Bridging the credit gap for Micro and Small Enterprises through digitally enabled financing models

Full external report

January 2019

Dalberg

Disclaimer

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Introduction

- Digital payment and operation systems present an **enormous opportunity to improve the provision of credit** to micro and small enterprises (MSEs) in emerging markets

- Financial institutions, primarily fintechs and MFIs, are exploring the use of **digital tools**, such as merchant payments systems, online inventory ordering and e-invoicing, to **improve the origination, assessment, delivery and collection of credit from MSEs**

- Whilst the total amount of lending being delivered by innovative lenders using digital tools remains small, their approaches have real potential to help fill the trillions of dollars of unmet credit demand from MSEs

- This report provides an overview of the demand for credit from MSEs, the digital tools that innovative lenders are using and the choices available to these lenders to more effectively provide credit to MSEs

- It also outlines **four business model taxonomies where digital approaches have the potential to drive a significant reduction in the credit gap** that exists for lending to MSEs

THE CONTEXT

CGAP and Dalberg have conducted a global landscaping, to better understand how digital tools are being used to improve the provision of credit to micro and small enterprises (MSEs) in the informal and semi formal sector

There is a need to better understand disruptive business models and the opportunity they present for improving the provision of credit to MSEs

Situation

- There is USD 4.9 trillion in **unmet demand for credit** from small and micro enterprises in emerging markets*

- Digital disruption is enabling credit solutions that could play an important role in **meeting the financing needs of MSEs** in emerging markets

- Financial institutions (fintechs, MFIs and banks) are using digital tools to develop and improve business models; **few have reached scale**

Complication

- **Business models** using digital technologies for lending **are nascent**. There is a need to better understand these business models and the opportunities they present

- Private investors and commercial banks are not heavily involved in the use of digital technologies for lending to MSEs, with **limited understanding of the potential for these models**
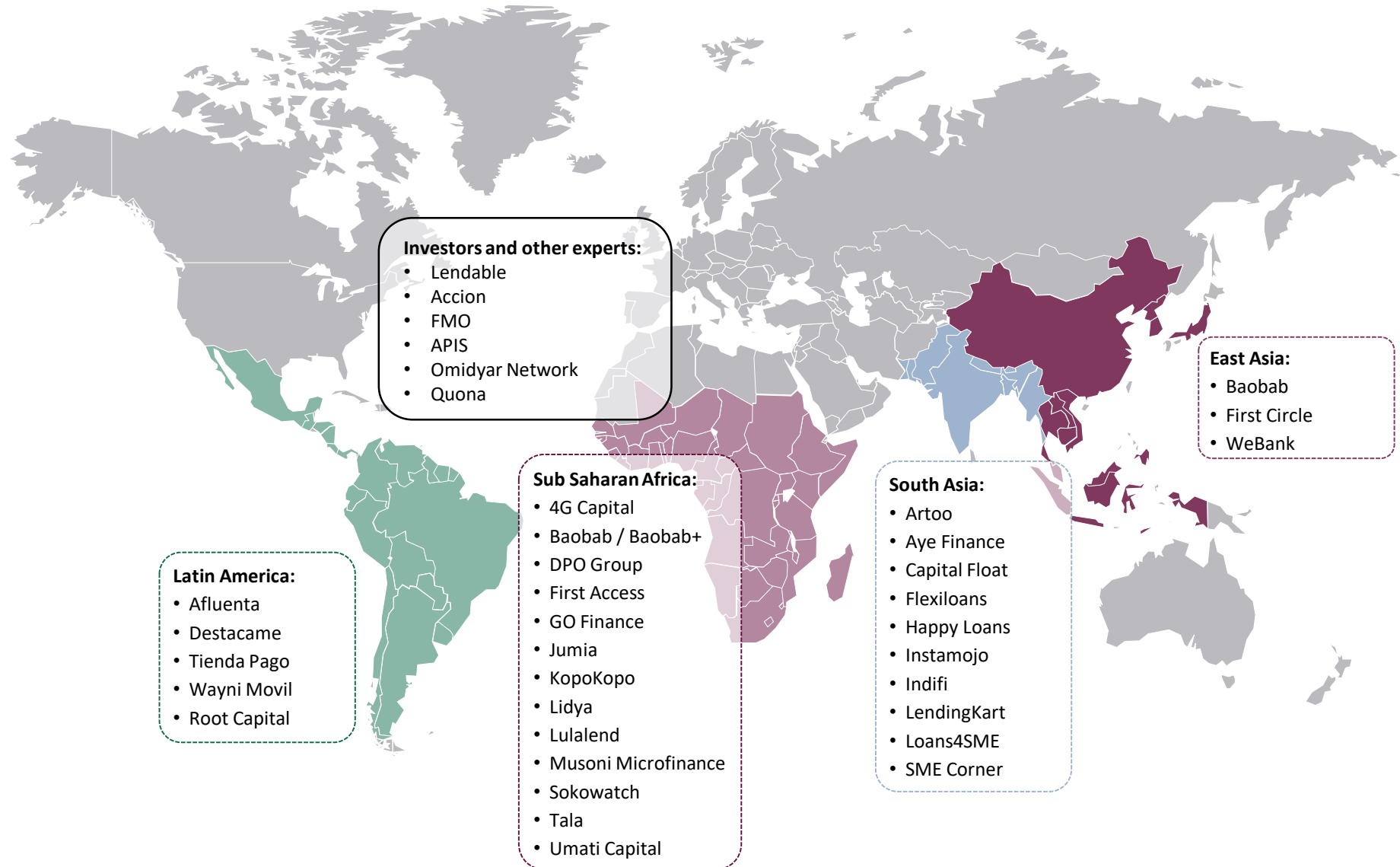
Objectives of study

- To outline the **different digital disruptions** that exist, and how they are being used to develop **new business model taxonomies** for improving the provision of credit to MSEs

- To outline the **potential market size and opportunity** for multiple 'high impact' business model taxonomies

- To highlight the potential drivers of success for business models that can improve credit provision to MSEs in emerging markets

Engagement output

- A **report** (in PPT) **for CGAP internal consumption**

- A **presentation** (in PPT) **for external consumption** to generate investor interest in digitally enabled credit solutions for MSEs

*The IFC released a report in 2017 advising an USD 5.2 trillion credit gap for MSMEs. Whilst there are minor variations in the methodology used to calculate credit demand in this report, the majority of the difference in the credit gap between the IFC and this report is explained by the exclusion of medium size businesses in our calculation. N.B. given a lack of available data, the total supply of credit for MSEs in this report is assumed the same as the supply for MSMEs, as reported by the IFC

Source: IFC: MSME Finance Gap, 2017

We have interviewed 37 organizations globally, all focused on creating business models that use digital means to improve credit provision to MSEs

Investors and other experts:
- Lendable
- Accion
- FMO
- APIS
- Omidyar Network
- Quona

East Asia:
- Baobab
- First Circle
- WeBank

Sub Saharan Africa:
- 4G Capital
- Baobab / Baobab+
- DPO Group
- First Access
- GO Finance
- Jumia
- KopoKopo
- Lidya
- Lulalend
- Musoni Microfinance
- Sokowatch
- Tala
- Umati Capital

South Asia:
- Artoo
- Aye Finance
- Capital Float
- Flexiloans
- Happy Loans
- Instamojo
- Indifi
- LendingKart
- Loans4SME
- SME Corner

Latin America:
- Afluenta
- Destacame
- Tienda Pago
- Wayni Movil
- Root Capital

*interview pending

These interviews have focused on better understanding the types of business models being developed, and their drivers and requirements for success

Topic focus

What are the different business models that exist, and how do digital tools support them?

What will drive business model success?

What external actions can strengthen these models?

Question focus

- What business models are being used and piloted?
- Which digital tools are being used and why?
- How are these tools contributing to the development of sustainable business models?
- What are the major benefits and challenges of these business model approaches?

- How do you ensure credit is used for the business?
- How do you track and collect data on business performance and needs?
- How do you ensure high customer retention?
- What are the optimal customer touchpoints?
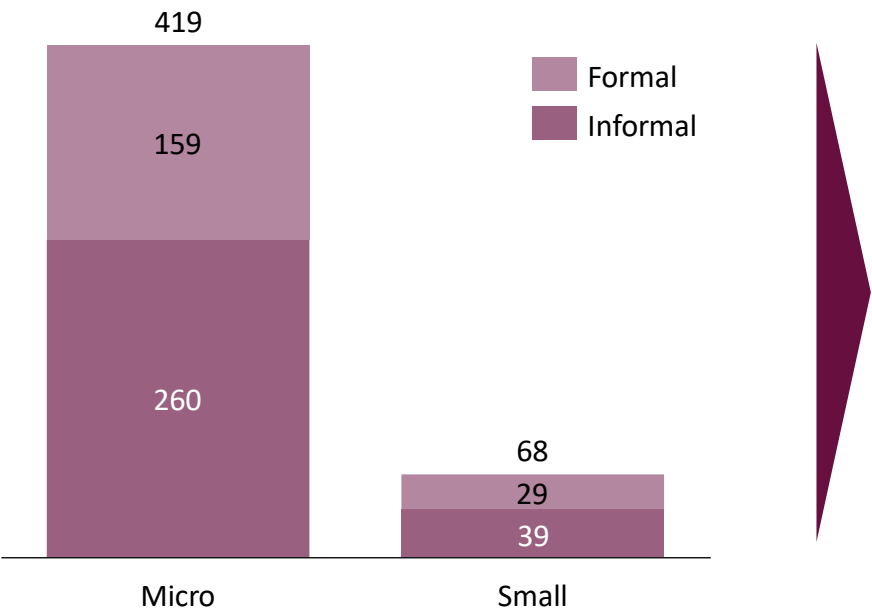- How do you define and measure unit economics?

- What are the ecosystem dependencies?
- What roles can partnerships play?
- What is the optimal regulatory environment?
- How do you best meet capital needs?
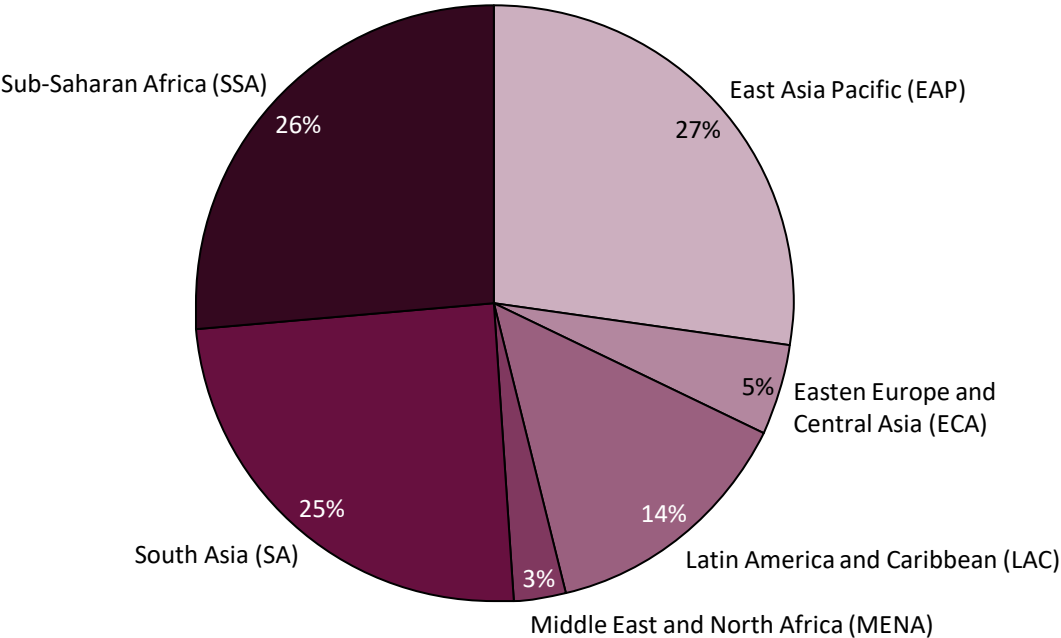- What other external issues bear on the models?

