Inclusive Digital Banking: Emerging Markets Case Studies

Ivo Jeník and Arisha Salman
November 2, 2020
Speakers

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Financial Sector Specialist

Arisha Salman
Financial Sector Analyst
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<td>10 min</td>
<td>Introduction</td>
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<td>Case studies: Overview</td>
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<td>20 min</td>
<td>Accelerating financial inclusion through new digital banks</td>
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Logistics

slido Slido Polls
• Go to: www.slido.com
• Enter event code: CGAP

WebEx Q&A/Chat
• Q&A: Post specific questions
• Chat: Have open ended conversations

Other Logistics
• Audience mics will remain muted
• Webinar will be recorded and shared
• Presentation will be shared
Introduction

Persisting Exclusion & Digital Banks
Over the past decade, digital technology has helped advance financial inclusion.

1.2 Billion
Individuals gained access to formal financial services between 2011 and 2016

4.4%
Adults who had a mobile money account globally in 2016

52.2%
Adults made or received digital payments in 2016
But financial inclusion, while broadening, remains shallow

- Progress on savings, credit, and insurance has been far slower, barely rising at all even as accounts become more commonplace.
- Lack of financial depth limits the usefulness of the accounts, resulting in low use and high dormancy.
- 1.7 billion people remain excluded, even from basic accounts.

Source: Findex (World Bank, 2017)
Customer adoption and transaction rates remain modest

Gaps in current financial services offerings:

- Limited value proposition offered through digital offerings
- Absence of complete range of financial services
- Resistance of FIs to change business models, management culture, operating procedures
- Modest customer adoption and engagement rates
Inclusive providers face constraints

Banks in developing markets often are limited by legacy operational models.

- Distribution is a major challenge for banks that depend on costly branches.
- IT systems often are outdated and expensive, which limit banks’ ability and flexibility to improve products or develop new ones.
- Product management practices have been slow to adopt agile approaches, human-centered design methods.

Mobile money operators (MMOs) often are constrained by their business model and risk appetite.

- The revenue model centers on transaction fees, limiting the options MMOs have for creating broader offerings.
- Regulation typically limits the ability of MMOs to offer services beyond basic payments. Almost none has acquired a full banking license, and strategic partnerships with banks often are slow and difficult.
Customers do not find relevant products

Most e-money accounts focus on payments, with limited savings, credit, or insurance offerings associated with them.

Direct and indirect costs of accessing services tend to be high.

Products often are not designed to meet the needs and circumstances of low-income customers.

Customer activity rate among providers offering a credit, savings or insurance product (compared to 26% customer activity rate among providers who do not)

Source: GSMA, 2019
A new generation of fully digital retail banks promises to address those limits by

- Reaching underserved clients through alternative distribution channels, innovative KYC, and alternative credit scoring
- Offering products that are tailored to the needs of unserved or underserved customers, transparent, and user-friendly
- Pricing products more attractively than competitors
- Offering a greater variety of products than existing mass market providers
Inclusiveness of digital banks can be assessed across 4 dimensions

<table>
<thead>
<tr>
<th>COST</th>
<th>Low operating costs and lower CapEx may enable a lower floor for pricing overall</th>
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<tbody>
<tr>
<td>FIT</td>
<td>Improved business intelligence supported by technology leads to greater personalization</td>
</tr>
<tr>
<td>ACCESS</td>
<td>Bring banking closer to wider customer segments through technology and alternative distribution</td>
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<tr>
<td>EXPERIENCE</td>
<td>Customer-centric approach improves confidence through intuitive interfaces, individual approach, and responsiveness</td>
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<th>COST</th>
<th>Lower cost of physical infrastructure</th>
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<tr>
<td>FIT</td>
<td>Technology stack provides flexibility to add products and tailor functionality (including catering to niche customer segments)</td>
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<td>ACCESS</td>
<td>Digital channels and 3rd party distribution (including agents) bring services closer to customers and make them available 24/7</td>
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<td>EXPERIENCE</td>
<td>Convenient 24/7 availability of services</td>
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<th>Automation of back-end and front-end functions</th>
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<td>EXPERIENCE</td>
<td>Behavioral nudging promotes beneficial consumer behavior</td>
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<th>COST</th>
<th>RegTech lowers compliance cost</th>
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<tr>
<td>ACCESS</td>
<td>Alternative data expand eligibility (e.g., access to credit)</td>
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<td>EXPERIENCE</td>
<td>Greater control and transparency increases customer trust</td>
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<th>COST</th>
<th>Cloud-based, SaaS services shift costs CapEx to OpEx</th>
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<td>ACCESS</td>
<td>Intuitive UI/UX makes the service easier to access</td>
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<tr>
<td>EXPERIENCE</td>
<td>Integrates into the lifestyle of digitally native customers</td>
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<td>FIT</td>
<td>Integrated personal finance management tools help with personal finance</td>
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<tr>
<td>ACCESS</td>
<td>Alternative data expand eligibility (e.g., access to credit)</td>
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<th>COST</th>
<th>Service-oriented architecture and open APIs create flexibility and efficiency in designing suitable products</th>
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Three promising business models in digital banking

