is more than 19 since some innovators operate across several countries but are accounted as one in the total.
[72]Intellecap analysis based on secondary and primary research

Feasibility

PAYG has the potential to serve both low and middle-income consumers, who represent more than 80%[73] of the population in the focus countries, with a broad range of consumer and productive assets.

The innovation has commonly been used to enhance access to electricity through provision of solar-powered systems mainly targeting the low-income rural population. Approximately 60 million[74] households in the focus countries are on off- and unreliable-grid connections and present the target market for PAYG solar innovators. In addition to the unfulfilled market demand for clean energy, PAYG has the potential to enable access to clean water and sanitation services as well as productive and consumer assets.

Technology and high start-up capital requirements are the biggest barriers to entry and, although a number of PAYG solar innovators have been established, early adopters like M-Kopa account for a big proportion of the market share as well as funding received.

PAYG businesses generate revenues from margins on products and financing.

Consumers pay an initial deposit of USD 10-30 and an average of USD 0.40 daily for 36-48 months. This results in a price mark-up of 60-100% on the products.

PAYG businesses are capital intensive as they have to make significant initial investments in purchasing and installing the assets.

Their operating cost to revenue ratio is 60-80%, driven by marketing and distribution costs that rely on field agents and customer call centers. Distribution, installation and marketing costs on average are 30-40% of total costs.

Scalability

To date, the innovators have only managed to serve about 2 million households[75] by supplying solar-enabled kits.

80%[76] of total PAYG solar sales in SSA have been in East Africa. PAYG innovators have also been scaling out of the energy sector into telecommunications, agriculture, water and sanitation, and retail. These are, however, in a nascent stage of development.

Effective replication of the innovation is limited to countries with strong digital financial services ecosystems.

PAYG businesses find it difficult to scale out to countries where mobile money penetration is low. This explains why the model has been scaled effectively mostly in East African countries. However, some countries with low mobile money penetration have adopted the use of scratch cards. Additionally, marketing and distribution operations require innovators to set up physical offices, which is cost intensive and limits effective scale up. M-Kopa Solar, considered one of the most successful PAYG companies in Africa, has to date served more than 600,000 households in Kenya, Tanzania and Uganda[77]. PayJoy has scaled to five countries: USA, South Africa, Mexico, Indonesia and India.

[73]Intellecap analysis based on World Bank data on poverty levels across the focus countries
[74]Off Grid Solar Market Trends Report, 2018 – GOGLA, Dalberg Advisors and Lighting Global
[75]Intellecap analysis based on total customer base of the identified innovations
[76]Global off grid solar market, Semi Annual Sales and Impact Data, H1 2018 –GOGLA, Lighting Global
[77]http://www.m-kopa.com/

Scalability

The innovation has received a great deal of attention from investors and the development community because of its potential role in addressing the energy financing gap in low-income communities.

However, a huge funding gap still remains. PAYG businesses require a large amount of initial capital to pay their suppliers and thus rely on investors for initial funding. This funding attracts a cost of 10-15%, which is relatively lower than other innovations since most of the funding comes from development finance institutions who offer lower interest rates compared to traditional investors.

By 2017, investments in PAYG businesses stood at USD 922 million with East Africa accounting for 86% of all funds raised[78]. M-Kopa Solar has received a large share of this funding having raised more than $160 million[79]. Equity is the most preferred instrument accounting for 50% while debt accounts for 45% of total investments. A funding gap in the range of $3-5 billion[80] in Africa has, however, been estimated over the next five years.

The volume of solar-powered assets has risen over time as innovators recognize customers' lifetime value rather than one-off transaction arrangements.

PAYG businesses have been experiencing about 140% annual revenue growth[81] arising from continuous bundling of products and upgrading of customers to higher systems. Sales are however, expected to reduce over time with increased electrification and availability of alternatives like mini-grids.

Sustainability

Global PAYG success cases have scaled across several Asian, African and Latin American countries.

Green Light Planet was established in 2009 and has to date set up operations in more than 11 countries and served over 27 million people. Dlight on the other hand has been in operation for more than 15 years and has served more than 20 million across 65 countries .

Most PAYG businesses are yet to achieve breakeven several years after establishment.

Profitability for these businesses is tied to the companies' ability to rapidly acquire customers and achieve scale as cost per incremental sale falls. However, customers in this segment have high income fluctuations, and thus struggle to repay. Further, innovators have experienced challenges in tracking customers in isolated areas resulting in NPLs of between 15-20%.

Despite receiving funding from multiple investors, Mobisol, one of the leading PAYG innovators in Africa, recently filed for insolvency raising the question on long-term viability of the model

Bundling of PAYG products enhances cross selling and repeat business from existing customers.

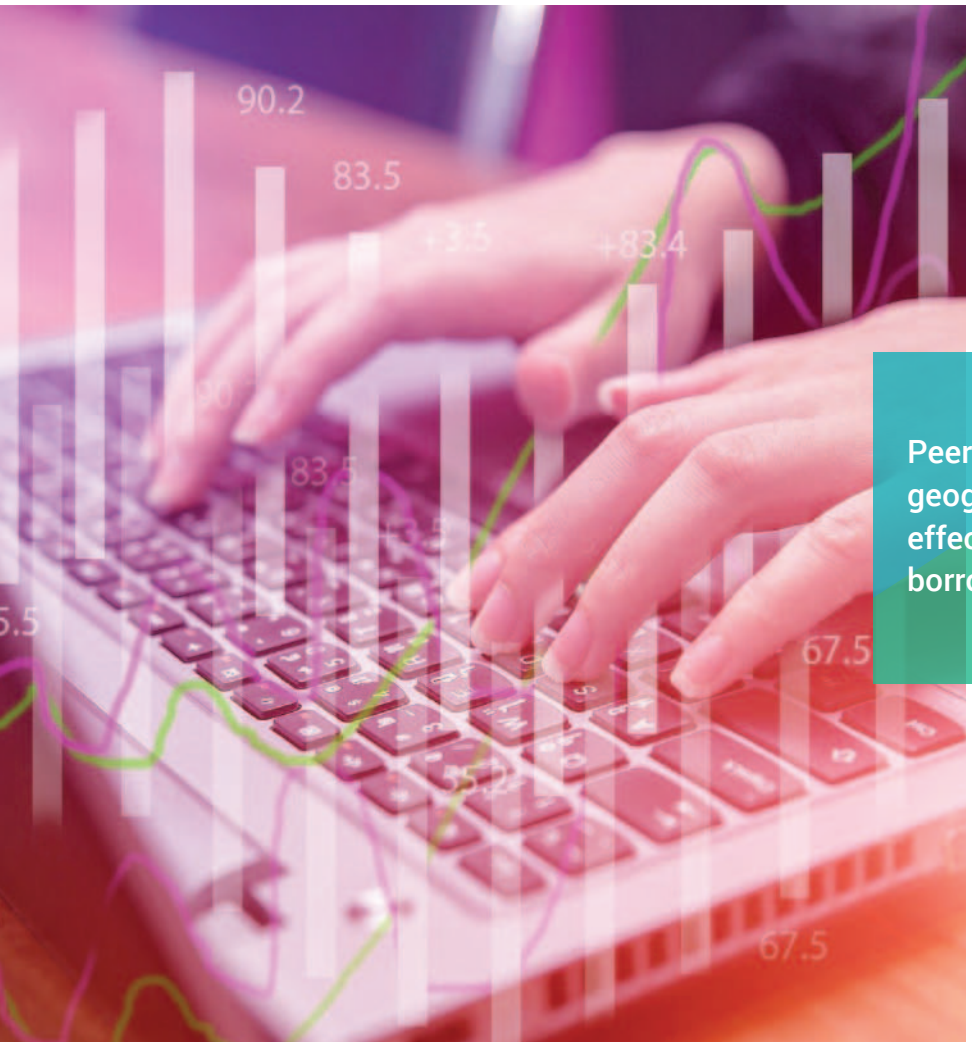
These innovators generate additional revenue by continuously upgrading the customers to higher product bundles. PAYG providers can also use insights derived from the data generated e.g. on customer usage and payment behaviour to tailor products and services to better meet customer needs. Customization ultimately results in stronger and stickier customer relationships for PAYG providers, due to tailored customer engagements.