THE CREDIT GAP

Credit products facilitate growth and improved stability for micro and small businesses. Given the benefits, the demand for credit is significant across all sectors and geographies – yet is largely unmet

There are an estimated 487 million formal and informal micro and small businesses in emerging markets; the highest concentrations in Africa and Asia

Number of businesses by type globally (million)

- Formal
- Informal

	Micro	Small
Total	419	68
Formal	159	29
Informal	260	39

MSEs by region

- East Asia Pacific (EAP) 27%
- Easten Europe and Central Asia (ECA) 5%
- Latin America and Caribbean (LAC) 14%
- Middle East and North Africa (MENA) 3%
- South Asia (SA) 25%
- Sub-Saharan Africa (SSA) 26%

The focus of this report

Definitions

Informal and semi-formal businesses
- (Mostly) fall outside government regulatory system
- Pay no tax and mostly operate in cash
- Have limited contractual obligation or requirement to support employees

Micro businesses
1 – 9 employees

Small businesses
10 – 49 employees

Medium businesses
50 – 250 employees

Large Businesses
>250 employees

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These micro and small businesses demand a variety of credit products
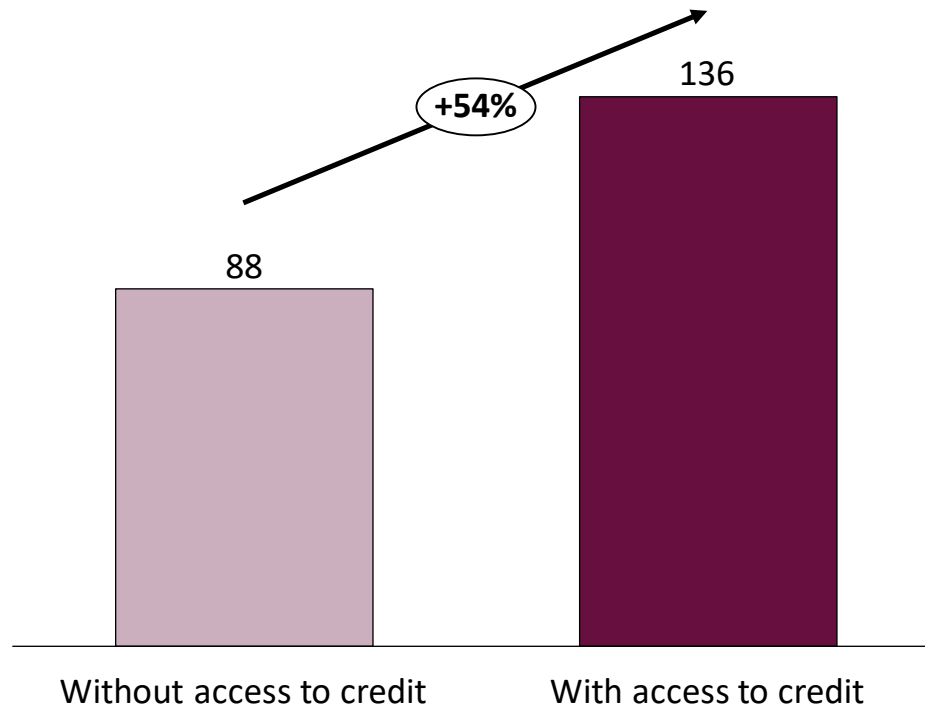
Definition of credit products

Direct lending to MSE (unsecured)	Working capital	• **Loan with fixed maturity date,** used to meet day to day operational expenses
	Cash advances	• **Upfront advance with variable maturity date,** typically deducted from the sales inflow
	Overdraft	• **Credit line allowing to access more money than is held in the savings account**
	Purchase credit	• **Credit for partial payment of a specific purchase amount,** typically short-term and linked to the specific purchase from a supplier
Direct lending to MSE (secured)	Invoice factoring	• **Purchase of invoices by a third party at a discounted price**, to improve cash flow and reduce bad debt
	Purchase order finance	• **Short-term financing line** providing capital to pay suppliers for verified purchase order
	Equipment loans	• **Long-term loan to purchase equipment,** usually with a down payment upfront
	Inventory finance	• **Short-term revolving credit line or loan,** made to MSE to purchase inventory for sale
Other MSE financing	Machine leasing	• **Leasing product for equipment needed by the MSE,** with ownership of the product staying with the financial institution

Credit products can support improved business performance in a variety of ways

Benefits of these credit products

Direct lending to MSE (unsecured)

Working capital	• **Supports ability to meet day to day expenses** and thereby improve quality of daily operations
Cash advances	• Allows instant receipt of cash to **cover the shortfall between when a customer pays and when money is received**
Overdraft	• **Support ability to cover daily expenses** after unexpected or emergency expenses take account balance to zero
Purchase credit	• **Supports ability to pay for goods,** by smoothing temporary inability to pay

Direct lending to MSE (secured)

Invoice factoring	• **Improves cashflow** by allowing business to receive cash to cover period between completing order, raising an invoice and receiving payment
Purchase order finance	• **Allows business to fulfill a customer order** by providing payment in advance, in order for them to buy the necessary materials to fulfill an order
Equipment loans	• Allows the purchase of equipment to **grow the business, improve productivity and / or better meet customer demand**
Inventory finance	• Provides ability to **increase the amount of inventory that can be held** and therefore **increase the amount of sales**

Other MSE financing

Machine leasing	• Allows use of products without direct lending for their purchase, to help business **save money** or increase the amount of output they can produce

Access to credit has been shown to increase the profits of micro businesses by more than 50%

Microenterprise monthly profit (USD)*

+54%

88 — Without access to credit

136 — With access to credit

Access to credit has been shown to have **more impact than access to other financing mechanisms, such as grants**. The pressure to repay appears to encourage owners to invest more efficiently in their businesses

"The majority of our customers have never taken out a business loan before as most banks do not service customers of this ticket size."
Flexiloans, India

"We typically see 15% to 20% month on month sales growth in borrowers from our financing"
Lidya, Nigeria

"Orders have increased by 60%" from those retailers participating in a pilot where inventory is provided with credit terms
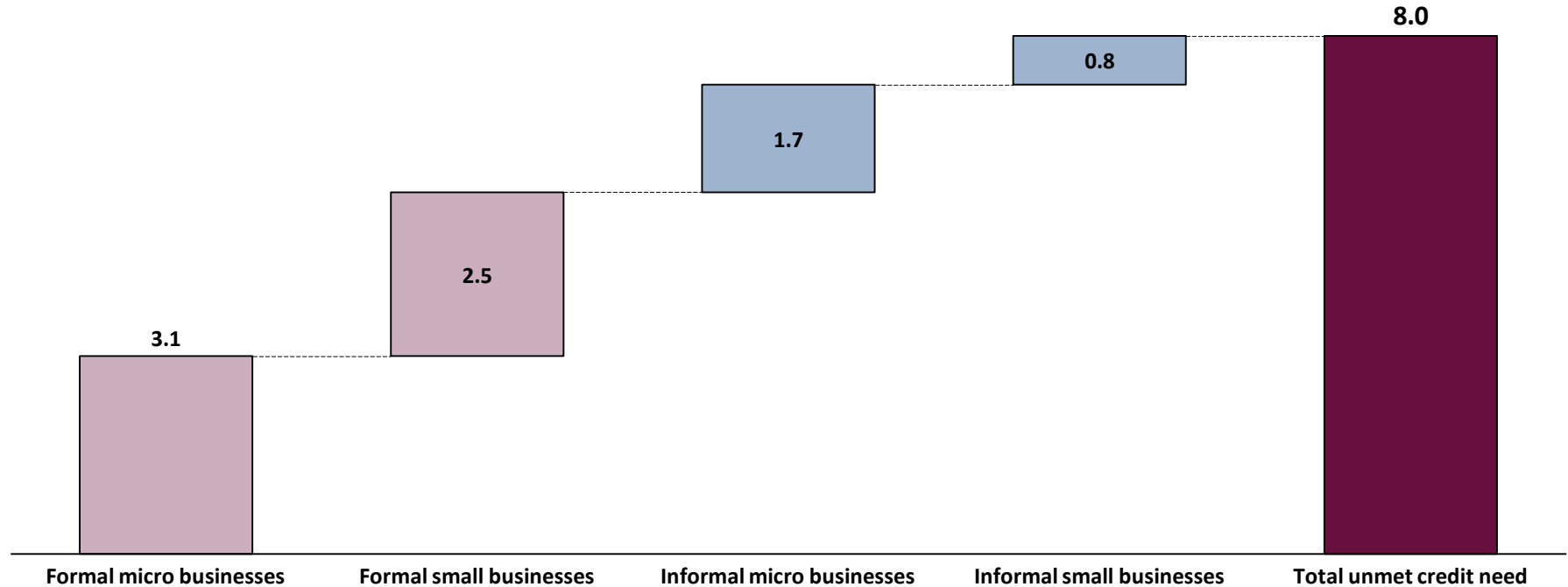Credit provider, Kenya

"85% of our clients say they are financially better off and 90% say their financial literacy has improved"
4G Capital, Kenya and Uganda

*These are results from studies conducted in East Africa; actual effect may vary by industry and geographic location. The level of education of the business owner and whether loans are accompanied by financial training may also have a material impact on the effect of access to credit

Source: IPA, Finmark Trust, Dalberg interviews

There is an estimated USD 8 trillion demand for credit from MSEs in emerging markets, with 30% of this demand from MSEs in the informal sector

Credit demand (USD trillions)

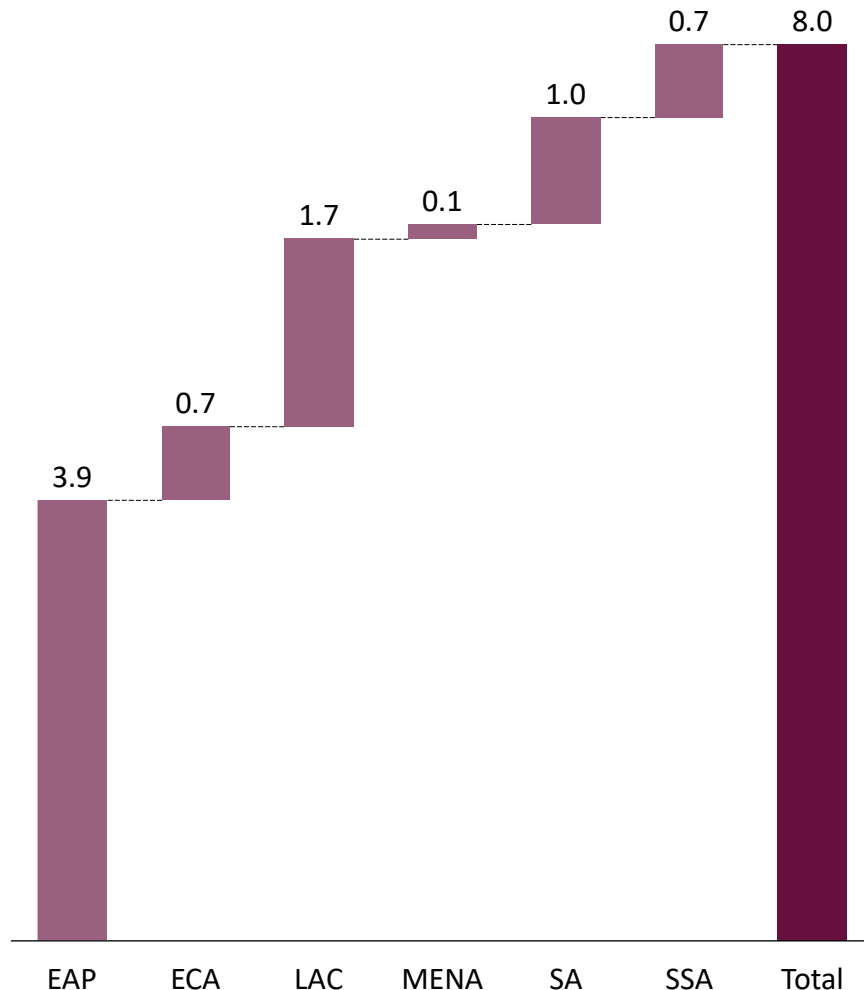| Formal micro businesses	Formal small businesses	Informal micro businesses	Informal small businesses	Total unmet credit need
3.1	2.5	1.7	0.8	8.0

Assumptions:
- 40% of informal MSEs and 55% of formal MSEs demand credit products. Formal MSEs are assumed to have a higher demand for credit as a result of more sophisticated business practices and approaches
- Credit demand is a function of sales and ranges from 20% - 30% of total sales (sector dependent). As a result, average credit demand for small businesses is higher than for micro businesses
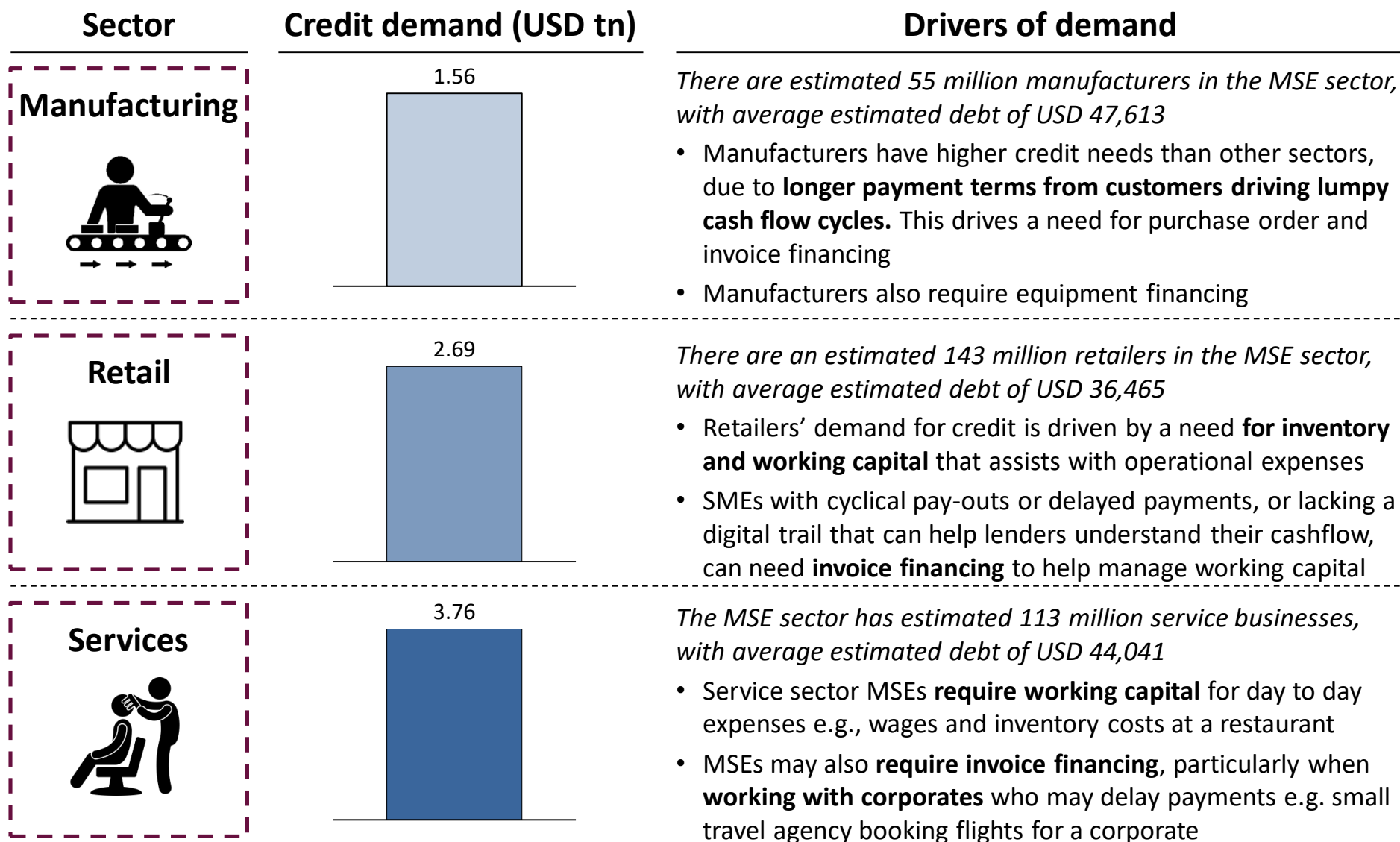
Source: IFC, 2017; World Bank data bank; Dalberg analysis