<table>
<thead>
<tr>
<th>Model</th>
<th>Examples</th>
<th>Key Characteristics</th>
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<tr>
<td><strong>Fully digital retail bank:</strong> A traditional banking business model improved with latest digital technologies to offer a better banking experience for lower cost.</td>
<td>TymeBank (S. Africa) 811 (India) UnionBank (Philippines)</td>
<td>Cheap, Fast, Convenient</td>
</tr>
<tr>
<td><strong>Marketplace bank:</strong> A banking response to e-commerce and fintech competitors in the form of a one-stop shop for financial services run by a bank, offering easy access to a variety of products/services.</td>
<td>Starling Bank (UK) UnionBank (Philippines)</td>
<td>Economies of scope and scale</td>
</tr>
<tr>
<td><strong>Banking-as-a-Service:</strong> Tech companies with a banking license that represent the vision of banks as market utilities. Improves access to cutting-edge technology and brings economies of scope and scale.</td>
<td>Banxy-Fidor (Algeria) Accendo (Mexico)</td>
<td>Cutting-edge technology</td>
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Case Studies
Overview
CGAP has developed case studies for three fully digital retail banks, each of which offers a unique value proposition…

<table>
<thead>
<tr>
<th>METHODOLOGY</th>
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<tr>
<td><strong>Primary interviews</strong></td>
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<tr>
<td>Emerging players</td>
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<tr>
<td>Incumbents</td>
</tr>
<tr>
<td>Software provider</td>
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<tr>
<td><strong>UI/UX testing</strong></td>
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<tr>
<td>Demos</td>
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<tr>
<td>Site visits</td>
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<tr>
<td><strong>CGAP assessment</strong></td>
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<tr>
<td>Business model</td>
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<tr>
<td>Company culture</td>
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<tr>
<th>SELECTION CRITERIA</th>
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<tr>
<td>Diversity of business models</td>
</tr>
<tr>
<td>Time in operation</td>
</tr>
<tr>
<td>Learning opportunities</td>
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<td>Lessons to share</td>
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TymeBank (South Africa)

Modern technology enabling creative solutions for inclusion

**VALUE PROPOSITION**

- Lower pricing and competitive savings rates in comparison to competitors
- Convenient access via a combination of digital channels and a vast network of physical touch points (in retail stores)
- On-boarding of customers in under 5 minutes through digital kiosks
- Incentive programs to promote certain customer behavior

**EDGE**

- Distribution through kiosks in 800+ retail stores
- Lower pricing and competitive savings rates
- Advanced customer data analytics

<table>
<thead>
<tr>
<th>IMPACT</th>
<th>PRODUCT</th>
<th>VALUE PROPOSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 million</td>
<td>Transaction/Savings account ✓</td>
<td>• Lower pricing and competitive savings rates in comparison to competitors</td>
</tr>
<tr>
<td>customers in</td>
<td>Debit/Credit card ✓</td>
<td>• Convenient access via a combination of digital channels and a vast network of</td>
</tr>
<tr>
<td>less than 2</td>
<td>Remittances ✓</td>
<td>physical touch points (in retail stores)</td>
</tr>
<tr>
<td>years</td>
<td>Consumer credit ✓</td>
<td>• On-boarding of customers in under 5 minutes through digital kiosks</td>
</tr>
<tr>
<td>110,000</td>
<td>PFM ✓</td>
<td>• Incentive programs to promote certain customer behavior</td>
</tr>
<tr>
<td>approx. number</td>
<td>MSME products ✓</td>
<td></td>
</tr>
<tr>
<td>of customers</td>
<td>Other ✗</td>
<td></td>
</tr>
<tr>
<td>added monthly</td>
<td></td>
<td></td>
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<td></td>
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TymeBank has evolved into a fully digital retail bank from its first iteration in 2012