Regulation of PAYG models currently falls under the purview of the energy regulatory authorities.

However, given the increasing role that the innovation is playing in financing of consumer and productive assets, it is unclear whether the innovators will also be regulated under the financial services acts. This uncertainty may affect diversification into new revenue streams.

[78]Off Grid Solar Market Trends Report, 2018 – GOGLA, Dalberg Advisors and Lighting Global
[79]https://www.crunchbase.com/
[80]Bridging the Gap to Commercial Success for Energy Access Businesses, PAYGO Learnings – Shell Foundation, Persistent, 2018
[81]Off Grid Solar Market Trends Report, 2018 – GOGLA, Dalberg Advisors and Lighting Global

CHAPTER 7: PEER TO PEER (P2P) LENDING PLATFORMS



Peer to peer platforms eliminate geographical barriers and can effectively connect lenders with borrowers.

They are digital marketplaces that convene borrowers and lenders and facilitate the provision of digital credit by matchmaking the borrowers and lenders, typically playing an ongoing central role in the relationship between these parties in exchange for a fixed origination fee. This reduces the high search costs that traditional lenders and borrowers often face and provides a wide array of lenders that can meet the borrower's funding needs. Lenders include high net worth individuals, corporates and development institutions, while borrowers are both individuals and businesses.

The operation of the model involves continuous engagement and interaction between borrowers and investors, and a clear value propositions for the two parties.
The lenders benefit by being able to lend money at a range of interest rates based on proprietary credit scores generated by the P2P platform for each borrower. Investors can thus potentially receive steady, attractive returns while spreading risk across multiple borrowers.

P2P platforms enable risk-based pricing with lenders selecting borrowers that meet their risk appetite.
This is one of the biggest value propositions presented by P2P platforms where traditional and alternative sources of data are used to score the customer effectively, matching them to the risk appetite of the investor. The platforms have automated matching algorithms that connect borrowers with the best fit lenders leading to quick turnaround times on loan decisions. The platforms are also easily accessible via digital and mobile channels with decisions made instantly and disbursement made between 2-3 days of application.

Business models

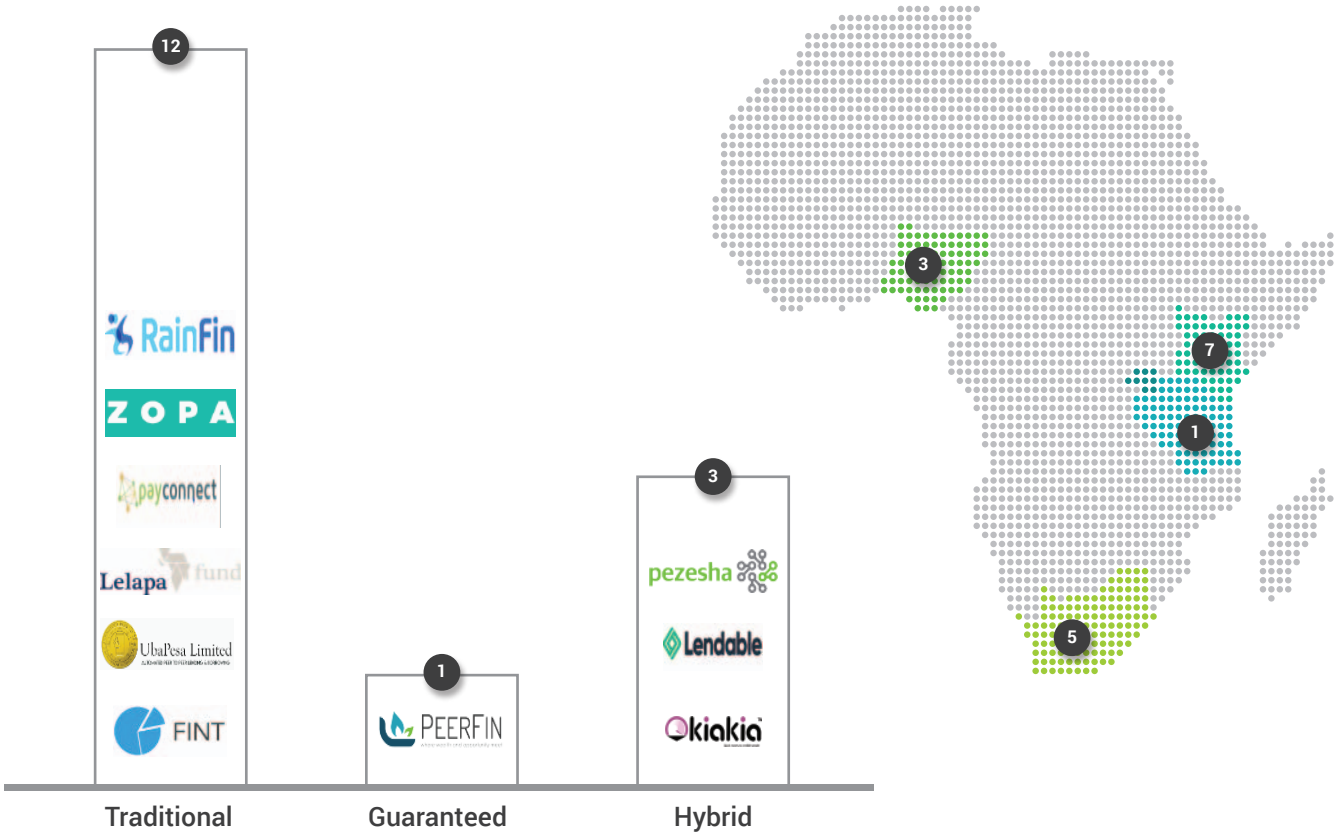
Three key business models have emerged globally:

Traditional model	Guaranteed model	Hybrid model
These platforms function as an intermediary. They display the profile and credit score of a borrower and allow the lenders to interact directly with the borrowers, select the loans to fund and own the loans. The biggest proportion of the identified innovators adopt this model.	These are platforms that provide guarantees by either bearing the credit risk or partnering with a credit insurer. To minimize their own risk, some of these fintechs also insist on collateral from the borrower. Peerfin based in South Africa was the only identified innovator in this category.	These are platforms that lend and retain loans on their own balance sheet in addition to the funding provided through the marketplace.