Credit demand is greatest in East Asia Pacific with USD 3.94 trillion unmet demand, followed by Latin America with USD 1.6 trillion in demand

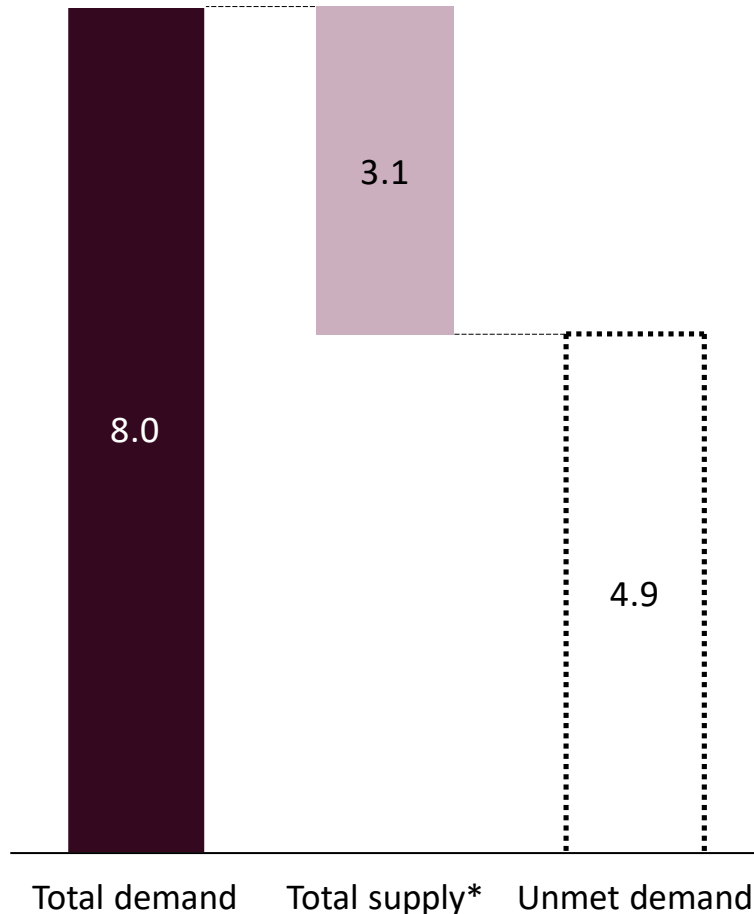**Credit demand of MSEs, per region (USD trillions)**

- **East Asia has the highest demand for credit at USD 3.9 trillion. This is primarily driven by China's large domestic market** and the large share of small businesses versus micro businesses that exist in this market

- Latin America and the Caribbean's high credit demand is due to a proportionately greater share of small versus micro businesses, compared to other emerging markets such as South Asia and sub-Saharan Africa

- Despite the large a large number of micro and small businesses, **Sub-Saharan Africa only constitutes about 8% of global demand**, largely due to its large share of informal micro businesses

Source: IFC, World Bank, Dalberg analysis

The greatest demand for credit comes from the services sector, with working capital and invoice financing the main drivers of demand across MSEs

Sector	Credit demand (USD tn)	Drivers of demand
Manufacturing	1.56	*There are estimated 55 million manufacturers in the MSE sector, with average estimated debt of USD 47,613* • Manufacturers have higher credit needs than other sectors, due to **longer payment terms from customers driving lumpy cash flow cycles.** This drives a need for purchase order and invoice financing • Manufacturers also require equipment financing
Retail	2.69	*There are an estimated 143 million retailers in the MSE sector, with average estimated debt of USD 36,465* • Retailers' demand for credit is driven by a need **for inventory and working capital** that assists with operational expenses • SMEs with cyclical pay-outs or delayed payments, or lacking a digital trail that can help lenders understand their cashflow, can need **invoice financing** to help manage working capital
Services	3.76	*The MSE sector has estimated 113 million service businesses, with average estimated debt of USD 44,041* • Service sector MSEs **require working capital** for day to day expenses e.g., wages and inventory costs at a restaurant • MSEs may also **require invoice financing**, particularly when **working with corporates** who may delay payments e.g. small travel agency booking flights for a corporate

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Source: IFC, World Bank databank, Dalberg analysis

Of the credit demanded by MSEs in emerging markets, just USD 3.1 trillion is currently provided, leaving a USD 4.9 trillion financing gap

Financing gap (USD trillion)

- Just **39% of the credit demanded by MSEs is currently provided**, leaving a USD 4.9 trillion credit gap

- **Financial institutions have historically not lent to MSEs in emerging markets due to**:
  - High cost of customer acquisition and assessment
  - Insufficient (or inaccurate) data availability to make accurate credit assessments
  - Low lifetime customer value due to small loan amounts and short loan tenors
  - Limited cross sell opportunities
  - High costs of distribution and servicing

*Total supply is that reported by the IFC for credit to the formal MSME sector, with 17% of that total calculated to be Medium-sized Enterprises based on an earlier IFC breakdown. Fully disaggregated data breaking supply in micro, small and business segments is not available

Source: "MSME Finance Gap", IFC 2017; "Verifying Accuracy of IFC's SME Measurement", IFC; Dalberg Analysis

IMPROVING THE CREDIT SUPPLY

Digital technologies are allowing the creation of new business models that disrupt traditional ways of lending to micro and small enterprises. In this section we highlight where this disruption is occurring, the set of business choices this is creating, and the business model taxonomies this is producing

Financial institutions have limited their lending to MSEs due to five main challenges

1

Finite capital for lending: financial institutions are constrained by the *amount of capital they have* available for lending. A focus on maximizing returns whilst minimizing risk has led traditional financial institutions to focus their capital on market segments where this can most easily be achieved

2

Originating customers: financial institutions find it *difficult and expensive* to reach MSEs. Originating customers has historically meant setting up branches and having in-field staff to explain financial products – this is expensive to deliver

3

Making lending decisions: there is *insufficient collateral and information* on business performance to judge lending risks. In addition to lacking collateral, MSEs have limited paperwork – such as sales and transaction data – that show the health of the business. Completing assessments is time consuming and costly given the limited information
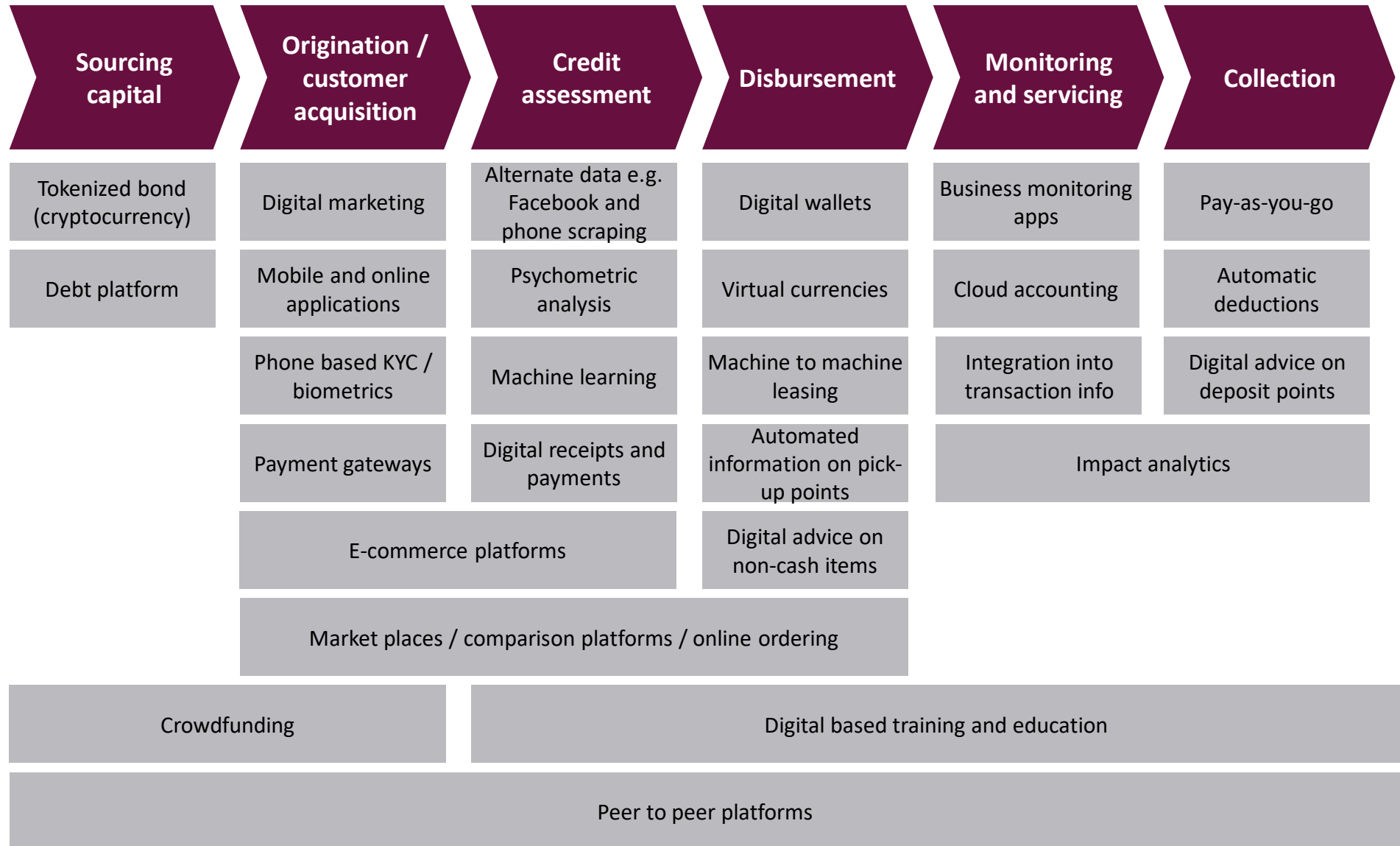
4

Disbursing the loan: getting the *appropriate loan* to MSEs and ensuring it is *used for business purposes* are difficult, with final approvals often given at times that don't match MSEs cash flow needs / cycles, and credit disbursed in a way that provides limited ability to ensure that the MSE uses it for income generating purposes (and thus, can repay)

5

Ensuring repayment: financial institutions also *struggle to collect repayments,* both in terms of ensuring the correct amount is paid at the right time, and in terms of following up with customers if repayment has been missed

Digital tools are being used throughout the financing value chain that may help overcome these challenges...

Sourcing capital	Origination / customer acquisition	Credit assessment	Disbursement	Monitoring and servicing	Collection
Tokenized bond (cryptocurrency)	Digital marketing	Alternate data e.g. Facebook and phone scraping	Digital wallets	Business monitoring apps	Pay-as-you-go
Debt platform	Mobile and online applications	Psychometric analysis	Virtual currencies	Cloud accounting	Automatic deductions
	Phone based KYC / biometrics	Machine learning	Machine to machine leasing	Integration into transaction info	Digital advice on deposit points
	Payment gateways	Digital receipts and payments	Automated information on pick-up points	Impact analytics	
	E-commerce platforms		Digital advice on non-cash items		
	Market places / comparison platforms / online ordering				
Crowdfunding		Digital based training and education			
Peer to peer platforms					

See annex for definitions on each of the above items

...giving financial institutions additional options on how to develop business models for lending to MSEs (1)

Key Challenges	Option Types
Sourcing capital for lending	*Source capital to run the business either through business liabilities, debt or equity* • Use customer deposits • On-lending through equity raised from investors and crowd-funding • Borrow based on business model/strength: source capital from B2B markets, such as wholesale debt markets • Borrow based on bundles of loans: package debt and offer to investors, either single-lender or syndicated • Borrow based on individual loans: use platforms to make debt available to other financial institutions and investors
Originating customers	*Secure customers either passively by waiting for them to come, actively by going to find them, or through introductions* • Physical passive origination: have branch and agent network through which customers come in and apply for lending • Virtual passive origination: have online and mobile application options for people to apply for loans • Virtual active origination: actively targeting potential customers by partnering with MNOs or through targeted facebook adverts • Physical active origination: have agents out in the field who conduct business development • Introduction origination: be integrated into other sales or payment platforms which proactively offer loans during use

...giving financial institutions additional options on how to develop business models for lending to MSEs (2)

Key Challenges	Option Types
Making lending decisions	*Assess customer loan needs and risks based on internal and/or outside sources* • Trusted party: secure loan repayment through third party (e.g. lending against invoice) • Collateral: secure loan repayment through physical asset • Direct assessment: assess loan through direct measures of business performance (inventory, cashflow etc.) • Indirect assessment: assess loan through indirect proxies of business performance, including those based on the personal activity of the applicants (social media, 3rd party rating etc.)
Determining how to provide loan product	*Disburse loan amount as cash, other money format, or in-kind to borrower* • Physical cash: provide cash either through branch or from specified geo-location • Traditional account: provide money via transfer into bank account • Digital wallet: provide cash into digital wallet that can be used for either specified or unspecified purposes • In-kind: provide inventory / inputs either to MSE or to supplier of MSE
Ensuring repayment	*Collect money for loan repayment from borrower passively or actively, or from third party* • Physical active repayment: MSE repays using cash at branch or via bank account • Virtual active repayment: MSE repays cash using digital wallet at specified time • Passive repayment: financial institution makes automatic deduction from digital transaction conducted by MSE or use APIs to actively deduct from a borrower's e-wallet • Third party repayment: counter-party repays financial institution directly rather than passing money to borrower

Lenders can choose to apply different digital disruptions to address these specific challenges of providing credit to MSEs

Decision for FIs	**1** How do we source capital?	**2** How do we find customers?	**3** What is the basis for our lending decision?	**4** What type of lending will we provide?	**5** How will repayment occur?
Traditional approach	Customer deposits or raising on wholesale capital markets	Branch network where and MSEs come to us	Collateral offered by MSE and assessment based on paper documentation	Cash, provided from branch or into bank account	MSE deposits cash in branch and through bank account
Options for financial institutions through digital disruptions	Via a platform, where banks can provide capital	Directly using physical infrastructure or in-field Officers with digital tools (e.g. tablets)	Using primary data collected on MSE sales and transactions	Cash: from designated point provided through geo-location	Paid by the MSE: payment at scheduled time using digital wallet or bank account
	Via a platform where individual investors can provide capital	Directly using online software, applications or platforms	Using primary data collected on MSE inventory and input use	Cash: distributed into digital wallet or bank account	Paid by the MSE: automatic deduction from receivable
	Via a platform where capital is syndicated	Through a partner	Using secondary data provided by partners on MSE performance	Non-cash: provided as goods	Paid by third party financier
			Using indirect proxy data such as Facebook and phone scaping	Non-cash: paid as cash to supplier who provides goods	

Lenders mostly rely on (1) deposits, (2) wholesale debt or (3) equity for capital, however, partnerships can help reduce their need for capital

Deposits

Fintechs and MFIs targeting MSEs are mostly non-deposit taking financial institutions (NBFI). This is because **deposit taking greatly increases regulatory burden**.