- **2012**: Tyme is established as an independent entity
- **2012**: Tyme is part of a Deloitte Consulting Project funded by the MTN Group
- **2015**: TymeDigital secures full banking license from SARB
- **2017**: African Rainbow Capital Financial Services acquires CBA’s majority stake in TymeDigital; TymeDigital renamed to TymeBank
- **2018 Nov**: Full market launch in February 2019; TymeBank releases plan to launch consumer credit and SME products
- **2018 Dec**: TymeBank’s soft launch goes live with 20 Pick-n-Pay Stores; product offering includes transaction and savings accounts
- **2019**: Commonwealth Bank of Australia acquires 100% of Tyme; renames it TymeDigital
TymeBank caters to a young customer base that is spread across rural and urban South Africa.

TymeBank users are split evenly on gender

Customers are young, but not just millennials

The customer activity rate is high

Users tend to transact more over time

- 50/50
- 26–35 years old
- 53%
- 50%

Average number of monthly transactions (active user):

- January 2019: 4.7
- March 2020: 7.2
- Aug 2020: 7.7
An incumbent bank testing a digital play to expand market share

<table>
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<th>VALUE PROPOSITION</th>
<th>EDGE</th>
</tr>
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<tbody>
<tr>
<td>2X increase</td>
<td>Transaction/Savings account</td>
<td>Simple and affordable products</td>
<td>Video eKYC</td>
</tr>
<tr>
<td>in KMB’s customer base since launching 811 (Growth from 8 to 16 Mn Customers)</td>
<td>Debit/Credit card (KMB)</td>
<td>• Zero-balance savings account</td>
<td>Prominent marketing campaign</td>
</tr>
<tr>
<td>8 million</td>
<td>Remittances (KMB)</td>
<td>• Free transactions (within monthly limits) and limited fees</td>
<td></td>
</tr>
<tr>
<td>Number of new customers added since launch</td>
<td>Consumer credit (KMB)</td>
<td>Real time, digital onboarding</td>
<td></td>
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<tr>
<td></td>
<td>PFM</td>
<td>• Biometric led (Aadhaar enabled) digital eKYC</td>
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<tr>
<td></td>
<td>MSME products</td>
<td>• Video KYC</td>
<td></td>
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<tr>
<td></td>
<td>Other: Investments (KMB)</td>
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Kotak811 was borne as a fully digital retail offering of Kotak Mahindra Bank (KMB)

Kotak Mahindra Financial Ltd receives its banking license to become Kotak Mahindra Bank

Kotak Mahindra Bank acquires BSS Microfinance

Kotak Mahindra Bank launches 811, its own fully digital retail bank

8M total Kotak Mahindra Bank customers before launch

Kotak Mahindra Bank becomes India’s second largest private sector bank by capitalization

16M Kotak Mahindra Bank customers after 18 months of 811’s launch

Demonetization and OPT-based Aadhaar verification prompt Kotak Mahindra Bank to launch a digital banking solution

Kotak Mahindra Bank merges with ING Vysya Bank to expand customer base
Kotak811 caters to a large proportion of young, first-time bankers and underserved

- Attracts young, male customers (91% younger than 40 years)
- Most customers live in urban and peri-urban areas (58% customers live in the Top 20 Cities)
- Most customers are in underserved segments
  - 28% self-employed
  - 25% students, homemakers, retired
An incumbent with a vision of banking blended with e-commerce

**IMPACT**

- **5 million**
  - Number of customers served (digital channels & branches)

- **65 million**
  - Number of customers in target market

**PRODUCT**

- Transaction/Savings account ✓
- Debit/Credit card ✓
- Remittances ✓
- Loans ✓
- PFM ✓
- MSME products ✓
- Other: Corporate cash management, BaaS ✓