The hybrid model was identified as the most innovative model. Credit scoring models deployed by peer to peer start-ups are untested and often fail to attract sufficient investor interest. Therefore, by providing part of loan amount from their own balance sheet, these players offer greater confidence to the lenders. Innovators like Lendable and Pezesha have adopted this model. Pezesha currently has 200+ investors and has been experiencing a 50% year-on-year growth.

A total of 16 P2P platforms were identified across the focus countries; 7 operating in Kenya, 5 in South Africa, 3 in Nigeria, one in Tanzania and none in Rwanda.

Figure 10: Overview of peer to peer lending innovation models across SSA[84]



[84]Intellecap analysis based on secondary and primary research.

Feasibility

The potential for P2P and crowdfunding models in Africa is estimated at $2.5 billion, with only $38 million facilitated by P2P platforms between 2013 and 2016[85].
With only 16 innovators identified across the focus countries, a huge potential remains untapped. Most of the innovators identified offer both consumer and business loans with only 20% offering business loans only. Consumer loans range between $50-$3,000 over a period of up to 6 months, while business loans of up to $7 million are offered with repayment periods of up to 2 years.

P2P platforms generate revenues from multiple sources including one-off origination fees charged to borrowers (2-8% of loan request), 2.5% to 3% servicing fee charged to investors on their monthly earnings and additional charges such as late repayment penalties, verification and registration fees. This translates to APRs of between 15-20%.

The reliance on digital marketing and acquisition through platforms such as Google and Facebook significantly increase the cost margins for these lenders.
The high digital cost has seen a number of innovators adopt a hybrid model. Pezesha, for example, relies on field agents to acquire customers. The cost components for the platforms are sales and marketing (30-35%), origination and servicing (15-20%) and product development and technology infrastructure (15-20%). Peer to peer lenders are more suitable for segments that generate repeat business (e.g. payday loans) as cost of acquisition in this case is reduced.

Scalability

P2P platforms in the focus countries provide access to small ticket consumer and business loans serving a significantly underserved segment of the population.
P2P lending in developed markets like South Africa has also witnessed expansion into mortgage and other asset classes indicating the potential to scale into new segments. The platforms have the potential to serve more than 100 million individuals and 40 million businesses in the focus countries[86], and target both the banked and unbanked population.

P2P platforms have the potential to link lenders and borrowers across geographies with minimal requirements to set up offices.
Access to internet, however, remains key. Some innovators like Pezesha use USSD and text messages to capture the population that lacks access to internet with mobile money and bank accounts used for disbursement and repayment. Globally, a number of platforms including Funding Circle and Funding Societies have scaled across several countries, indicating potential for replication. None of the identified innovators in the focus countries has however, scaled to multiple countries.

P2P lending volumes growth in Africa has averaged 300% in the past few years[87], indicating high uptake of the innovation mainly driven by players in South Africa, Nigeria and Kenya.
Some key examples include Pezesha which has a customer base of over 6,000 borrowers and over 200 lenders, and has been experiencing a 50% year-on-year growth with $1 million disbursed from 2016 to date.

The innovation faces minimal funding constraints by attracting a wide array of investors to the platforms.
Given their role as intermediaries, the platforms are not required to cover credit risks with minimum capital as banks do and thus these lenders can grow their portfolios without having to invest equity. P2P platforms across the countries have cumulatively raised less than $5 million mainly in seed and angel rounds[88].

[85]The 2nd Annual Middle East & Africa Alternative Finance Industry Report. Accessible here
[86]Intellecap analysis
[87]Intellecap analysis
[88]Funding data based on publicly disclosed deals

P2P platforms have automated matching algorithms that connect borrowers with the best fit lenders leading to quick turnaround times (TATs) on loan decisions and thus generation of a high number transactions.
The platforms are also easily accessible via digital channels with decisions made instantly and disbursement made between 2-3 days of application.

Sustainability

Globally, P2P platforms have attained relatively larger scale than other lending models in terms of customers served and the quantum of funds disbursed.
Some key examples include Lending Club, Prosper, Funding Circle and Upstart. Lending Club, for example, has disbursed $44 billion to 2.5 million customers since launch in 2007[89].

The biggest value proposition that P2P lenders present to their investors is the ability to assess the risk level of borrowers.
To achieve this, P2P lenders adopt non-traditional and credit bureau data scoring models. NPLs thus remain high (over 10%) as these lenders continue to refine scorecards based on experience and new data obtained.

Clear guidelines, especially on fraud and money laundering, are key in enhancing the sustainability of the innovation.
A lack of clear P2P regulatory guidelines especially in Kenya, Tanzania and Rwanda can create uncertainty which discourages investors from coming onboard. Clearer guidelines on fraud and money laundering will thus be key in building investor confidence. In South Africa, and to some extent in Nigeria, P2P lending is regulated by the national credit and banking law that puts restrictions on the fees, interest and other charges that may be levied by a lender.

Severe P2P fraud cases previously witnessed in developed countries like China and the USA have had damaging effect on the industry with billions of dollars stolen from investors

[89]https://www.lendingclub.com/

CHAPTER 8: EDUFINTECH (DIGITAL EDUCATION FINANCE)

Digital education platforms present frameworks for underwriting both students and parents, to facilitate financing of student needs.

Globally, digital education platforms have emerged to finance student needs, as well as provide student debt literacy and facilitate faster repayment of loans.
While most of these platforms have focused on financing tuition fees, innovators like Cicil based in Indonesia enable students to purchase products such as laptops to support their study, in addition to supporting their travel and housing needs. Student Loan Hero and Gradible based in the USA support students in organizing, managing and repaying their loans including reminders on when the loans are due. Gradible also enables students to generate income from activities such as blogging and writing articles, which is credited to the student loan account.

The platforms leverage alternative data-based underwriting frameworks to assess credit risk.
Platforms offering student loans, like Prodigy Finance, incorporate student alternative data which include exam scores, class attendance, type of course and future earning potential. Some of the data points (e.g. type of course) assist in predicting the marketability of the student in the job market and thus ability to pay. Student Finance Africa (SFA), one of the pioneering digital education lenders in Kenya, also incorporates demographic, geographic, financial, social media and mobile wallet data of the parents to assess credit risk and determine credibility of a borrower.

Digital education platforms offer extended grace periods and flexible repayment terms.
The nature of education finance requires longer financing tenors as the benefits of education are not reaped immediately. These platforms offer longer term financing (5-20 years) with flexible repayment terms selected by the borrower. Prodigy finance for example offers up to a six-month grace period. SFA's business model requires borrowers to make small payments over the course of their studies as a way of building a credit profile, with the bulk of the money paid once the student gains employment. Income share agreements where students pay a fixed proportion of their income over a predetermined period of time post-graduation have also been adopted by companies like Lumni.