The cost of deposits when taken generally range from 5% – 25% in emerging markets

Wholesale debt

Financial institutions in emerging markets **struggle to source capital from wholesale markets**, due to low credit ratings and country risk

Where commercial capital can be sourced from wholesale providers, such as being done by Lendable in Kenya, this **carries a cost of up to 15%**

Equity

Many fintechs rely on equity for their lending capital.

Whilst equity carries no immediate cost, utilizing it for lending significantly reduces the return for business owners. It is also in **limited supply and has lengthy lead times to raise**

Partnerships

Fintechs can specialize in parts of the lending value chain and partner with traditional banks for co-lending or full lending

While this reduces the capital needs for Fintechs and reduces the cost of lending, effective integration of Fintechs into existing banking models has been limited

Reducing the cost and increasing the availability of capital remains a significant impediment for financial institutions wanting to lend to MSEs. The high costs of capital are passed on to MSEs, making it difficult for many MSEs to afford the credit that is available

Platforms are a digital disrupter that provide an opportunity to leverage capital from banks, individuals or a combination of both

Capital Providers

Capital Recipients

*Banks can lend directly to other financial intuitions such as **fintechs or MFIs** who lend to MSEs or **direct to MSEs themselves** through platforms*

*Financial institutions - such as fintechs and MFIs – may use platforms to **source capital** from a range of providers to be used **for onlending to MSEs***

Banks

FI

Platform

Platforms provide individual investors the opportunity to lend capital to FIs for onlending or direct to MSEs

Individuals

*Platforms may be used to get credit from a range of sources, including banks and individuals. **Debt may be syndicated (and risk lowered)** amongst many different capital providers*

Combination

MSE

*Platform companies may also be formed that allow capital providers to connect and **provide capital directly to MSEs***

Platforms not only provide an opportunity for improved returns on capital but can also the chance to reduce risk through options for syndication

Choice 1: Sourcing capital

Decision for FIs

1 How do we source capital?

2 How do we find customers?

3 Wh... for ... dec...

Traditional approach

Customer deposits or raising on wholesale capital markets

Branch network where and MSEs come to us

Collatera... MSE and... based... docum...

Options for financial institutions through digital disruptions

Via a platform, where banks can provide capital

Directly using physical infrastructure or in-field Officers with digital tools (e.g. tablets)

Using pr... collected... and tra...

Via a platform where individual investors can provide capital

Directly using online software, applications or platforms

Using pr... collecte... inventory...

Via a platform where capital is syndicated

Through a partner

Using sec... provided b... MSE pe...

Using in... data such... and pho...

The disruption:
- Platform allows banks to choose to fund individual MSE loans
- Tech platform allows banks to choose to fund bundled MSE loans

Advantage
- Leverages banks balance sheets, where large pools of capital exist

Disadvantage
- Banks may be reluctant to lend if not owning the customer relationship

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The disruption:
- Platform allows individuals to choose to fund individual MSE loans
- Platform allows individuals to choose to fund bundled MSE loans

Advantage
- Individual investors are willing to take risk if higher returns on offer

Disadvantage
- May require working with many small investors who each have limited capital

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Disruption:
- Tech platform where multiple bank or individual funders can contribute to a single loan and/or bundle of loans

Advantage
- Reduced risk for any bank or individual investors

Disadvantage
- Requires larger numbers of borrowers and lenders to adequately diversify

Lending to MSEs in emerging markets has typically had high customer acquisition costs, given the need for on-ground infrastructure and staff

Costs of originating MSEs have historically been high due to:

- **Low customer sophistication**, thereby requiring on-ground training and education

- **Cash-based demand**, thereby requiring branch and/or agent network for delivery and collection

- Highly **distributed customer base**

- **Limited connectivity** of customer base

- **Low conversion rates**, due to limited trust in financial service providers

- **High rates of churn**, meaning that new customers need to be found and brought on board to maintain lending base

Although few studies have yet to be done, anecdotal evidence suggest **digital channels can reduce customer acquisition costs by up to 10X**

Origination is **not just about finding customers but also about finding the 'right' customers**: retained customers are up to 95% more profitable and provide margins that are up to 80% better

Source: Marketing Sherpa, Harvard Business Review, Dalberg interviews

Digital channels provide a range of options for originating customers that are cheaper, more efficient and more effective than traditional approaches

2 *How do we find customers?*

3 *What is the basis for our lending decision?*

4 *lendin provic*

Branch network where and MSEs come to us

Directly using physical infrastructure or in-field Officers with digital tools (e.g. tablets)

Directly using online software, applications or platforms

Through a partner

Collateral offered by MSE and assessment based on paper documentation

Using primary data collected on MSE sales and transactions

Using primary data collected on MSE inventory and input use

Using secondary data provided by partners on MSE performance

Using indirect proxy data such as Facebook and phone scaping

Cash, provide branch or inte account

Cash: from des point provided geo-locati

Cash: distribut digital wal

Non-cash: pro goods

Non-cash: paid to supplier provides gc

The disruption:
- In-field tablets with specialized software allow real-time collection and digitization of data in addition to real-time lending decisions

Advantage
- Increase efficiency and effectiveness of customer onboarding

Disadvantage
- Requires in-field team who is trained and has appropriate tools

The disruption:
- Online tools and software, with credit application options embedded to accept applications, assess creditworthiness and distribute credit

Advantage
- Low cost and high ease of origination

Disadvantage
- May provide limited ability to discriminate between different customer types

The disruption:
- Partners offering or using a digital tool or platform provide pipeline of MSEs to tap into and may provide digital tools e.g. e-commerce platforms

Advantage
- Partner incurs cost of originating customer
- May allow access to partner data to support credit assessment

Disadvantage
- Partner retains ownership of the customer relationship

Conducting credit assessments on MSEs is difficult due to limited information and high costs to complete assessments

Financial institutions place the highest level of value on data that predicts:

1. **Ability to repay**, such as:
   - **Cash flow** history
   - **Sales and transaction** data
   - **Contracts, invoices, purchase orders** and/or other evidence of receiving cash

2. **Willingness to repay**, such as:
   - Past **evidence of having repaid** loans on time
   - **Evidence of good business behavior**, such as orders being delivered on-time and positive customer testimonials

Historically: data has been provided through:

1. Collection of **paper based documents**
2. Relying on **relationships** between borrowers and lending officers

Now: digital tools are facilitating **better data collection and credit assessments** through:

1. Providing **more data points** – with up to 50,000 online data points collected by some fintechs
2. **Online transaction and ordering data,** which can act as proxies for cash flow
3. Online information of customer behavior
4. Providing **controls on how lending will be used**

Repayment is estimated to be 5 – 10% better if connected to income generating activities

Financial institutions can collect digital data by direct integration into MSE transaction and ordering systems, partnerships or via online scraping

What is the basis for our lending decision? (3)

- Collateral offered by MSE and assessment based on paper documentation
- Using primary data collected on MSE sales and transactions
- Using primary data collected on MSE inventory and input use
- Using secondary data provided by partners on MSE performance
- Using indirect proxy data such as Facebook and phone scaping

What type of lending will we provide? (4)

- Cash, provided from branch or into bank account
- Cash: from designated point provided through geo-location
- Cash: distributed into digital wallet
- Non-cash: provided as goods
- Non-cash: paid as cash to supplier who provides goods

The disruption:
- Payment integration to gain visibility into MSE sales and transaction data

Advantage
- Creates opportunity for other disruptions, such as automatic repayment

Disadvantage
- Does not capture entire business health – cash transactions remain unknown

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The disruption:
- Direct integration into and visibility of MSE 'back end' ordering data

Advantage
- Provides knowledge of inventory turnover which can be used for in-kind lending

Disadvantage
- Provides limited knowledge on overall business and financial health

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The disruption:
- Direct visibility of data captured by other organizations systems

Advantage
- Partners can provide a broader range of data to allow better assessment

Disadvantage
- Requires partners to be open to sharing the data they have

The disruption:
- Capturing a broad range of non-business specific digital data

Advantage
- Allows assessment of businesses who may use few digital tools

Disadvantage
- Does not provide any indication of business health or performance

Digital tools improve the speed and ease which credit can be disbursed whilst offering opportunities to control how that credit can be used

What type of lending will we provide? (4)

How will repayment occur? (5)

Cash, provided from branch or into bank account

MSE deposits cash in branch and through bank account

Cash: from designated point provided through geo-location

Paid by the MSE: deliberate payment at scheduled time using digital wallet

Cash: distributed into digital wallet

Paid by the MSE: automatic deduction from receivable

Non-cash: provided as goods

Paid by third party

Non-cash: paid as cash to supplier who provides goods

The disruption:
- Digital advice (geo-location) on where cash will be available

Advantage
- Improves cash or float management efficiency (by reducing need to hold excess cash/float to ensure ability to disburse), and ease of collection for MSEs

Disadvantage
- Maintains heavy reliance on physical cash

The disruption:
- All money flows through digital wallets

Advantage
- Cheap and easy distribution mechanism, with option to control credit use

Disadvantage
- Requires MSEs to have and use digital wallets, and potentially bear cash-out fees

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The disruption:
- Provision of inventory based on digital tracking of inventory turnover

Advantage
- Ensures credit is used for income generating purpose

Disadvantage
- Provides less flexibility for MSE

The disruption:
- Digital integration with partners who provide goods to MSE

Advantage
- Leverage existing relationships with MSEs and reduce risk in how credit is used

Disadvantage
- Partner retains customer relationship

Growth in digital sales and the use of digital transaction tools are creating many opportunities to improve credit repayment and collection

MSEs are increasingly using digital transaction tools and becoming less reliant of physical cash. Digital tools that are being used include:

Digital wallets	Digital Invoices	Digital Purchase orders	POS payments	Mobile money	E-commerce sales	Payment gateways

Digital transaction tools not only offer an improved method for collecting repayment from MSEs but they also **offer the opportunity to improve repayment rates through direct recourse to MSE cash flow**. This is being achieved by:

- **Integrating into systems** where digital transactions occur, including POS systems, mobile money wallets, e-commerce sales and payment gateways and automatically deducting repayments from receipts through these systems
- **Providing digital means for counter-parties to repay outstanding MSE debt**; which may be done through e-invoice or e-Purchase Order tracking and management software

Financial institutions increasingly have the option to use digital tools that can improve the ease, speed and timeliness of credit collection

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5 **How will repayment occur?**

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MSE deposits cash in branch and through bank account

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Paid by the MSE: deliberate payment at scheduled time using digital wallet

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Paid by the MSE: automatic deduction from receivable

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The disruption:
- Payment is made via a digital wallet

Advantage
- Improves speed, ease and cost of collection
- No need to create physical infrastructure

Disadvantage
- Lender has little control over repayment by MSE other than blacklisting MSEs who do not repay

The disruption:
- Repayment is automatically deducted from receivables paid through digital channels

Advantage
- Ensures repayment is connected to income earned by MSE and allows the lender to be more flexible (i.e. no fixed maturity dates)

Disadvantage
- If MSE switches away from digital channels, the repayment mechanism no longer works

Disruption:
- Repayment made by MSE's buyer through digital system, where funds are automatically deducted (e.g. from invoice) when payment is made

Advantage
- Improves rate of repayment, with repayment aligned to receivables
- May reduce risk where MSE's buyer is larger and has greater ability to pay

Disadvantage
- Requires lender to know creditworthiness of the buyer; can be expensive

Business choice combinations (orange highlights in diagram below) create a range of different business models. Example: Use of third party remote data to conduct credit assessment

	① How do we source capital?	② How do we find customers?	③ What is the basis for our lending decision?	④ What type of lending will we provide?	⑤ How will repayment occur?
Traditional approach	Customer deposits or raising on wholesale capital markets	Branch network where and MSEs come to us	Collateral offered by MSE and assessment based on paper documentation	Cash, provided from branch or into bank account	MSE deposits cash in branch and through bank account
Options for financial institutions through digital disruptions	Via a platform, where banks can provide capital	Directly using physical infrastructure or in-field Officers with digital tools (e.g. tablets)	Using primary data collected on MSE sales and transactions	Cash: from designated point provided through geo-location	Paid by the MSE: deliberate payment at scheduled time using digital wallet
	Via a platform where individual investors can provide capital	Directly using online software, applications or platforms	Using primary data collected on MSE inventory and input use	Cash: distributed into digital wallet	Paid by the MSE: automatic deduction from receivable
	Via a platform where capital is syndicated	Through a partner	Using secondary data provided by partners on MSE performance	Non-cash: provided as goods	Paid by third party
			Using indirect proxy data such as Facebook and phone scaping	Non-cash: paid as cash to supplier who provides goods	