**VALUE PROPOSITION**

- Expanding rural outreach, to MSMEs, and to lower-income segments through a comprehensive digital transformation strategy
- Creating an enabling ecosystem for other players, particularly rural banks, to modernize
- Implementing a marketplace strategy that integrates financial services with e-commerce

**EDGE**

- Multidimensional digital strategy
- Cooperation with rural banks
- Focus on e-formalization of MSMEs
UnionBank has evolved from a branch-based universal bank to a bank focused on innovation through multiple digital offerings.

- Incorporated as Union Savings and Mortgage Bank
- Merged with International Corporate Bank
- Acquired CitySavings Bank which now operates as its subsidiary
- Spun-off UBX into an independent entity
- Acquired a license to operate as a universal bank
- Merged with International Exchange Bank
- Launched UBX, an internal fintech innovation and incubation arm

Timeline:
- 1968
- 1992
- 1994
- 2006
- 2013
- 2016
- 2019
UnionBank has adopted a 4-pillar digital transformation strategy to develop capacity to serve different market segments

<table>
<thead>
<tr>
<th>A. Digitization of UnionBank</th>
<th>B. The Future of Banking</th>
<th>C. Digitization of CitySavings Bank</th>
<th>D. “Digital-Only” Bank</th>
</tr>
</thead>
</table>
| Transformation of UnionBank’s main banking products and services into digital offerings | Structured approach to experimentation with emerging technologies and business models  
Led by UBX, an innovation lab that was recently spun-off into a wholly-owned UnionBank subsidiary | Mobile technology to enable UnionBank’s subsidiary, CitySavings Bank, to extend financial services to underserved segments particularly in rural areas | “Digital-only” banking proposition  
One of the early elements of this strategy was the launch of the EON Cyber Account, an electronic savings account that is powered by UnionBank |
UnionBank targets underserved segments and plans to reach 65Mn customers

Customers belong to underserved segments

60% or 3 million

Approx. customers are outside urban areas

50% or 2.5 million

Reach to rural customers through i2i initiative

50 rural banks in i2i network

Wide reach through new initiatives
Accelerating Financial Inclusion through New Digital Banks
Digital banks have several features that help them advance financial inclusion

**COST**
- Attractive pricing and incentives

**ACCESS**
- Remote customer onboarding
- Innovative distribution models

**FIT**
- Improved understanding of customers using data

**EXPERIENCE**
- Essential products
Essential products

- Focus on solutions that speak to the mass market
- Simplicity as a key design principle in products, processes, and interfaces
- Products that cater to daily needs
- Customer feedback used as input in design process
- Defined customer journeys from loyalty to profitability
Essential products

Digital banks cater to the most critical financial needs of customers

Example: TymeBank aims to offer a full range of basic financial products to individuals and MSMEs with low fees, high returns (passing operational cost savings to their clients)

EveryDay Account
- Paperless sign-up process
- No sign-up fee or monthly charges
- No minimum balance requirements

GoalSave
- Progressive interest rates (from 4% to 7%)
- Higher than competitors

Lending (to be launched)
- Buy now pay later & consumer loans
- MSME loans
- Alternative credit scoring based on purchase (basket-level) and device data
“We are focused on giving clients core products they need in their daily financial lives.”

Coen Jonker, TymeBank co-founder.
Essential products

Digital banks cater to the most critical financial needs of customers

Example: Kotak811 targets individuals across socioeconomic and cultural groups termed as “dreamers” with its basic interest-bearing savings accounts that address basic financial needs

811 Zero Balance Savings Account
- No account opening fees
- Free virtual debit card
- 1 free deposit & withdrawal monthly (US$134)
- Physical debit card (US 2.5/year)
- Up to 4% p.a. interest yield
- 5 free monthly withdrawals from ATMs

Offered through KMB
- Short-term loans
- Credit cards
Improved understanding of customers through data

- Data enables more flexible business intelligence
- Frequent iterations of products (daily / weekly)
- 360° view of customer data
- Customer feedback loop integrated in design process
- Test-and-learn approach
- Non-financial data
Improved understanding of customers through data

Improving customer data trails

Example: UnionBank’s digital transformation strategy rests on its ability to gather and analyze diverse customer data. More importantly, they help customers generate digital data trails.