Some global innovators have also emerged to offer education loan consolidation and refinancing for graduates.
Platforms like SoFi and Common Bond in the USA provide refinancing and consolidation of student loans where graduates are able to consolidate all the loans they acquired while studying and retain one loan at cheaper interest rates and revised tenors determined by the monthly repayment agreed upon.

Business models

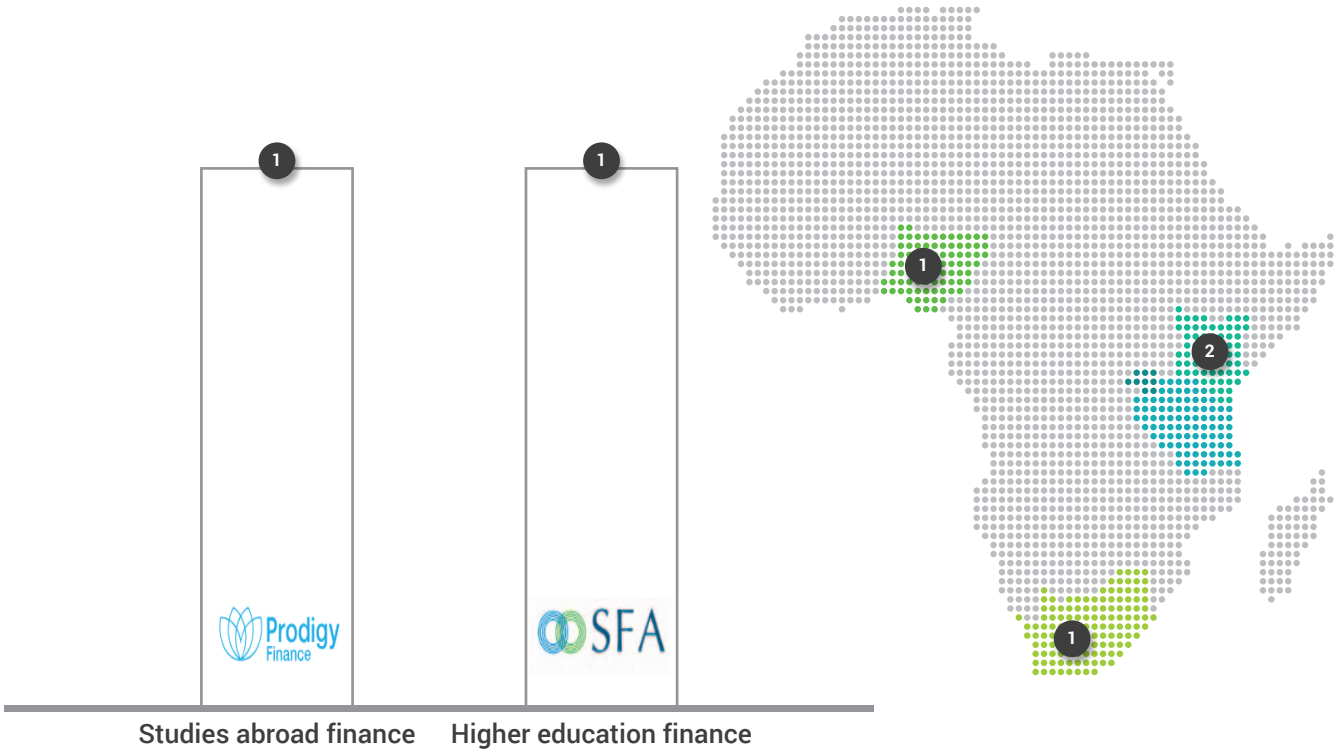
Across the globe, three key business models have emerged based on the level of education finance:

Higher education finance	Studies abroad finance	Skilled/vocational courses finance
These platforms finance graduate studies in local schools. SFA, based in Kenya, was the only innovator identified under this category. The company currently finances students in Moringa School and Kenya College of Accountancy (KCA).	These platforms finance students undertaking graduate and post-graduate studies in international schools based in the USA and UK. Prodigy finance was the only innovator identified across the focus countries. The innovator finances students across 150 countries to undertake studies in any of more than 600 partner institutions across Europe and America[90].	These platforms finance short-term vocational training, such as carpentry, masonry and welding.

Financing for skilled/vocational courses is emerging as a key innovative model for financing education given the high levels of unemployment and the need for technical and vocational training. A number of innovators have been witnessed globally and such can be replicated in the focus countries. These include Grayquest, based in India, which is mainly focused on financing vocational courses of up to 6 months.

The research identified only two innovators operating across the focus countries; two in Kenya and one in both South Africa and Nigeria[91].

Figure 11: Overview of digital education financing innovation models across SSA[92]



**Prodigy Finance is an international innovator that finances students from several countries including South Africa, Kenya and Nigeria.*

[90]Prodigy Finance website
[91]The sum of innovators across countries is more than 2 since some innovators operate across several countries but are accounted as one in the total.
[92]Intellecap analysis based on secondary and primary research.

Feasibility

There exists a shortage of more than $1 billion annually[93] in tertiary education finance across the focus countries.
Education remains one of the most grossly underserved sectors in Africa, despite the huge market opportunity. While a number of scholarship and bursary opportunities exist, these are only accessible to a few students. Education finance is mainly accessed as a normal retail loan, which presents a big disadvantage to the borrowers given the repayment terms (immediate equated monthly installment) and the underwriting process that requires collateral and credit history. Despite the huge market gap that exists in education finance across the focus countries, digital education innovators are almost nonexistent - with the biggest barrier to entry being the lack of access to adequate patient capital. Other challenges like high levels of unemployment and teacher strikes make the sector unattractive to both innovators and investors.

Due to the social nature of the education sector, global innovators charge low annual percentage rates (APRs), ranging between 7-10%. The innovators generate revenues from one-off origination fees charged to students and a monthly interest rate in addition to late repayment fees. SFA charges higher APRs of 18%.

Existing global innovators demonstrate cost-to-income ratios ranging between 25-35%.
A significant proportion (20-30%) of the cost is spent on marketing and acquisition, which is managed through partner institutions. Due to the unpredictability of education financing, platforms lending from their own balance sheets attract high cost capital.

Scalability

The innovation enables financing for students who remain largely underserved.
There are currently approximately 12 million tertiary education students across the focus countries, with an increasing (4.3%) gross enrollment ratio[94]. The innovation also has potential to provide access to financing for vocational skills as well as lower levels of education. However, with only two innovators operating across the focus countries, the uptake of digital education finance has been low. SFA has only managed to finance 60 students with loans averaging $1,000 and has highlighted lack of access to patient and long-term capital as the main barrier to scale.

The replication of education finance platforms largely depends on the willingness of partner education institutions to collaborate with the lenders.
The lenders rely on accurate and credible student data from the partner institutions for underwriting, thus the ability to find institutions with proper record keeping systems is key for scaling the innovation. Financing can also be done across geographies with minimal requirements to set up physical offices. Global innovators like Prodigy Finance offer loans to students across over 150 countries with only three country offices.