This business model attracts customers via a custom app, through which they are linked to a third party service which assesses their credit based on access to their behaviour with phone and on social media

The cash is disbursed into a digital wallet and the customer must deliberately repay it from that wallet back to the lender, according to the loan schedule

Many such combinations within business models are possible and observed – some described in the following pages

The businesses we have interviewed can be categorized according to the options they have chosen

Main source of capital for lending:

Deposits	Debt / wholesale markets	Equity	Platforms
1	Lulalend, instamojo, FLEXILOANS, 4G CAPITAL, TALA, Lidya, umati capital, happyloans — 6	Lidya, KOPO KOPO, DPO Payments — 1	LOANS 4 SME, afluenta crédito humano — 4

Main method of customer acquisition:

Directly using physical infrastructure or in-field staff	Directly using online platform or software	Through a partner
KOPO KOPO, ARTOO, 4G CAPITAL — 5	TALA, DPO Payments, umati capital, instamojo, FLEXILOANS, Lulalend, afluenta, Lidya, KOPO KOPO — 5	LOANS 4 SME, happyloans, umati capital, Lidya — 4

Basis for lending decision

1 = Number of additional companies interviewed

Repayment		Assessment based sales, transaction and behavior data			Assessment based on assets		
		Primary (direct) data	Secondary (partner) data	Third party (indirect) data	Inventory	Invoices	Purchase orders
Paid by the MSE	Deliberate payment by MSE	4G CAPITAL, LOANS 4 SME — 4	umati capital, afluenta crédito humano	TALA — 2	2		
Paid by the MSE	Automatic deduction from MSE	DPO Payments, Lulalend, KOPO KOPO, instamojo — 2	umati capital, Lulalend, happyloans — 2			1	
Not paid by the MSE	Paid by third party	Lidya	happyloans, Lidya	Lidya		Lidya	Lidya — 1

34

From these choices, we have observed seven business models where digital disruption is playing the greatest role for MSE focused lending (1/2)

Business models	Description	Disruptive elements	Observations on this model
1 **High touch unsecured working capital loan**	• **Unsecured lending** based on digitized paper documents and **automated credit scoring conducted by in-field staff** [micro to large ticket size – but skewed to larger sizes due to costs of acquisition]	• **Real-time credit assessments** and approvals • Ability to change credit approval policies quickly and easily	• **High touch** builds customer **trust** • Supports customers who are 'offline' • **High cost** and difficult to scale quickly • Best suited to FIs with existing infrastructure
2 **Merchant cash advance**	• **Unsecured** lending, **assessed against MSE's digital transactions**. Repayment via **automatic deductions** directly collected from digital receipts [medium to large ticket size, likely reflecting the size of businesses currently using digital payments]	• **Direct visibility** of transaction data • Ability to collect repayment via **deductions at source**	• **Lending aligned to cash flow cycle** improves repayment rates • Credit assessment **does not capture the entire health** of the **business** • Opportunity for businesses already providing digital payment solutions
3 **Low touch unsecured working capital – based on partner data**	• Unsecured cash advance based on **partner provided data on digital sales and transactions**. Automatic deductions may be available [small to medium ticket size, possibly linked to demand size and/or trust in partner data]	• **Real-time data on business performance** from broad range of partner organizations • Significant increase in **customer acquisition channels**	• **Low cost of customer acquisition** • Broad view of overall MSE performance • May be significant **coordination costs** and challenges, in particular access to and trust in partner data

Note: Loan ticket sizes are **micro** up to USD100, **small** USD100-500, **medium** USD500-1,000, **large** USD1000+. Information is based on interviews. Revenue typically comes from either interest or fees on the credit provided

From these choices, we have observed seven business models where digital disruption is playing the greatest role for MSE focused lending (2/2)

Business models	Description	Disruptive elements	Observations on this model
4 **Low touch unsecured working capital – based on non-business data**	• Unsecured cash advance **based on non-business specific digital footprint**; short loan tenor and with no recourse to funds [micro to small ticket size, for those lacking business data]	• **Digital scraping** allowing collection of many data points • Mobile apps allowing **ease of application**	• **Customer acquisition focus;** small first loans to **build proprietary data set** • Lending not business specific, and provides **limited incentive to repay** • Risk of **over indebting non-credit worthy customers**
5 **Factoring**	• B2B invoice credit, **secured against invoice**. **Direct visibility** of invoice (digitized), **collection upon invoice payment**, often **directly from the payer** [large ticket size]	• **Visibility** of invoice through digitization • **Direct collection** from MSE customer (invoice / PO payer)	• **Improves MSE cash flow,** therefore guaranteed to help business growth • **Market limited** by need for MSE to have **reputable customer** • **Uptake of e-invoicing limited** and may require government regulation
6 **Inventory and Input financing**	• In-kind lending secured against inventory / inputs. Assessment based on **digital ordering and/or tracking of inventory use**. [micro to large ticket sizes]	• **Digital ordering and tracking** facilitate predictive credit provision • **Geo-location** providing allows assessment based on micro economic variables	• Ensures **credit** is used **for income generating activity** • **Requires** MSEs have **digital tools** • May lock MSEs into certain suppliers • Best **suited to distribution companies**
7 **Platform based lending**	• **Direct connection** between borrower and lender, with **unsecured capital** provided. **Platform provider conducts borrower credit assessment & follow up** [large ticket size]	• Financial intermediary not needed • Credit scoring on **broad range of digital data** - both business and non-business specific	• Can **reduce risk through debt syndication** between many lenders • **Banks reluctant to lend through platforms** given low trust in credit assessments by outside entities

Note: Loan ticket sizes are **micro** up to USD100, **small** USD100-500, **medium** USD500-1,000, **large** USD1000+. Information is based on interviews. Revenue typically comes from either interest or fees on the credit provided

Four business models are chosen for further analysis based on potential for impact on MSE ecosystem by meeting credit needs, and feasibility to scale

	Business models		Impact on MSE ecosystem		Feasibility to scale model
1	High touch unsecured working capital loan	◑	**Reduces NPLs** due to better understanding of borrowers, but expensive to provide. Good option for offline businesses	◑ **Slower growth but higher profitability** by allowing to offer higher ticket loan sizes with longer terms and to control NPLs
2	Merchant cash advance	◕	**Improved method of assessment and collection** encourages increased lending	◕ **Rapidly growing use of digital transaction** tools makes lending increasingly feasible
3	Low touch unsecured working capital – based on partner data	◕	**Reduced cost of customer acquisition** and improved credit assessment will drive higher lending and **lower NPLs**	◑ **Partnership development is hard**, with many organizations reluctant to share data
4	Non-business specific third party data	◔	Lending and repayment that is not connected to MSE performance **may hinder rather than support business growth**	● **Low acquisition costs** means this can scale quickly as long as adequate capital for lending is available
5	Factoring	◑	Low risk for lenders and improved cash flow for MSEs will drive demand and encouraged development of these lending products	● Well accepted lending model which will be supported by rapidly increasing use of e-invoicing tools
6	Inventory and Input financing	●	Useful for many retailers in emerging markets. In-kind lending improves ease of repayment and supports business growth	◕ Existing relationships between MSEs and inventory providers will allow rapid growth
7	Platform based lending	●	Can help crowd-in larger pools of capital: a must if there is to be material reduction the credit gap	◑ Good initial option for banks to work with fintechs and to lend to MSEs. May take time for banks to trust outside credit scores

Key: ● *Very high* ◕ *High* ◑ *Medium* ◔ *Low* ○ *Very low*

BUSINESS MODEL TAXONOMIES

While there are many ways that digital tools can be used to support lending to MSEs, in this section we have chosen four business model taxonomies for further investigation

A note on business model taxonomies

How business model taxonomies have been categorized

- Financial institutions have been **categorized** into different business model taxonomies **according to their salient features** (that is, core elements that are central to the operation and success of the business)
- **All businesses have slight differences** in how they operate, the digital tools they use and the business model choices they make. Categorizations are, therefore, open to interpretation and may change over time; our choice of salient features is based on our interviews and research

Determining the viability of business model taxonomies

$$Viability = Revenue\ (LCV) - costs\ (CAC + CoC + NPL)*$$

- Business model **taxonomies that use digital tools for lending are nascent** (mostly <3 years old). As such, LCV, CAC, CoC and NPL are not fully known and continue to evolve for many lenders
- Where lenders do know LCV, CAC, CoC and NPL, this is **market sensitive information which they are reluctant to share**. We have used details from interviews and publicly available data to estimate these figures

Calculating the size of the business model opportunity

- The **size of business model opportunity has been estimated using a range of proxies** from different industries and markets, with significant assumptions underlying these calculations

*LCV = Lifetime Customer Value, CAC = Customer acquisition cost, CoC = Cost of capital, NPL = Non-performing loan

BUSINESS MODEL TAXONOMY 1: MERCHANT CASH ADVANCE

Digital sales and transaction tools are not only providing records that can be used for credit assessment but also offer the opportunity for lenders to take automatic deductions. Businesses providing transaction tools are increasingly looking at opportunities to offer credit products

Digital transaction tools provide data that can be used to make lending decisions and also allow automatic deductions for repaying debt

How the business model works:

MSE applies for loan either through system, or directly to credit provider in a way that links back to system (e.g. via linked phone number)

2

1 MSE transacts through digital system

Digital transaction system

If approved, MSE receives credit directly into digital wallet. Repayment via automatic deductions from future sales

3

Credit provider

4

MSE

If arrangements allow, credit provider is plugged into the digital transaction sales of the MSE, allowing automated deductions

Digital transaction systems include online payment gateways, POS machines, mobile money transactions, and e-commerce platforms, where MSEs receive payment from customers digitally. **These digital systems create a track record that can be used for lending decisions and to collect repayment**

Digital choices lenders are taking:

Origination:
- MSE makes sale with digital transaction system. Once sale has been made, MSE is offered credit product to either meet delay in payment or to help business growth

Credit assessment:
- Assessment completed based on transactions and sales using digital systems

Credit disbursement:
- Financial institution makes assessment and provide capital directly to MSE. This capital is generally provided into a digital wallet

Loan repayment / recovery:
- Lender takes automatic deductions from future sales if arrangements allow

The increasing use of digital transaction tools and sales platforms by MSEs creates significant opportunity to expand this business model

The digital tools driving this model:

Sourcing capital	Origination / customer acquisition	Credit assessment	Disbursement	Monitoring and servicing	Collection
Tokenized bond (cryptocurrency)	Digital marketing	Alternate data e.g. Facebook and phone scaping	Digital wallets	Business monitoring apps	Pay-as-you-go
Debt platform	Mobile and online applications	Psychometric analysis	Virtual currencies	Cloud accounting	Automatic deductions
	Phone based KYC / biometrics	Machine learning	Machine to machine leasing	Integration into transaction info	Digital advice on deposit points
	Payment gateways	Digital receipts and payments	Automated information on pick-up points	Impact analytics	
	E-commerce platforms		Digital advice on non-cash items		
	Market places / comparison platforms / online ordering				

Crowdfunding	Digital based training and education

Peer to peer platforms

- **Providers of digital sales and transaction tools –** such as e-commerce platforms and payment gateway providers - **are best suited to deliver** this lending given existing MSE relationships and use by MSEs of their systems

- **Lending** by providers of these tools has been **limited in emerging markets** given **insufficient expertise of credit scoring, low levels of capital available for lending and regulatory concerns**

- There are, however, increasing efforts being undertaken to lend through these channels

Spotlight

DPO
Think Payments

DPO Group state they are **Africa's largest provider of online and offline payment services.** DPO Group began testing credit provision in 2015 only to discover the credit scoring business they worked with did not meet their requirements. **In 2017** they again started **testing an 'easy advance' product**, this time using internal credit scoring. They offer **MSEs unsecured loans** of between **USD 500 and 10,000** which are repaid via **automatic deductions,** with a fee charge, based on the size of deductions. **50 merchants** are **participating** in an initial pilot, with indications of **positive outcomes for all parties involved.** The product is now available in Kenya, Tanzania, Uganda and Zimbabwe.