**GLOBALLINKER**
E-commerce site that links 270,000 MSMEs and help them grow their online business.

**bux**
Merchant payments solutions leveraging Facebook Messenger and other channels; serving 30,000 MSMEs

**Sentro**

**SeekCap**
- Marketplace lending platform that allows MSMEs to get “same day” loan approvals and uses alternative credit scoring
- Partnership with OneConnect (Chinese Fintech) to develop AI-powered loan engine
- Reduced time for loan processing and operating costs are equal to 2 to 3% of loan disbursements, including acquisition costs of around 1% of the loan amount
Improved understanding of customers through data

Risk-based pricing

Example: Tyme plans to leverage its rich data and algorithmic decisioning platform to offer consumer loans. It will use basket-level data and device usage data to assess credit-worthiness. This will allow them to optimize the cost of credit to the customer and expand credit-worthiness, even of thin-file customers.

1. **Tyme customers** use debit card linked to EveryDay Account to shop at Pick n Pay and Boxer stores

2. **TymeBank collects** basket level data of customers to understand spending patterns

3. **TymeBank will leverage this data** to develop credit decisioning algorithms
Innovative distribution models

- Alternatives to in-house brick-and-mortar branches and agents
- Blended solutions (offline-online) leveraging the advantages of both
- Leveraging on players with existing footprint (rural banks, grocery stores, ATMs)
- Innovative solutions (integration with till machines, kiosks)
- Increasing diversity of distribution channels
Innovative distribution models

Example: TymeBank customers sign up for accounts through a combination of web/mobile channels and a vast network of retail stores present nationwide, including in low-income areas.

85% Customers on-boarded at 800+ retail stores

93,500 Approx. number of new customers each month through kiosks

Ambassadors provide personalized assistance to customers during on-boarding

**Kiosks**

Customers sign up for accounts and get personalized debit cards in **less than 5 minutes.**

Kiosks consist of touch screen, fingerprint reader, camera, and a card printer.

Tyme says the cost of running a kiosk is about 4% of the cost of running a bank branch. This includes the servicing cost, the fee paid to the partners & ambassadors.
UnionBank: i2i

Example: i2i is a version of Banking-as-a-Service that caters to rural banks, creating a vast distribution network for UB in remote and underserved areas.

A cloud-based blockchain platform that gives rural banks access to additional banking services (fund transfers, bill payments, loan application processes, ERP management).

i2i promotes interoperability of rural banks and reduces the time it takes to complete processes like fund transfers across the Philippines.

More than 50 participating rural banks (out of more than 400).

UnionBank wants to leverage the network to reach out to 65m customers (the financial inclusion in the Philippines is 34% of adult population).
Remote on-boarding of customers

- Overcoming physical distance
- Using alternative methods of customer identification and verification
- Minimum friction, speed and convenience as key design principles
- Biometrics and data sharing among key enablers
- Cost efficiency for the provider and for the customer
Remote on-boarding

Kotak811 customers can be on-boarded completely digitally through video-based eKYC process

Customers begin the on-boarding process through mobile-app/web

Customers enter their personal details as well as Aadhaar and PAN card numbers

Customers need to:
- Have uninterrupted access to data connectivity
- A clear background that allows bank representatives to see their faces
- A blank sheet of paper which the customer has to sign on

- Customer Relationship Number and Account Number are generated
- Customer gets a full-fledged bank account with no restrictions on transactions or account balances
Remote on-boarding

On-board customers cheaper and faster by leveraging existing infrastructure and cutting-edge technology

Example: UnionBank’s partnership with Jumio to implement a fully automated eKYC solution

End-to-end time shortened from 15 minutes to 5.
Risk of on-boarding related fraud slashed by 30 to 40%.

Solution improves the speed, safety, and security associated with the digital onboarding process

Artificial intelligence
Face-based biometrics
Computer vision
Certified liveness detection

Techniques ascertain the identity of an individual opening an account or of an individual making digital transactions
Remote on-boarding

On-board customers cheaper and faster by leveraging existing infrastructure and cutting-edge technology

Example: Tyme taps into SA’s universal biometric National ID system and Digital ID Database to facilitate on-boarding.