Education platforms require a high amount of patient capital given the structure of the loans.
Student loans have tenures of between 5-20 years, and thus the platforms require long-term investments to match this need. Global innovators have come up with innovative models to raise funding that can be leveraged in the focus countries. Common Bond and SoFi obtain financing for students through the marketplace model that provides financing options from multiple lenders. Prodigy Finance on the other hand mobilizes funding from its alumni network at relatively cheaper rates than the traditional investors. Such models help to lower the cost of funding which is a big barrier to the feasibility of the innovation in the focus countries.

[93]United Nations Educational, Scientific and Cultural Organization Database. Accessible here
[94]United Nations Educational, Scientific and Cultural Organization (UNESCO) Database. Accessible here

Sustainability

A number of global success cases exist in education finance which indicates sustainability of the model.
Education finance platforms like Prodigy Finance, SoFi, and Common Bond have scaled across various geographies serving a large number of students. SoFi for example has facilitated over $8 billion of loans to more than 500,000 borrowers[95]. Prodigy finance has supported more than 14,500 students and disbursed close to $737 million since establishment in 2007[96].

Although NPLs have been low, the inability to guarantee repayment has been a deterrent to investors.
As a guarantee of repayment, the platforms withhold education certificates until the borrower repays. Grayquest also gets a repayment guarantee/tie-up from the schools. Such restrictions have helped to maintain low NPLs at between 1-3%.

> *"One of the biggest challenges facing education finance is the inability to guarantee repayment given the low employment opportunities; this acts as deterrent to investors unless significant traction has been achieved"*
>
> ***Student Finance Africa***

The social nature of the sector attracts government and development community support which can drive sustainability.
Developed countries like USA offer rebates to individuals on interest incurred on student loans[97]. Such government support can boost performance of education innovators as a result of increased uptake.

The need for education financing every semester generates continuous business for the lenders throughout the students' school life.
The lenders engage the students until completion of their studies and thus generate repeat business on a regular basis.

[95]https://www.sofi.com/
[96]https://prodigyfinance.com/
[97]https://studentaid.gov/resources/tax-benefits

CHAPTER 9: CONCLUSION AND RECOMMENDATIONS

The research identifies emerging and innovative models addressing financial inclusion and financial services access challenges. However, these models perform differently when viewed through a feasibility, scalability and sustainability lens.

Key implications and way forward

Social value of innovations

Innovations that generate borrower data, reduce transaction costs and encourage repayment all address factors that contribute to a high cost of credit.

While the innovations assessed address one or some of these factors, bringing down the cost of credit remains to be the key objective. Most innovators are trying to serve "riskier segments"[98] and still testing their scorecards and hence are unable to bring down the lending rates. Although digital lenders like Tala and Branch leverage technology to lower operational costs, they face external and internal challenges like high cost of capital and high NPLs and thus charge high interest rates (up to 15% per month) to cover themselves against loss. Innovations that, for example, provide access to cheaper capital for the lenders, can help address these challenges. However, whereas telco based lenders like KCB M-Pesa and M-Shwari are able to leverage bank partnerships to access funds at a much lower rate, they too have been unable bring down interest rates.

Telco based lending has been by far the most successful innovation in increasing household access to finance. This has, however, resulted in increased indebtedness.

The widespread penetration of mobile money and easy access to mobile loans has played a big role in the success of the innovation with over 30 million people subscribed for telco-based loan products. On the flip side, the ease in access to credit through mobile phones has increased levels of indebtedness among borrowers, with 35%[99] reported to be borrowing from multiple lenders.

> *"3% of digital borrowers borrow to repay another loan"*
> ***FSD Kenya***

Key innovations are increasing financing to the agriculture and SME segments.

Approximately 37%[100] of telco-based customers borrow to finance their businesses. In addition, about 26% are based in rural areas[101]. This is expected to increase further as innovators continue to customize their offerings based on data collected. Scoretechs have also been instrumental in enabling financing for the agri-segment and although initial NPLs have been higher than traditional lenders, continued testing of the algorithms is key in improving the performance. PAYG presents untapped potential for financing agriculture equipment like tractors and irrigation pumps. In addition, invoicetechs provide quick access to working capital financing but are currently constrained by inadequate capital for on-lending.

Data protection and consumer privacy

The identified innovations leverage personal data to create financial identities against which lending decisions are made. This, however, has implications on human rights, privacy and identity. Particularly, there has been an increase in cases of data breach, with some of the innovators accessing data without the consent of the customer and/or continuously using customer data even when the customer is not using their services. This therefore calls for regulations that bind innovators to use the data accessed prudently.

[98]Consumers with no collateral, credit or banking history
[99]FSDK - The Digital Credit Evolution in Kenya: An assessment of the market demand, 2018
[100]FSD Kenya - The Digital Credit Evolution in Kenya: An assessment of the market demand, 2018
[101]FSD Kenya - The Digital Credit Evolution in Kenya: An assessment of the market demand, 2018

Opportunity and way forward for the innovators

While demonstrating promising future potential, the innovations researched face a number of internal and external challenges. The following areas of opportunity exist to contribute to alleviating these challenges:

Graduate to hybrid models: Most innovators, especially lending aggregators and peer to peer lenders leverage digital marketing for customer acquisition. This significantly raises their cost of operations and impacts their business feasibility. Digital marketing-based acquisition costs account for 5-10% of asset on average, for low ticket loans, compared to traditional physical costs of branch at 3-6% of asset value. A hybrid model which involves use of field staff equipped with tablets/mobile phones to enable an assisted digital application model especially in rural areas, can boost the acquisition, conversion rates as well as reduce the cost of acquisition of the innovators without impacting data quality.

Stronger collaboration with financial institutions: The success of some of the innovators like lending aggregators and scoretechs is dependent on conversion by lending partners. However, most credit providers deploy their existing products and processes even while working in partnership with fintech innovations. This impacts the speed and conversion rate that the innovation can finally deliver to the customer. Thus, to support the growth and efficiency of the partnerships, FIs need to introduce differentiated products and processes, managed through separate business lines.

Leverage emerging technologies: Emerging technologies like blockchain have the potential to reduce fraud risk, which is a challenge facing the innovations today, especially invoicetechs. This technology is being adopted globally by leading invoicetechs to create greater customer and investor confidence and should be adopted by innovators in SSA as well to ensure sustainability of their business models.

Diversify to new segments: PAYG and telco-based lenders are slightly vintage innovations that have been reasonably successful in East Africa yet failed to scale significantly due to their segment and geographical focus. PAYG presents highest potential for expansion into new customer segments and sectors through agriculture equipment financing, consumer goods financing, and small business equipment like sewing machines. There is also an opportunity for telco-based lenders to leverage data and their bank partnerships to build unique customized product propositions for the agriculture and MSME segments.

Leveraging P2P model in conjunction with other innovations: Most innovators, especially education finance and invoicetechs lend from their own balance sheets and are therefore constrained by lack of capital or high cost of capital, which hinders scalability significantly. The innovators should explore graduating to peer to peer or hybrid models to eliminate such constraints.

Play a larger workflow: Lending aggregators and scoretechs need to expand and offer end-to-end services that include customer acquisition, risk assessment, servicing, and collections in order to generate higher revenues.