Key business details:
- Operating in 16 countries across Africa
- 45,000 merchants use their payment solutions
- Many partners, including e-commerce platforms, insurance companies, travel and tourism companies
- Currently piloting credit solutions with early indications showing positive results

By 2025, A USD 728 Bn opportunity will exist for lending through digital transaction systems, up from a USD 272 Bn opportunity today

Potential volume of lending (USD Bn)*

Legend:
- SSA
- SA
- MENA
- LAC
- ECA
- EAP

2018: Total 272
- SSA: 3
- SA: 10
- MENA: 1
- LAC: 5
- ECA: 25
- EAP: 228

+15%

2025: Total 728
- SSA: 10
- SA: 36
- MENA: 3
- LAC: 90
- ECA: 18
- EAP: 570

The credit opportunity:

- USD 272 Bn lending opportunity, growing by 15% YoY to USD 728 Bn by 2025

- Growth driven by rapid growth (14 – 20% CAGR) in use of digital transaction tools across all regions through to 2025

- The **largest potential volume of lending is in East Asia**** (primarily China) where **~25% of businesses** already **use digital transaction tools**; whilst the **smallest opportunity is in SSA and MENA**, where **less than 3% of merchants use digital tools** for sales and transactions

- This lending market will be comprised of a large volume of small, high turnover loans; with **average tickets sizes of ~USD 1,500** and **loan tenors of between 5 to 30 days**

*Potential volume of lending is based on credit demand; the supply of lending provided using digital transactions is not accounted for in this figure.
**The USD 228 Bn of potential lending volume in EAP may, to a large extent, already be met by large companies such as Ten Cent and Alibaba. The supply from these companies is not accounted for in these calculations

Source: Statista; PR Web; Opus Capital; Stakeholder Interviews

This business model provides an easy and low cost option to reach MSEs who are increasingly looking to sell using online options

Value proposition of this business model

- **Leverages existing relationships** meaning low cost of customer acquisition

- **Credit assessment is higher quality given it is based on sales and transaction data**, and therefore provides better indication on customer ability to repay

- Online customer testimonials also provide **quality tool for assessing MSE character** and likely willingness to repay

- Size of **lending** and rate of **repayment** can be **tailored to sales**

- Ability to **automatically deduct repayments** from sales

Viability of this business model

Revenues
- Rates of between 15% and 30% on lending, location dependent

Costs
- Low customer acquisition cost: <1% of margin

- Low NPL (<3%) due to automatic deductions

- High cost of capital (up to 15%), given limited lending history by digital transaction providers

- High initial capex to build credit scoring and loan management systems

Breakeven / profitability
- Runway to profitability 2 - 3 years, depending on quality of credit scoring

Key factors that are essential to this business model:
- Development of high quality credit scoring - requires outside experts
- Access to capital for lending

Interviews suggest gross margins of 60% on lending are achievable

Limited capital for lending and a lack of evidence in the viability of this business model currently hinders further development

Challenges to this business model

- Providers of digital tools have small margins and **have limited capital available to lend**

- **Wholesale markets are broadly shut off to digital transaction providers** because they have no history of providing credit products

- **Credit assessments do not capture the entire cashflow of the business:** for example, it is estimated that merchants using e-commerce conduct 50% of sales offline

- Not all merchants to have online connectivity

- MSEs may avoid repaying loans by switching to different transaction tool providers

- There is limited involvement or interest from larger financial institutions to work with digital transaction providers

- Digital transaction tools are **mostly focused on B2C sales in emerging markets**, limited use or availability of tools for B2B transactions

Potential Solutions

- **Partnership brokering** between transaction tool providers (for data and repayment), fintechs (for credit scoring) and larger financial institutions (for capital to lend)

- Donor capital to allow **testing and improvement of credit scoring models and to prove the viability of the business model**

- Provision of education and training that encourages and enables merchants to conduct a greater proportion of transactions online

- **Regulation** to ensure appropriate data can be collected and that trust can be built between borrowers and lenders

- Regulation requiring **digital transaction providers to report to credit bureaus** where MSEs do not make repayments on loans

- Support for the **development of B2B platforms,** particularly in less developed markets such as in SSA

BUSINESS MODEL TAXONOMY 2: FACTORING

Invoice / accounts receivable financing (factoring) is a business model that has historically only been available to large businesses. Digital invoicing is allowing factoring to be increasingly offered to MSEs by bringing down the cost and efficiency of assessment and also improving the ease for collecting repayment from third parties
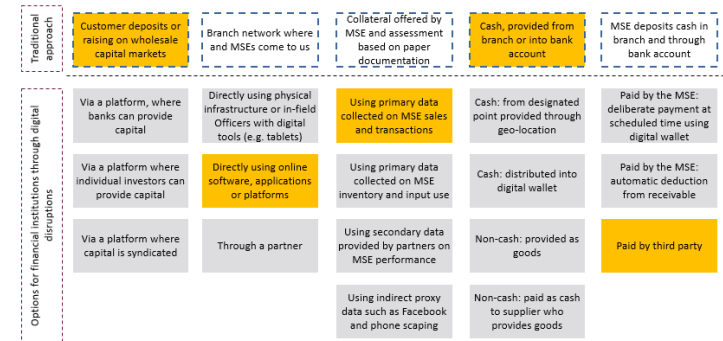
Digital invoice tracking and management is allowing financial institutions to lend against known receivables for MSEs

How the business model works:

Buyer *may* pay full value of the invoice to FI directly as repayment, or pay MSE with value of invoice paid to FI through automatic deduction **(5)**

Buyer purchases product from MSE **(1)**

MSE issues invoice **(2)**

MSE Applies for credit against invoice **(3)**

Financial institution provides capital to MSE at a certain discount rate **(4)**

*Factoring is a form of debtor finance where an **MSE is sells a portion of their invoices (accounts receivable) in order to improve the speed of cash receipt** between issuing an invoice and receiving payment. With Reverse Factoring, the receiver of the invoice (the buyer) guarantees repayment*

Digital choices lenders are taking:

Origination:
- MSEs record invoices through digital tracking systems. Financial institutions utilize this information to reach out to MSEs to offer credit against these invoices

Credit assessment:
- Assessment completed based on the quality of the invoice payer.

Loan repayment / recovery:
- Lender may take automatic repayment when invoice is paid. This may be via an automatic deduction from invoice payment through digital software or via payment directly from the buyer

Factoring is a well established lending approach, digital tools are allowing the development of business models using this approach specifically for MSEs

The digital tools driving this model:

Sourcing capital	Origination / customer acquisition	Credit assessment	Disbursement	Monitoring and servicing	Collection
Tokenized bond (cryptocurrency)	Digital marketing	Alternate data e.g. Facebook and phone scaping	Digital wallets	Business monitoring apps	Pay-as-you-go
Debt platform	Mobile and online applications	Psychometric analysis	Virtual currencies	Cloud accounting	Automatic deductions
	Phone based KYC / biometrics	Machine learning	Machine to machine leasing	Integration into transaction info	Digital advice on deposit points
	Payment gateways	Digital receipts and payments	Automated information on pick-up points	Impact analytics	
	E-commerce platforms		Digital advice on non-cash items		
	Market places / comparison platforms / online ordering				
Crowdfunding	Digital based training and education				
Peer to peer platforms					

- **Tools for digitally managing and tracking invoices** are **reducing the cost** via which financial institutions can view, track and assess invoices received. The **cost of assessing** the invoices (particularly when small and paper based) has made it **prohibitively expensive** to offer this products to MSE **previously**

- **Invoice management software can be used** to collect and **coordinate payments** between buyers, financial institutions and MSEs. The improved ease of repayment is **reducing the cost and risk** of offering this product

Spotlight

Lidya

Established in 2016 and based in Nigeria, Lidya is **providing a range of digital tools to help MSEs access the capital they need to operate effectively.** This includes an invoice management which Lidya can monitor. When MSEs record invoices to large consumer goods companies with long payment terms (up to 150 days) through this free invoicing tool, **Lidya will provide lending of as little as USD 150 and up to USD 150k against the invoices**. Lidya then takes repayment directly from the buyers when invoices are paid

Key business details:
- Operating only in Nigeria but looking at opportunities to expand into other frontier markets
- 120k business have signed up to access the merchant tools they are providing
- 70+ enterprises (inc. corporates and associations) who purchase from MSE are working with Lidya to improve use of invoice tracking service

With CAGR of 40%, the use of factoring as a financing tool for MSEs is expected to grow rapidly

Potential volume of lending (USD Bn)

Legend:
- SSA
- SA
- MENA
- LAC
- ECA
- EAP

2018 — Total: 1.5
- 1.1
- 0.2
- 0.1

+40%

2025 — Total: 15.4
- 0.0
- 0.0
- 0.0
- 7.9
- 0.5
- 6.9

The opportunity for lending:

- At present, a **comparatively small lending opportunity** - at just USD 1 Bn – due to e-invoicing use and development being relatively nascent, in addition to **high initial costs of customer acquisition and onboarding**

- **Lending opportunity is expected to grow rapidly** - CAGR of 40% - **due to rapid increase in use of e-invoicing tools and recently introduced regulations** in multiple countries requiring all businesses to digitally manage and record invoices

- The lending value against invoices range from 40% to 70%, with variations according to location, industry and debtor quality

- This lending opportunity is **particularly well suited to MSEs in the manufacturing, retail and services sector** who have large clients with long payment terms (e.g. FMCG retailers)

Source: Statista; Billentis, 2017; Bnamericas, 2017; Businesswire, 2014, Stakeholder interviews

Factoring allows credit assessment to be conducted against the payer of the invoice rather than the MSE, this can significantly reduce the lending risk

Value proposition of this business model

- **Well established and understood lending model** which is in demand from MSEs

- **Reduced risk** given payment relies on counter-party who may be bigger and more established company

- **Improves working capital cycle** of MSEs and therefore helps business growth

- Better repayment given ability for **automatic deductions** when invoice is paid

- Business models **can quickly scale with right software** and supporting ecosystem

Viability of this business model

Revenues
- 30% – 40% achievable (location and industry dependent) being the difference between factor paid and invoice value

Costs
- Customer acquisition cost, up to 5% of lending margin, given high assessment costs

- NPL 1% - 3% - counter party dependent

- Lower CoC than other SME models: (est. 5% – 15%) due to more established lending model

Breakeven / profitability
- Profitability possible in 1 – 3 years, subject to ability to manage initial customer onboarding

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Key factors that are essential to this business model:
- A trusted and widely used digital (e)-invoicing system
- A legal framework that makes it clear on the rights of the factor, including options for recourse and taxes paid

Customer retention is >98% where this has been offered to MSEs

Source: IFC, Finaccess, Dalberg interviews

Increased access to and use of digital invoicing is required to drive growth in factoring as a financing solution for MSEs

Challenges to this business model

- **Relies on the use of invoice management software** which is often **unavailable or unknown** by MSEs

- **High costs of customer acquisition** given significant onboarding requirements and the need to have multiple parties using the system

- Partnership coordination and **building a network of businesses who use** and trust digital invoice systems is needed

- Need to **conduct risk assessment on each buyer individually**, which adds to costs

- Ambiguous legal environment on the rights of the factor in many emerging market

- **Ensuring investors** and other providers of commercial capital **see the full value of the opportunity;** to date, many are reluctant to provide the capital needed to grow this business model

Potential Solutions

- Support further **development, promotion and roll out of invoice management software**

- **Support coordination** between financiers providing factoring for MSEs and large corporates working with those same MSEs

- Encourage **replication of legislation that requires invoices to be digitized**

- Provide **a guideline on best practice legal frameworks for factoring**, and work with appropriate regulators to implement these practices

- **Conduct studies** on the **impact of invoice finance** for MSEs to highlight the benefits to commercial and non-commercial investors

- DFIs to provide **risk capital to test and prove the viability of factoring** for MSEs in emerging markets

BUSINESS MODEL TAXONOMY 3: INVENTORY AND INPUT FINANCING

Digital tools for tracking and monitoring inventory purchases and turnover are allowing the development of business models that focus on offering MSEs inputs and inventory with appropriate credit terms

Business models that focus on offering inventory with credit terms are being developed, on top of digital tracking of inventory and input ordering

How the business model works:

MSE repays FI once inputs / inventory sold — **5**

Financial institution

MSE records all orders digitally which FI can see — **2a**

MSE

FI provides credit for products — **3**

Inputs / inventory provided on credit — **4**

2b

1

Input / inventory supplier may also share data on orders

Input / inventory provider

MSE makes order to input or inventory supplier

*Digital records of inventory turnover can be **used to provide credit terms** where repayment is made when inventory is sold. **Lending may be led by distribution companies and / or suppliers** (e.g. FMCG companies) who provide capital themselves **or in partnership with financial institutions***

Digital choices lenders are taking:

Origination:
- Credit terms offered to MSEs who have existing relationships with input and inventory providers

Credit assessment:
- Digital tracking of orders size and turnover, plus geo-location data (supporting analysis of economic trends at micro level) utilized to determine credit worthiness and amount of credit to offer
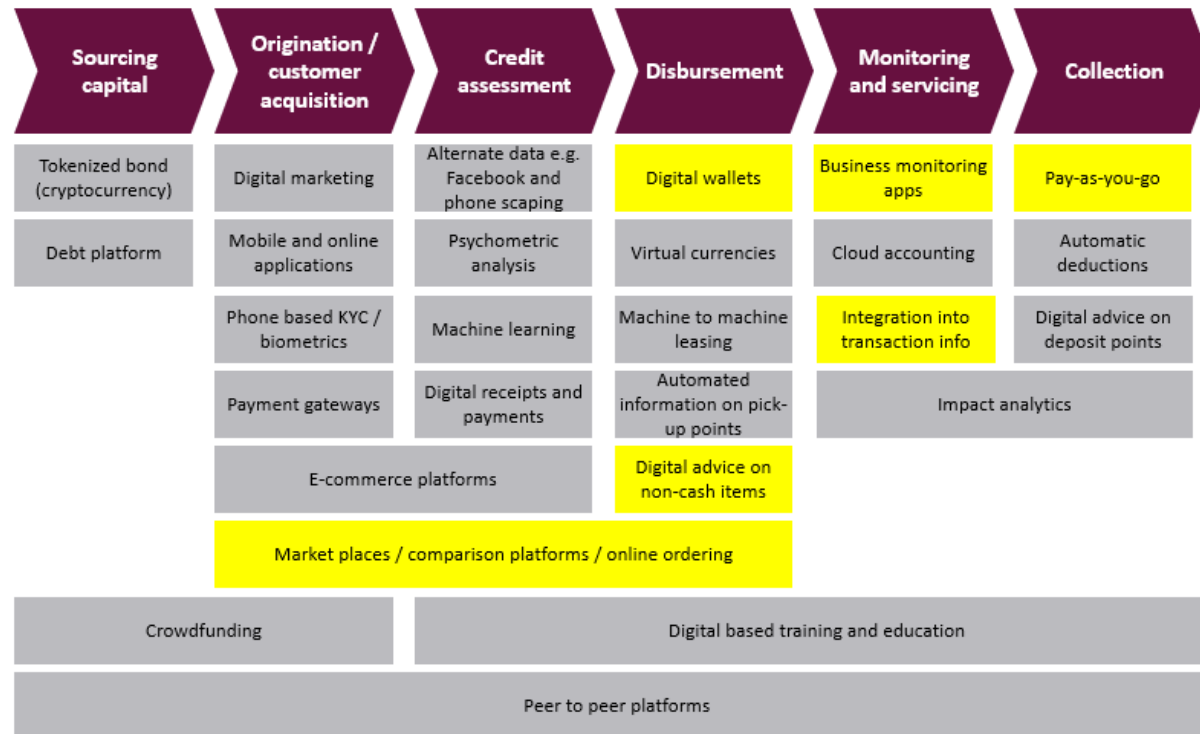
Credit disbursement:
- Credit provided in the form of physical goods or products used by the MSE to generate income