End-to-end signup process is fully paperless and takes less than 5 minutes. Customer acquisition cost is just US$3.00 including card printing.
Attractive pricing and incentives

- The growth stage comes with aggressive pricing
- Long-term objective to remain competitive
- Commitment to translate increased margins into lower prices
- Financial (yield) and non-financial (loyalty programs) incentives to promote certain behavior (e.g., saving)
Attractive pricing and incentives

Digital banks offer products that are better priced than competitors’ products

Example: TymeBank charges a significantly lower transaction fee than competitors: Its customers pay 40% less than those at the next most affordable bank for 12 transactions

<table>
<thead>
<tr>
<th>Bank</th>
<th>Transaction fees on 12 transactions</th>
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<tbody>
<tr>
<td>TymeBank</td>
<td>12.0</td>
</tr>
<tr>
<td>African Bank</td>
<td>20.6</td>
</tr>
<tr>
<td>FNB</td>
<td>34.8</td>
</tr>
<tr>
<td>Capitec</td>
<td>36.6</td>
</tr>
<tr>
<td>Standard Bank</td>
<td>36.9</td>
</tr>
<tr>
<td>NedBank</td>
<td>38.4</td>
</tr>
<tr>
<td>Absa</td>
<td>43.3</td>
</tr>
</tbody>
</table>

Source: UBS 2019
Business Model
Digital banks typically have the following core revenue streams:

- Interchange fee on card transactions
- Transaction fee
- Intermediation revenue (Net interest margin)
- Physical debit card issuance fee
Sustainable business model

While still being in their growth stages, the studied firms have clearly defined pathways to profitability (1)

KMB is expanding the “size of the pie” through 811. The customer base grew from 8Mn to 16Mn in 18 months

Once on-boarded, customers embark on any of three paths to KMB products:
- Credit-driven
- Deposits-driven
- Investment-driven

Cross-selling helps improve ARPU for the KMB as a whole (inclusive of 811)
Sustainable business model

While still being in their growth stages, the studied firms have clearly defined pathways to profitability (2)

**TymeBank**: Tyme has been onboarding ~110,000 customers per month, 85% of which through their kiosks for a cost of around US$3.00 per customer and 15% via web for around US$0.60.

The cost of running a kiosk is ~4% of the cost of running a bank branch.

The key for success will be uptake of its consumer and MSME lending products.

**UnionBank**: Testing different strategies, including API developer portal, 'BaaS', crowdfunding, e-commerce accelerator, merchant payments. Many services offered as freemium at this stage, assuming profits from scale once the business grows and certain services are monetized.
Digital banks feature a different business model than ‘neobanks’

**Digital Banks**
Deriving revenue from intermediation

- Digital banks take in deposits...
- ...and on-lend them to credit customers.

**Neobanks**
Dependence on transactional fees

- Neobanks issue cards...
- ..and get most revenue from fees (issuance, interchange)
Klar (Mexico): An example of neobank

IMPACT

150,000 customers
20,000 credit lines

Goal (end of 2020)
500,000 customers &
100,000 credit lines

VALUE PROPOSITION

Extend formal credit to previously excluded (or underserved) customers based on an innovative credit underwriting model using the purchase and behavioral patterns of debit card customers

PRODUCT

<table>
<thead>
<tr>
<th>Product</th>
<th>✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transaction/Savings account</td>
<td>✓</td>
</tr>
<tr>
<td>Debit/Credit card</td>
<td>✓</td>
</tr>
<tr>
<td>Remittances</td>
<td>✓</td>
</tr>
<tr>
<td>Loans</td>
<td>✓</td>
</tr>
<tr>
<td>PFM</td>
<td>✓</td>
</tr>
<tr>
<td>MSME products</td>
<td>X</td>
</tr>
<tr>
<td>Other</td>
<td>X</td>
</tr>
</tbody>
</table>

EDGE

On-boarding through mobile app and web-based channels
Combination of deposits and lending without a banking license
Credit card available to thin-file customers
Unlike licensed banks, Klar’s regulatory status does not allow it to intermediate retail deposits.