Understanding the customer's digital behavior can enhance the debt collection process for both digital and traditional lenders. Innovations that leverage technology to study consumer behavior and digitize the debt recovery process for consumers with a digital presence would help lower NPLs. Such innovations use machine learning to create a personalized debt collection process customized for each customer, enhance interactions with the defaulting customers with predictions on the right communication channel, empathize with the customer and enable renegotiation of debt. They offer a more efficient and cost-effective way of collecting debt than the traditional bill collection services. Such innovations have already been established in countries like Brazil (Adimplere), and USA (TrueAccord) and could be replicated in the focus countries.

Ecosystem enablers

Further, putting in place a supportive and enabling environment will be crucial in enhancing feasibility, scalability and sustainability of the innovations.
Various support areas were identified across the innovations and which will require deliberate efforts from governments, development institutions and other ecosystem players.

Building human resource capacities: Human capital was identified as a major challenge facing the innovators with a shortage of key skills like software engineers and data scientists. Further, the available resources are very expensive and high competition exists for the same resources within established technology companies. Innovators are increasingly adopting an in-house training model where they identify aspiring talent in schools and build their capability. More practical training in science and technology institutes and linkages with the business community through internship programs need to be advocated.

Need for patient capital or grants, and investment loss guarantees: Some of the innovators like education finance offer long term loans with revenues not generated immediately and are thus not able to meet their financing repayment requirements in the short term. Such models require support from government and development institutions in providing grants and facilitating provision of patient capital through loss guarantees.

Enabling regulatory frameworks: Regulatory frameworks that promote innovation and competition and incorporate traditional mandates of financial stability and consumer protection are key in enhancing the feasibility of the innovations. Regulatory sandboxes that enable innovators to test and refine products with temporary regulatory approval are very useful in this regard. Across the focus countries, only Tanzania is yet to set up a regulatory sandbox. While this is a move towards the right direction, more clarity also needs to be provided especially on investor protection, fraud and money laundering to enhance investor confidence.

Costly and inaccessible APIs: Access to appropriate data required for assessment of customers continues to hinder the operations of the innovators.

Consumer financial literacy and need for responsible credit: While the innovations serve a big market gap and enable access to finance, some of the innovations have also led to rise of over-indebtedness which overburdens the borrower and affects sustainability of the models. There is therefore a big need for ecosystem supporters to carry out vigorous customer financial literacy as well as push for responsible lending practices among the innovators.

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Annex 1: List of Global Credit Innovations Identified

#	Innovation	Description
1	Online nano lenders (Balance sheet consumer lending)	**Use of alternative data to offer customised digital products for the low-income individual consumers** These platforms leverage alternative data like social media data and activities, mobile wallet transaction data, to undertake credit assessment and determine loan limits. They lend from their own balance sheet with most of them receiving funding from private investors. These platforms offer loans ranging from USD 2 - USD 700 mostly targeting individual low-income earners and micro enterprises with upselling of the loans done depending on the repayment levels.
2	Online business lenders (Balance sheet business lending)	**Use of alternative data to offer customised digital MSME loans** These platforms target lending to the MSME segment and use alternative data like online bank account activity, business accounting software information to assess the credit worthiness of a business and offer digital unsecured loans from their own balance sheet. MSMES are able to digitally apply and get instant short-term working capital finance from these platforms.
3	Non-financial/telco based nano lenders	**Leveraging partnerships to offer lower priced digital loans using alternative data** These platforms leverage partnership between Financial Service Providers (FSPs) and Mobile Network Operators (MNOs) where MNOs provide access to mobile wallet transaction data for credit assessment and FSPs provide the funding and interest earned on the loans is split between the two players. There loans are priced lower than the online nano lenders since they rely on cheaper funds from the public which is provided by the banks.
4	Instant merchant cash advance	**Using digital merchant transaction data to offer customised instant loans** These platforms offer payments infrastructure that enable merchants to receive payments from various channels including debit, credit cards and mobile money. These platforms leverage the payment transaction data collected to offer instant, customised and unsecured loans to these merchants. By factoring customers' electronic receivables, the platforms can anticipate their repayment capacity and recognize any unusual or suspicious variations. This transforms a customer's transaction history into a pseudo-credit history.
5	Digital savings circles	**Digitizing group saving and borrowing** These platforms enable individual members of a chit fund/savings group to save, borrow and lend in trusted digital groups and achieve their financial goals.
6	Digital education finance	**Using student and parent data to underwrite and offer customised digital education loans** These platforms leverage student (including exam scores, class attendance) and parent data to assess credit worthiness and lend to students. They generate credit scores that are used to determine loan limits. Borrowers are also allowed to make small payments over the course of their studies as a way of building a credit profile with the bulk of the money paid once the student gains employment.

Annex 1: List of Global Credit Innovations Identified

#	Innovation	Description
7	Pay as you go model	**Use of internet of things and mobile money to enhance ownership of consumer goods over time** In this model consumer goods providers essentially rent their goods to the consumers whereby consumers make an initial deposit and pay the remaining amount through mobile phone over a stipulated time and frequency (daily, weekly or monthly). Borrowers own the product/system when final payment is made. The use of mobile phones reduces the collection costs faced with collecting such low values. The borrower makes pre-payments for use of the system/ products. The model leverages emerging technologies like IoT to switch off the product/system whenever a consumer/borrower misses to make the agreed upon instalment (restricting use) and switches back the system when payment is done. This model also enhances product bundling where the company offers a variety of packages with a number of products (TVs, radio, mobile phone, home lights etc). Consumers/borrowers can also be upscaled to higher packages based on their repayment history.
8	Online invoice discounting/Invoice market places	**Providing digital loans against outstanding invoices enhancing supply chain and cash flow management for SMEs** These digital platforms that purchase invoices or receivable notes from a business (at a discount). These platforms provide an affordable and swift solution for businesses to convert unpaid or outstanding invoices into cash, helping them manage their supply chain and ease pressure on an already tight cash flow. They provide a simple digital application process that don't require the SMEs to visit an office compared to the traditional invoice discountingInvoice marketplaces provide a digital market place where SMEs can auction their outstanding invoices and get access to instant cash. The auctioning helps SMEs get the best discount rate due to the diverse investors on the platform.
9	Non EMI based equipment financing	**Customising repayments to the borrower's income cycle** These platforms provide equipment to farmers and recover the payments when the farmer sells the produce. The platforms have established partnerships with the buyers (wholesalers, processors etc.) and are thus able to recover payments directly from the buyers.
10	IoT enabled asset financing	**Leveraging internet of things to reduce the risk of loan default for assets** These innovations leverage Internet of things and GPS technology to limit risk of loan default. In case of a motor vehicle, an IoT device is installed in a newly financed car that can identify the location of the car and deactivate the engine if a customer repayment falls overdue. In this way, the lender limits the its risk and expands the customer base.
11	Instant home financing	**Using alternative data to make instant decisions on home financing** These platforms automate the application process and make instant decisions on home financing leveraging alternative data. These platforms reduce cost of application, assessment and valuation that are often faced in traditional methods and make direct lending from their balance sheet.
12	Digital credit cards	**Using alternative data to inform credit limits in real time** These platforms use advanced machine learning techniques for a real-time credit assessment using data such as buying patterns, digital footprint, social media information, and device information. The user is then provided a credit limit in real-time, which can be used to pay for products and services at both online and offline stores.