Loan repayment / recovery:
- Payment made at defined time after product delivery; existing models mostly rely on cash repayments, but opportunity for digital wallets exist

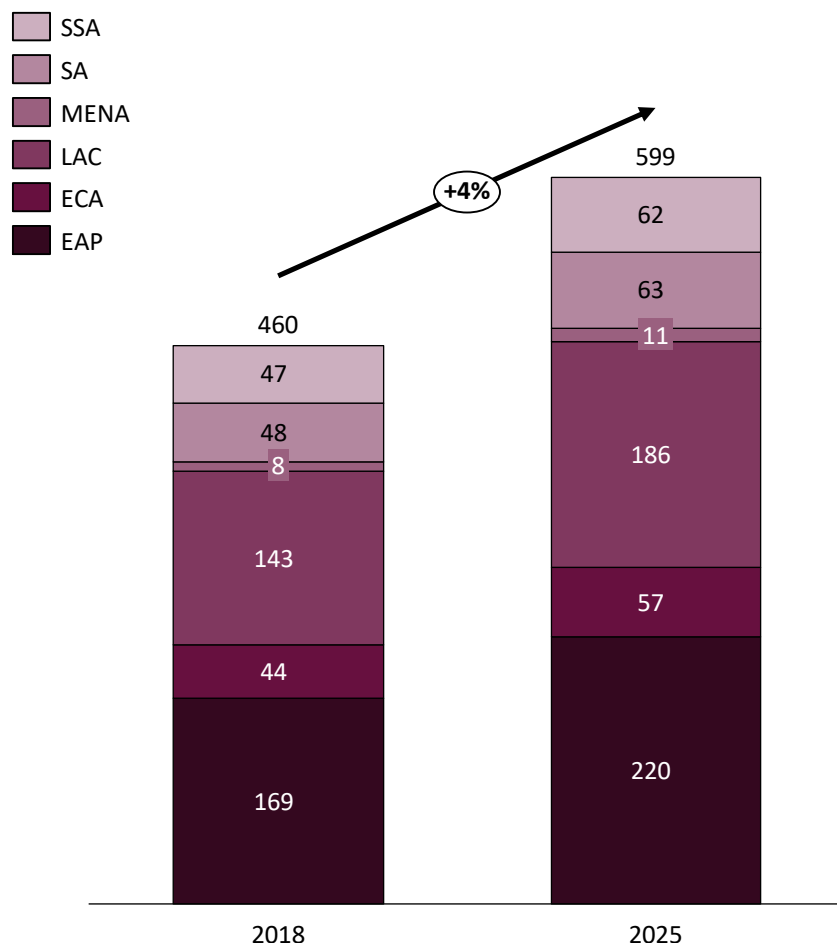# Digital tools for ordering and tracking inventory is allowing MSEs to move from cash based to credit based purchases

The digital tools driving this model:

Sourcing capital	Origination / customer acquisition	Credit assessment	Disbursement	Monitoring and servicing	Collection
Tokenized bond (cryptocurrency)	Digital marketing	Alternate data e.g. Facebook and phone scaping	Digital wallets	Business monitoring apps	Pay-as-you-go
Debt platform	Mobile and online applications	Psychometric analysis	Virtual currencies	Cloud accounting	Automatic deductions
	Phone based KYC / biometrics	Machine learning	Machine to machine leasing	Integration into transaction info	Digital advice on deposit points
	Payment gateways	Digital receipts and payments	Automated information on pick-up points	Impact analytics	
	E-commerce platforms		Digital advice on non-cash items		
	Market places / comparison platforms / online ordering				
Crowdfunding	Digital based training and education				
Peer to peer platforms					

- **App based tools for digital ordering and tracking of inventory** is allowing lenders to better determine the cash flow and subsequent credit worthiness of MSEs. **Few of these ordering tools have previously been available to or targeted at MSEs**

- **Geo-location software** is also being integrated into these tools to allow more **predicative assessment of sales based on micro conditions** such as weather

- **A lack of MSE knowledge** on the benefit of purchasing inventory with credit terms does, however, impede uptake

There is a USD 460 Bn lending opportunity in inventory finance today, growing to almost USD 600 Bn by 2025

Potential volume of lending (USD Bn)*

Legend:
- SSA
- SA
- MENA
- LAC
- ECA
- EAP

+4%

2018 (total 460):
- 47 (SSA)
- 48 (SA)
- 8 (MENA)
- 143 (LAC)
- 44 (ECA)
- 169 (EAP)

2025 (total 599):
- 62 (SSA)
- 63 (SA)
- 11 (MENA)
- 186 (LAC)
- 57 (ECA)
- 220 (EAP)

2018   2025

*This calculation accounts for lending demand only, and does not consider the current supply of inventory finance that may be provided to MSEs in emerging markets

The opportunity for lending:

- USD 460 Bn lending opportunity expected to grow by 4% YoY to USD 599 Bn by 2025

- Large prevalence particularly of small and micro retailers creates large lending opportunity

- It is estimated that **between 25% to 33% of MSEs who could use inventory finance are credit worthy** and would be approved if the costs to assess them were sufficiently low

- **Steady growth in potential lending driven by increasing availability and use of digital tools** (e.g. smartphones and tablets) for digital ordering and inventory tracking

- **The lending is this market likely consists of low value, short tenor transactions**: USD 300 - 1,000 for periods between 5 – 30 day, with fee-based pricing e.g. 3% on value of the loan

Source: European Central Bank Survey (2017); Stakeholder interviews; GSMA; Fit Small Businesses

The viability of inventory finance is driven by leveraging existing customer relationships and ensuring credit is used for income generating purposes

Value proposition of this business model

- Can be quickly scaled given **low cost of customer acquisition** with existing relationships already in place

- **High incentive** for **MSEs to repay** given inventory is essential to the business

- **Repayment aligned to business performance** with option to make repayment connected to sale of inventory

- Evidence suggests credit terms **facilitate rapid growth** for MSEs, and therefore benefit both borrower, lender and distributor

- **May be recourse to products** / inventory if not sold

Viability of this business model

Revenues
- Fee based at 2% - 4% of the value of the goods provided

Costs
- Customer acquisition cost of <1% of lending value given existing customer relationship

- Zero cost of capital, with large inventory suppliers having products with credit terms (30 – 90 days); pass a portion of terms to MSE

- No figures available on NPL

Breakeven / profitability
- Profitability in <1 year where existing relationships with MSEs exist

Key factors that are essential to this business model:
- Digital systems for ordering and tracking inventory use / turnover
- Efficient distribution systems for delivering products and knowing location of MSE

Can be delivered with zero capital outlay

This model is hindered by a lack of tools for digital ordering and a lack of understanding from MSEs on the value of inventory credit

Challenges to this business model

- Effective credit assessment **requires MSEs to order and track the use of their inventory online** – many MSEs do not have tools or knowledge on how to do this

- MSEs who this model is suited for, such as micro-retailers, often have **limited understanding on the benefits of credit terms**

- **Small ticket size** means significant volume required before attracting larger investors

- Administrative time and costs may be high in managing and following up on loans

- **Reliance on cash** as repayment mechanism makes collection expensive

- **Locks retailers in** to ordering from particular suppliers, thereby reducing flexibility for MSE

- **Limits to how much inventory finance can be provided to individual MSEs**, with MSE demand subject to consumer demand

Potential Solutions

- Support for the development and distribution of digital ordering systems that store and record MSE inventory, including **analogue solutions**

- **Provision of smartphones by inventory providers / lenders** to retailers who achieve certain order thresholds

- Provide micro and small **retailer focused training programs** and information booklets on value of credit terms

- **Facilitate partnership building** between FMCG companies, distributors and financial institutions who are suited to delivering this business model

- **Support the development of pilots** that test the optimum cost and revenue structures for providing inventory on credit

BUSINESS MODEL TAXONOMY 4: PLATFORM BASED LENDING

Platforms are allowing the holders of capital to lend to MSEs whilst avoiding the high costs of customer acquisition, assessment and servicing. Utilizing the balance sheets of larger lenders is required if serious reduction of the credit gap is to be achieved

Platforms are being used to improve the sourcing and provision of credit to MSEs by opening opportunities to a broader diversity of lenders
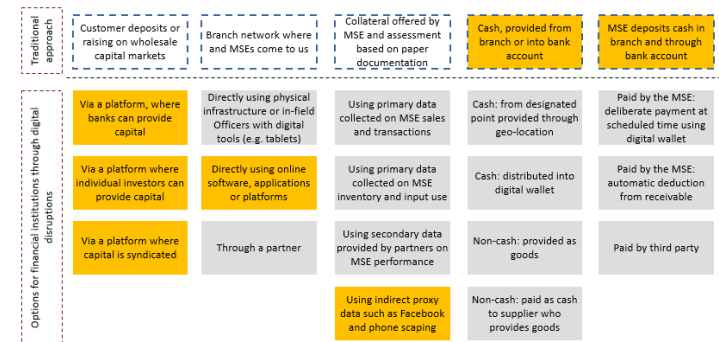
How the business model works:

Platform provider collects data to complete credit scoring

Sales, transaction and operations data

2

1

Platform provider

MSE applies for loan to platform provider

MSE

Credit score and debt need on platform

3

5

Platform provider allocates capital (intermediary may be used in some cases) and conducts ongoing monitoring of MSE

Platform for debt

Banks or investors access platform and choose where they will provide capital

4

Bank / investor

Bank / investor

Bank / investor

*Credit platforms are allowing MSEs to **access a broader range of lenders** whilst also providing a **tool for risk diversification**. **Platform providers conduct** a range of **important roles** in facilitating lending, including **collecting data for credit scoring** and **following up on repayment***

Digital choices lenders are taking:

Capital sourcing
- Connect borrowers directly to lenders through a platform, may include option to syndicate debt, where no lender can take on all a borrowers need

Origination:
- MSEs apply for credit with fintech through online or app based channels

Credit assessment:
- Fintech collects relevant documents from multiple digital sources and utilizes these to complete credit assessment and determine credit score

Credit disbursement:
- Lending generally through a bank account but may be provided to digital wallet

Improved credit assessments through the use of big data and the ability to syndicate debt to reduce risk has supported growth in platforms

The digital tools driving this model:

Sourcing capital	Origination / customer acquisition	Credit assessment	Disbursement	Monitoring and servicing	Collection
Tokenized bond (cryptocurrency)	Digital marketing	Alternate data e.g. Facebook and phone scaping	Digital wallets	Business monitoring apps	Pay-as-you-go
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	Market places / comparison platforms / online ordering				
Crowdfunding		Digital based training and education			
Peer to peer platforms					

- The digital tools used by platforms are **focused on capital sourcing, customer origination and credit assessment**

- **Improved credit assessments through big data and evolving credit scoring algorithms** are allowing platforms to become increasingly used and trusted by investors. Further, investors are encouraged by the promise of sound returns and low levels of risk by being able to syndicate debt requests

- Capital disbursement remains largely cash based, but **opportunity exists to move toward greater use of digital wallets**

Spotlight

afluenta crédito humano

Afluenta provides a platform connecting borrowers to lenders in **Argentina, Peru and Mexico**. Borrowers apply for loans online, and Afluenta vets the provided information by cross referencing against a broad range of online data sources. Afluenta then publishes the borrowing request and amount to lenders, accompanied by details on credit worthiness (and commiserate interest rates). **No one lender is able to provide more than 5%** of any lending requirement. **15% of all loans through the platform go to micro and small businesses**. Afluenta is working on a new credit line for MSEs only, on the platform.

Key business details:
- 20.800 loans issued
- Loan tenor from 12 – 48 months
- Rates vary from 9.9% to 47% p.a. depending on risk profile
- 95% of customers apply for a repeat loan
- Afluenta charges a commission to the borrower when money for the loan is provided

Lending through platforms presents a USD 43 billion lending opportunity in emerging markets

Potential volume of lending (USD billion)

Legend:
- SSA
- SA
- MENA
- LAC
- ECA
- EAP

2018 (total 43): EAP 19, ECA 5, LAC 12, MENA 5, SA 2, SSA 1

2025 (total 207): EAP 92, ECA 23, LAC 59, MENA 3, SA 22, SSA 8

+25%

The opportunity for lending:

- Platform-based lending is experiencing rapid growth in developed markets. Significant **opportunity exists to replicate these successes and growth rates for MSEs in emerging markets**

- It is estimated that platforms could meet 1 – 2% of credit demand in emerging markets. Total volume is, however, tempered by the need for borrowers to have adequate connectivity and access to digital tools that allow them to borrow through platforms

- **Expected CAGR of 25% reflects trends in platform growth for lending worldwide**, with the growth and the lending opportunity heavily concentrated in the more developed markets in East Asia and Latin America

Reducing the credit gap can not be achieved by fintechs alone, platforms offer the opportunity to access greater pools of capital

Value proposition of this business model

- **Low capital requirements**, making this a low cost, high margin lending opportunity for platform providers

- Provides opportunity for lenders to **improve balance sheet utilization** by deploying capital whilst avoiding costs of MSE acquisition, assessment and monitoring

- **Offers ability to syndicate lending between financial institutions**, thereby reducing risk and exposure to any particular borrower

- Provides lenders **opportunity to access flexible and improved credit scoring approaches**

Viability of this business model

Revenues
- Commission based at 2% - 6% of the ticket size

Costs
- High customer acquisition cost, 25% – 75% of commission given cost of marketing, monitoring and assessment

- Zero cost of capital

- NPL not applicable for platforms providers, with lenders taking the risk of no repayment

- Capex and Opex: overhead, set-up and legal

Breakeven / profitability
- Profitability in 2 – 3 years if volumes sufficient to cover capex and marketing costs

Key factors that are essential to this business model:
- Lenders must trust the integrity of the credit scoring on the platform
- Appropriate legal frameworks that protect the interests of both the borrower and the lender

Allows risk to be syndicated across many lenders

Source: LendIt, www.p2p-banking.com, Dalberg interviews

Lending platforms are not well established in emerging markets, trust needs to be built in the quality of credit assessments and credit offered

Challenges to this business model

- Banks and other traditional financiers **are reluctant to trust the data and credit scoring** of third parties

- Banks lose customer relationship and opportunities for cross sell when acting as a provider of capital only

- **Limited** ability to **control and monitor how capital is used by MSEs** when sourced through platforms

- **Repayment** by MSEs is **not aligned to business performance**

- Opportunities for **fraud may be enhanced** given limited direct connection between borrower and lender

- Lending platforms are not well known in emerging markets which leads to a trust and integrity gap for both lenders and borrowers

Potential Solutions

- Development of **appropriate government regulations** to build trust in the platforms and to minimize the chances of fraud

- Support the piloting of **multiple financial products through platforms**, not just credit products

- Encourage the **involvement of traditional financial institutions in the development of platforms** to ensure required risk measures are accounted for

- Support development of platforms that support **industry specific lending** e.g. platforms for just agriculture sectors etc.