To overcome the barrier, Klar operates two independent companies:
- Klar’s regulatory status is less significant from a customer’s point of view but it limits Klar’s revenue structure.

Klar
owns 2 companies

- E-Money Provider for accepting deposits
- Credit Provider for credit operations
Enabling Factors
### Technology Stack: Leveraging modern technology platforms to overcome challenges associated with legacy systems

<table>
<thead>
<tr>
<th>Modular Architecture</th>
<th>Cost Effectiveness</th>
<th>Scalability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved control over front-end</td>
<td>Digital banks book their tech stack</td>
<td>Most, and sometimes all, of a modern stack is</td>
</tr>
<tr>
<td>channels for user interfaces,</td>
<td>costs as operating expenses</td>
<td>cloud-based</td>
</tr>
<tr>
<td>business rules to configure products</td>
<td></td>
<td>Cloud-based stack make it possible to scale</td>
</tr>
<tr>
<td>and services</td>
<td></td>
<td>according to business needs</td>
</tr>
<tr>
<td>Stack integrates easily with 3rd</td>
<td>Tech-related expenditures can be</td>
<td>Partnerships offer a lever for scale</td>
</tr>
<tr>
<td>party providers, including FinTechs</td>
<td>calibrated with the growth of the business</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective Management of Data</td>
<td>Agile Product Development Culture</td>
<td></td>
</tr>
<tr>
<td>Data is more easily managed in a</td>
<td>Driven by company culture and organization</td>
<td></td>
</tr>
<tr>
<td>modern tech stack</td>
<td>that cultivates continuous product</td>
<td></td>
</tr>
<tr>
<td>The orchestration engine in a</td>
<td>development</td>
<td></td>
</tr>
<tr>
<td>modular stack can be integrated with</td>
<td>Microservice architecture that allows</td>
<td></td>
</tr>
<tr>
<td>a data environment to extract and use</td>
<td>product features to be built or modified</td>
<td></td>
</tr>
<tr>
<td>data in real time</td>
<td>in their own containers, minimizing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>disruption to the system</td>
<td></td>
</tr>
</tbody>
</table>
Example: Tyme has built a modern tech stack that supports its customer proposition and business model

Modern and agile stack  
Supporting daily releases

- Cloud-Based
- Microservices Architecture
- Containerization

Robust data analytics practice  
Data is processed in real time

- Usable, reliable, and manageable data warehouse
- Process engine (e.g., Kafka) events readily digestible into a data environment (Spark)
- Inline analytics

Conducive corporate culture  
Customer-focused product development

- Over 100 tech and data experts:
  - Developers
  - Coders
  - BI experts
  - Python/SQL experts
  - Data engineers
  - Machine learning specialists
Regulation: Globally, regulators are adopting different approaches to welcome new digital players and encourage innovation.

- **Bespoke digital banking license**: Taiwan, Hong Kong, Korea
- **Phased approach**: Singapore, Malaysia, United Kingdom, Australia
- **No separate digital banking license**: Brazil, South Africa, Germany
To lure new entrants some regulators have adopted a bespoke digital banking license

Common characteristics of bespoke digital banking licenses

- **Restrictions on banks’ physical presence**
  - Regulators encourage innovative ideas on digital distribution by limiting physical touchpoints

- **Unaltered fundamental requirements for banking**
  - New digital banks still must comply with basic regulatory requirements such as AML/CFT, consumer protection rules, risk management

- **Focus on financial inclusion**
  - Regulators expect new entrants to assist the unserved and underserved customer segments, including micro, small and medium enterprises
Regulation: Early insights

A bespoke regime less important than a risk-based, outcome-oriented approach

Activity as a unit of risk assessment

Key regulatory enablers include onboarding (AML/CFT), outsourcing (cloud computing), distribution (different types of agents)

Catalyzing initiatives: innovation facilitators & phased approach

Should ensure a level playing field and not disadvantage digital players by e.g. forbidding them from physical touch points or specific customer segments.
**Infrastructure:** Markets that are ripe for disruption by digital banks share common characteristics

- High Internet Penetration
- National ID Coverage
- Growing Smartphone Adoption
- Robust Payments Systems
Thank you

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