Annex 1: List of Global Credit Innovations Identified

#	Innovation	Description
13	Alternative data credit scoring (scoretechs)	**Use of alternative data to underwrite and serve previously underserved segments** These platforms use non-traditional digital data including mobile wallet transactions, social media profile and activities, GPS data among others to assess the customer's credit worthiness. Such platforms generate a scores that determine how much a borrower qualifies for. In some cases, alternative data credit scoring is outsourced to scoretechs (platforms that generate credit scores on borrowers and sell the scores to lenders) while in some cases the credit scoring is done internally by the lenders (direct/balance sheet lenders). Agri specific scoretechs also incorporate satellite and weather-related data in the assessment.
14	Crypto currency backed loans	**Leveraging virtual currencies as security against loans** These platforms enable lending in foreign exchange currencies against cryptocurrencies. Some of existing platforms act as a marketplace connecting owners of cryptocurrencies to potential lenders using the cryptos as collateral while some lend from their own balance sheet.
15	Behavior and character based scoring	**Using a borrower's behavior and character to underwrite and create a risk score** These platforms leverage behavioral biometrics to authenticate customers through the unique ways they type, swipe and hold their devices. Behavioral biometrics uses continuous machine learning and real-time feedback to create a risk score, allowing lenders to separate good users from bad actors by detecting anomalies in behavior. Character scoring platforms work with the assumption that personal character is a critical factor for good borrowers' behaviors, and can look beyond financial situations to better assess a borrowers' ability and willingness to repay. These platforms base their assessment on psychometrics like personal attitudes and traits, related specifically to the "psychology of debt".
16	Veritechs/ online verification/credit investi-	**Automation of document and borrower verification process to quicken the lending process** These platforms automate the verification processes and provide real time insights, e.g. financial documents verification during loan application. They also provide background searches for individuals, helping lenders make informed decisions on the borrowers. These platforms have the potential to help reduce fraud, automate KYC checks and improve the on-boarding exercise.
17	Social network powered finance	**Using digital guarantees/commitment from a borrower's social network to make lending decisions** These platforms leverage sponsorship from a family member or friend to a borrower to make lending decisions. The sponsorship includes making a commitment to pay a certain amount if the borrower defaults - this increases the likelihood that the borrower will repay the loan.
18	Open Banking/API	**Enabling access to digital customer banking information for credit underwriting decisions** Open APIs allow third parties to fetch customer data from bank computers and even initiate transactions. Some platform has been built to allow fintechs to access customer's banking information and charges fee for access to the APIs, this saves the fintechs the need to design their own integration. With open banking, third parties can start to use banks as an invisible back office for their financial services, disrupting traditional banking relationships.
19	Admintechs	**Reducing operational costs by enabling digital disbursement and collection** Platforms that offer banking/payments infrastructure which allows lenders to avail their products through digital means (mobile app/ web/ USSD). These platforms offer administration, disbursal and collection support reducing the operational costs for the lenders and enhancing customer experience by eliminating the need for borrowers to physically visit the branches.

Annex 1: List of Global Credit Innovations Identified

#	Innovation	Description
20	Lending aggregators and search engines	**Reducing the search costs by aggregation and enabling comparison of loan products** These platforms provide a one stop digital shop where borrowers are able to compare loan products from different financial institutions and make informed decision. Some of the platforms also allow the prospective borrowers to apply for instant loans to the selected lenders. This enhances the customer experience as they don't have to spend a lot of time moving to the branch. Lending aggregators lowers the search customer acquisition costs for the traditional lenders by enabling borrowers to interact directly with the lenders products.
21	Crypto Banks	**Digital banks facilitating crypto based financial transactions.** These are digital banks established for the crypto community, which allow clients to undertake various activities in cryptocurrencies such as receive and send funds, make deposits, receive loans and credits. These banks banks are also enabling payment at merchants that accept cryptocurrencies.
22	E-Commerce platforms	**Leveraging the wide customer base and customer data generated by E-commerce platforms to advance credit** Platforms wherein credit is not the core business, but that leverage their digital distribution, strong brand, and rich customer data to facilitate access to finance through partnerships with financial service providers or from their own books. These platforms help aggregate financial products for their merchants with the objective of helping them expand their businesses. Borrowers can apply for funding through the platform.
23	Digital/Neo- banks	**Bringing 24-hour services to the customers through branchless banks** These are banks whose operations are all digital and have no physical branches. Digital banks provide customers with easy access to bank services whenever needed. They also reduce the need to physical visit the branches as all the services are available online. The digitization of all the process helps lower operating costs which ultimately result in to lower interest charged on loans and higher interest on savings. These banks allow customers to login using face and voice recognition.
24	Pre-approved loans	**Leveraging alternative data to customize, approve and offer loan products to customers in advance** This is the process of leveraging alternative data to determine how much credit a customer qualifies for and communicate the same to the customer through text messages as a way of marketing the loan products. Digital lenders also leverage this to upsell the loans once a customer repays.
25	Chat bot enabled customer onboarding and lending	**Leveraging virtual conversations with a customer to approve and extend credit** Traditionally used to enhance the customer experience by enabling FSPs to respond to customer queries immediately and on the go, chatbots have revolutionalised to enhance customer origination and preapprove loans based on the interactions with the customers through various social platforms.
26	Digital debt renegotiation/collection	**Enhancing the debt collection process through understanding of customer behavior** These are platforms that use algorithmic machine learning to study consumer behavior and digitize the debt recovery process for customers with a digital presence. These platforms customises debt collection by approaching customers through familiar channels e.g. via email, SMS, or social networks. These platforms also create an opportunity for the customers to settle the debts immediately e.g. through payment links.