- **Ensure all fees, charges** and activities of platform providers are **open and transparent** to support trust building

A CALL TO ACTION

Partnership brokering, appropriate regulation, targeted investment funds and digital tools specifically designed for MSEs in emerging markets are required to drive further growth in innovative models for lending to MSEs

The appropriate regulatory environment can improve trust of customers and support the expansion of digitally based lending models

Regulation helps

The **regulatory environment** for fintechs and alternate lenders **remains opaque in most emerging markets**

An appropriate regulatory ensures that:

1. **Lenders are clear** on their **rights and responsibilities** when lending to MSEs

2. **Lenders have the freedom to experiment** with different lending approaches whilst still ensuring MSEs are protected from unfair lending practices

3. **Data privacy laws are clear and transparent**, showing which data is being shared with whom

Government and regulators can also play a signification role in **supporting innovation by encouraging digital formats** (see adjoining examples) that will lead to opportunities for new lending models

> Development actors should focus on providing technical assistance to governments to ensure best practice regulatory environment is in place

IndiaStack

Introduced in 2016, IndiaStack is a set of **interlinked digital platforms, unique in scale and level of integration, that allow immediate payment** from one account to another via a Universal Payments Interface

Applications developed for this **interface will dramatically increase the number of digital payments occurring**; for example using QR code based payments, and open the way for new lending opportunities

E-invoicing

Eight countries in Latin America have made E-invoicing mandatory for virtually all businesses in a drive to improve tax compliance

The mandatory nature of this regulation will drive rapid growth in digital invoices, estimated at between 32% and 62% CAGR over the next 5 years and **pave the way for rapid growth in factor lending for MSEs in these countries**

Source: Spend Matters magazine, The Economist, Billentis

By combining banks balance sheets, fintech credit scoring and digital data, partnerships can help innovative lending models to grow quickly

PARTNERSHIPS

Fintech value add:

- Improved credit scoring through use of algorithms and machine learning
- Improved methods for credit disbursement and collection
- Appropriate coordination of partners, with value distributed accordingly

Data providers value add:

- Significant amounts of data on MSE performance and behaviors
- Existing relationships with customers
- Cheaper and more efficient customer acquisition channels

Fintechs

Data providers

Banks

Bank value add:

- Capital for lending
- Visibility and trust with MSEs
- Regulatory compliance and capacity to offer a range of different financial products

Partnerships have been impeded by a lack of understanding from partners on the value proposition of working together

Partnership challenges

- A lack of understanding of the benefits; banks in particular are risk averse and reluctant to work with partners

- Banks difficulty to adjust credit policies and practices in order to use data or credit scoring approaches from others

- Difficulty in appropriately allocating the value created to different partners

- Data providers don't want to share data given concerns on losing customer relationships

- Fintechs concern that larger institutions, such as banks, will steal their IP

Solutions

- DFI funding for sandboxes where partnerships can be tested to see what value is created and who are the beneficiaries

- Support banks to digitize current lending practices before bringing in outside partners. *First Access* is an example of a company providing this support

- Conduct pilots to determine where value is created and negotiate terms accordingly

- Conduct impact studies and highlight use cases showing the impact from partnerships

- Utilize honest brokers, such as from the donor community, to facilitate black box arrangements where IP is not shared

India leads the way in the development of partnership-led business models for lending to MSEs

Blockchain may be an effective tool for improving partnership management
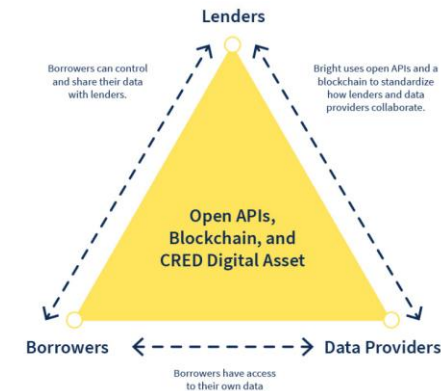
Challenges

- **Setting up partnerships is timely and costly**
- **Coordination challenges** hinder the number of parties involved and the size of partnerships
- **Lenders do not trust data brought in by partners**, with concern about the quality and integrity of the data
- **Allocating value** to parties within a partnership is difficult, with parties often unable to see the activities or value add of other parties

Blockchain as a potential solution*

- Blockchain allows data, loans, and repayments to **be transparent, immutable and available to parties in the partnership in real time**
- **High levels of transparency** mean that **value can be allocated efficiently** and without argument
- Infinite numbers of parties can join through **software that coordinates, analyzes and disseminates value** in all transactions

Launched in 2018 by the founders of Happy Loans, LendLedger is focused on substituting the 30+ data provider partnerships developed at Happy Loans with a **global, open network using blockchain**. This allows partnership coordination to be decentralized, with the **blockchain allowing any data provider and lender anywhere to connect directly in a transparent and open way**. LendLedger has open-sourced APIs to connect to the network and is launching a digital token to record all loans on the blockchain.

*Blockchain remains a nascent technology and its ability to effectively facilitate partnership coordination is yet to be proven

Source: Dalberg interviews and analysis

Capital should flow only to where it supports business models that are sustainable and which facilitate MSE growth and development

Action	Activity
Improve effectiveness of lending	• **Support development of digital tools that provide MSEs financial education and training**: it has been shown that credit accompanied with financial education improves returns by up to 50%. This will increase the probability of repayment and LCV to lenders • **Develop handbook on best practice unit economics for lending to MSEs**: fintech lending to MSEs has focused on customer acquisition at a time of strong global economic activity. There is a better need to understand unit economic if these models are to be successful and sustainable
Create funds for MSE lending in emerging markets	• Work with commercial funds managers to develop funds focused on MSE lending in emerging markets. This will **ensure that capital it allocated to financial institutions with the highest efficiency in the use of capital** • **Support Fund Managers** to **work with fintechs to better understand unit economics** and to **build businesses that are structured to scale**. Whilst investment groups such as Quona and APIS do currently offer this support in emerging markets, more is needed

Fintechs argue that a shortage of capital is the main constraint to their business. Investors say capital is adequate but there is a lack of investible businesses. If Fintechs understand and improve their unit economics and capital will follow

"Most innovative SME lenders that use digital tools don't need capital. They need business models that work - where the costs and revenues of the business are clearly understood. If they are good SME lenders, the money will follow"
Interviewed expert

Digital tools that designed to specifically meet the needs of MSEs in emerging markets will allow business models to grow and scale more quickly

Challenges

- Financial institutions cannot get the data needed to conduct credit assessment because **MSEs do not have or use digital tools**
- Where MSEs do have digital tools, they have **limited knowledge on how to use these**
- Off-the-shelf digital tools and **software is not designed to meet the needs** and specifications of **MSEs in emerging markets**

Solutions

- Development support should be provided to **fund the creation of software tools specifically meet on emerging market needs**
- **Broker relationships** between businesses who develop digital tools that effectively collect data in emerging markets and financial institutions who could use those tools

ARTOO

Artoo has **developed software that makes it easier and more cost efficient for banks to lend to MSEs**. This software allows lending officers to easily conduct KYC, digitize documents and finalize credit assessments in the field. It also provides MSEs their credit scores and outlines what is needed to improve these. Artoo has has served **10 lending institutions in India and has conducted 450,000 credit assessments**

4G CAPITAL

4G Capital conducts in-field origination and credit assessments using 'smart questions' and a proprietary algorithm specifically **designed according the characteristics of their East African customer base**. On-going financial education and training is designed to work on all types of digital devices including both smart phones and feature phones

ANNEX 1 | Definitions of digital disruptive tools

Definitions on digitally disruptive elements being used by lenders (1/2)

Item	Definition
Sourcing capital	
Tokenized bond	Digital currency being used to source capital
Debt platform	Offering MSE debt available on a platform where Financial Institutions have a choice to provide the capital. This capital is generally provided to the fintech who makes the offering available and on-lends
Crowdfunding*	Financial intuition raising money for on-lending through online platforms
Peer 2 Peer*	Connecting individual companies and individual lenders. The manager of the P2P platform is responsible for credit assessment and all ongoing management, monitoring and repayment / collection
Origination	
Digital marketing	Advertising credit products through online tools e.g. Adwords or Facebook
Mobile and IVR based applications	Phone based systems where application for credit can be lodged
KYC / biometrics	Online or app based options to upload identity documentation and / or provide fingerprints
Payment gateways	Online systems that facilitate digital payments. Borrowers may be given the option to access credit in order to increase the speed with which cash is received
E-commerce platforms*	Online system for selling products. Borrowers may be given the option to access credit in order to increase the speed with which cash is received
Market places / comparison platforms / online ordering*	Online systems where MSE buy products and there may be a delay between having to pay for the product and receiving cash e.g. airline originators, inventory purchases
Credit assessment	
Alternate data	Data scrapped from digital sources (e.g. Facebook) or phones
Psychometric analysis	Online testing where a series of questions are asked to profile a potential borrower
Machine learning	Continual improvements in credit assessments through feedback loops on borrower performance
Digital receipts and payments	Use of digital documents / evidence on business cash flow performance to conduct assessment

*these items are cross cutting

Definitions on digitally disruptive elements being used by lenders (2/2)

*these items are cross cutting

Item	Definition
Disbursement	
Digital wallets	Money that can be transacted though digital wallets, such as mobile money
Virtual currencies	Money that is transferred or transacted using cryptocurrency
Machine to machine leasing	Credit provided in the form of an asset rather than cash with the asset able to be remotely disabled if there is payment default
Automated pick-up points	Digital advice given on where borrower can collect cash
Digital advice on non-cash items	Information sent digitally to a provider of inventory or inputs advising that credit terms have been approved and that products can be disbursed
Monitoring and servicing (note that monitoring and servicing is closely related to credit assessments, particularly for repeat loans)	
Business monitoring apps	Applications that can be used to record transactions, invoices and general business performance
Cloud accounting	Online accounting software that can be tracked and reviewed by lender
Integrate transaction information	Lender able to automatically see all transactions that were performed using digital tools e.g. POS machine, card payments, mobile money payments etc.
Digital training and education*	Training that is delivered using online tools or apps
Impact analytics*	Online or app based tools (e.g. surveys) for tracking outcomes from lending
Collection	
Pay-as-you-go	Ability to make regular small payments using digital channels
Automatic deductions	Ability to collect payment from transactions without borrower interference
Digital advice on collection points	Digital advice given on appropriate locations to deposit cash to repay loan

ANNEX 2 | Methodology for market sizing

Our analysis uses macro and firm level data to estimate the size of the market demand for credit from MSEs in emerging markets

Steps taken in calculating credit demand

1 Number of formal MSEs

The number of formal MSEs per region is calculated with data from the World Bank's MSME country indicators and IFC (2017) estimates

2 Location of MSEs

Data on the relative distribution of MSEs is taken from the WB MSME Country Indicators, weighted and scaled to the regional level

3 Number of informal MSEs

Data on the size of the shadow economy is used to proxy MSE activity in the informal sector per region

4 MSE sectors and Average Sales

MSEs divided into 3 sectors: retail, manufacture and services. Average sales estimated for each sector from WB Enterprise Surveys. Data weighted and averaged per region

5 Estimate credit need

Debt-to-sales ratios are based on IFC (2017) estimates, allowing estimates of potential debt demand

Three scenarios created

The analysis was divided into three different scenarios:

i. Low case

- Most conservative scenario
- Takes lowest MSE estimates based on scaled WB MSME data
- Assume the same distribution of enterprises in the formal and informal sectors

ii. Base case:

- Moderate scenario
- Total number of MSEs calculated with IFC (2017) estimates
- Assumes that the relative distribution of MSEs in the informal sector is skewed towards microenterprises

iii. High case:

- Most aggressive scenario for the potential credit gap
- Total number of MSEs calculated with IFC (2017) estimates
- Assumes the same distribution of enterprises in the formal and informal sectors

Determining the opportunity

The potential lending opportunity of four business models was estimated using the following parameters:

i. Digital transaction tools used e-commerce sales as an initial proxy and verified against available data on growth in use of digital transaction tools

ii. Invoice financing, using regional estimates on share of digital invoices and average lending against invoice value

iii. Inventory finance, using estimates from developed nations on the number of businesses the get approved for inventory finance and the share of smartphone penetration as a proxy for user access

iv. P2P financing platforms, using the lending potential of P2P platforms in advanced markets as a benchmark