Annex 1: List of Global Credit Innovations Identified

#	Innovation	Description
27	Empathy engine based financial services	**Using user centric design to empathize and customise products based on customers' needs and situation** These platforms enable financial institutions to understand the needs of their customers through voice or text services. Such platforms have built algorithms that holistically analyze the data in context to the conversational intelligence data between the financial institution and the customer to calibrate intangible perceptions, behaviors, interests, limitations, potential and aspirations to empathize with consumers.
28	Lending as a service (LaaS)/ Software as a Service (SaaS)	**Providing software services that enhance digital lending** These platforms provide banks and other lenders, prebuilt components including API connectors, Credit analytics, Customer application & onboarding workflows, Invoice management, User & account management, Data transformation & mapping, Reports and Dashboards to enable digital transactions.
29	Digital consumer journey mapping	**Understanding a customers' financial journey to inform lending decisions** These platforms use user-centric design thinking to develop solutions that guide people to take optimum decisions when financing their dreams. The SaaS solution can efficiently and quickly capture a customer's, new prospect or existing client, financial situation (KYC) to immediately engage him or her in relevant and exciting life solutions. Such solutions help capture every aspect of a person's life, including: salary, expenses, education costs, job progression, retirement, wedding, properties, investments, and insurance into a digital collaborative space.
30	Peer to peer lending platforms	**Virtual marketplaces that connects potential lenders with borrowers that meet their requirements** This is a virtual market place that convenes many borrowers and lenders. These platforms facilitate the provision of digital credit/loans by matchmaking the borrowers and lenders, typically playing an ongoing central role in the relationship between these parties in return for a fixed origination fee. This reduces the high search costs that traditional lenders and borrowers often face by digitally connecting the borrower to the best fit lender. They include, business or individual borrowers focused platforms. There are various business models arising under this innovation including; Traditional: These models allow lenders to interact with the borrowers directly and own the loans while the platform functions as an intermediary. Notary : In this model, the online platforms act as an agent to bring together creditors and borrowers, with banks or other financial institutions originating all Fintech loans . Guaranteed:These platforms provide guarantees on the principal and/or interest on loans. Own lending: In this model, platforms lend and retain loans on their own balance sheet either fully or partially. Asset backed: These are peer to peer platforms that require the borrower to provide security against the loan which gives more confidence to the investors.
31	Crowdfunding platforms	**Virtual marketplaces that eliminate the need for regular repayments** These platforms function like the P2P platforms with the major difference being in the form of financing provided. The financing can only be in the form of rewards (where investors would want to get the final product), donations or equity. The advantage is that borrowers are not required to make regular payments like you would for a bank loan.
32	Marketplace lending as a service (MPLaas)/ composite lending	**Providing a marketplace for alternative lenders** These technology platforms enable balance sheet lenders to distribute their loans to investors in a marketplace. MPLaas integrates with the existing infrastructure of balance sheet lenders which provides these lenders with access to investors that are seeking to invest in such loans. Simply, these platforms aggregate balance sheet lenders and links them with investors in a marketplace. These platforms also undertake loan assessment for the loan offered by balance lenders to ensure transparency for the investor and fair cost of funding for the originator/balance sheet lender.

Annex 2: List of Stakeholders Interviewed

#	Entity	Entity type	Country
1.	AB Bank Rwanda	Bank	Rwanda
2.	AEC Rwanda	MFI	Rwanda
3.	Airvantage	Fintech - Nano Lending	South Africa
4.	Alternative Circle/Shika	Fintech - Nano Lending	Kenya
5.	Anza	Accelerator	Tanzania
6.	Apollo Agriculture	Fintech - Direct Lending (Business)	Kenya
7.	Bank of Kigali	Bank	Rwanda
8.	Barclays Bank	Bank	Kenya
9.	Benefactor	Fintech - Invoice Discounting	Rwanda
10.	Bettr Finance	Fintech - Digital Banking	South Africa
11.	Commercial Bank of Africa	Bank	Rwanda
12.	CDC	DFI/ Investors	South Africa
13.	CS Advance	Fintech - Invoice Discounting	Nigeria
14.	Fab Lab	Accelerator	Rwanda
15.	FarmCrowdy	Fintech - P2P Lending/ Crowdfunding	Nigeria
16.	Fincheck	Fintech - Lending aggregators	South Africa
17.	Finfind	Fintech - Lending aggregators	South Africa
18.	Funding Hub	Fintech - Lending aggregators	South Africa
19.	Fundrr	Fintech - Direct Lending Business	South Africa
20.	GetPesa	Fintech - P2P Lending	Tanzania
21.	Global Partnerships	DFI/ Investors	Kenya
22.	GO Finance - defunct	Fintech - Invoice Discounting	Tanzania
23.	GT Bank	Bank	Kenya
24.	HFC Kenya	Bank	Kenya
25.	IFC	DFI	South Africa
26.	Incofin	DFI/ Investors	Kenya
27.	JumpStarter	Fintech - Crowdfunding	South Africa
28.	KCB Bank Kenya/ KCB M-Pesa	Bank	Kenya
29.	KCB Bank Rwanda	Bank	Rwanda
30.	KiaKia	Fintech - P2P Lending	Nigeria
31.	Kiva	Fintech - Crowdfunding / P2P	Kenya
32.	Kountable	Fintech - Invoice Discounting	Kenya

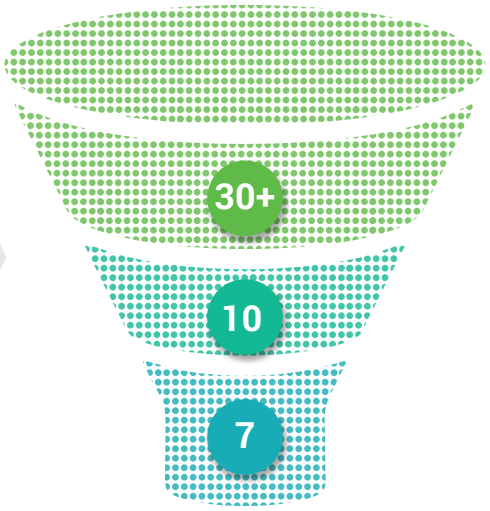
Annex 2: List of Stakeholders Interviewed

#	Entity	Entity type	Country
33.	Lendable	Fintech - P2P(Business)	Kenya
34.	Lidya	Fintech - Merchant cash lenders	Nigeria
35.	Mercy Corps	DFI/ Investors	Kenya
36.	Mobisol	Fintech - Pay As You Go	Kenya Tanzania
37.	Mwanga Community Bank	MFI	Kenya
38.	National Bank	Bank	Kenya
39.	Nordic Microfinance Initiative	DFI/ Investors	Rwanda
40.	Pesa Choice	Fintech - Scoretech	Kenya
41.	Pezesha	Fintech - P2P Lending	Nigeria
42.	PiggyVest	Fintech - Digital Investment /Savings	Kenya
43.	Proparco	DFI	Nigeria
44.	Riby Finance	Fintech - Technology provider	Nigeria
45.	Specta	Fintech - Nano Lending	South Africa
46.	Standard Bank SA	Bank	Kenya
47.	Standard Chartered Bank	Bank	Kenya
48.	Student Finance Africa	Fintech - Education Finance	Kenya
49.	Sumac Microfinance	MFB	Kenya
50.	Tala	Fintech - Nano Lending	Tanzania
51.	UBL Bank	Bank	Kenya
52.	Umati Capital	Fintech - Invoice Discounting	Kenya
53.	Unaitas	SACCO	Rwanda
54.	Unguka Bank	Bank	Kenya
55.	Venture Lift Africa	Fintech - Crowdfunding	Nigeria
56.	Zowasel/Growsel	Fintech - P2P Lending/ Crowdfunding	Kenya
57.	ZuriCap	Fintech - Invoice Discounting	

Annex 3: Innovations Shortlisting Process

The research followed a three step process to shortlist the top 7 credit innovations in the focus countries and assessed them across feasibility, scalability and sustainability parameters.

Secondary research to identify credit innovations operational globally and across the focus countries

Primary shortlising criteria:
Shortlisting of ten (10) innovations based on the quantum and severity of challenges the innovation is solving

Secondary shortlising criteria:
further shortlisting of 7 innovations based on a challenge and innovation score mapping