Financial Inclusion through FinTech: One Click at a Time

Presentation at FinTech2020 Dubai

Dr. Nasser Saidi
11 May 2016
Agenda

- Globalisation & Digital Economy are Disruptive
- Rapidly Changing FinTech Digiscape
- Crowdfunding, Payments & Blockchain
- Challenges to FinTech Innovation
- FinTech for MENA financial inclusion
# Digitisation Transformed Globalisation

<table>
<thead>
<tr>
<th>20th Century</th>
<th>21st Century</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tangible flows of physical goods</td>
<td>Intangible flows of data and information</td>
</tr>
<tr>
<td>Flows mainly between advanced economies</td>
<td>Greater participation by emerging economies</td>
</tr>
<tr>
<td>Capital- and labor-intensive flows</td>
<td>More knowledge-intensive flows</td>
</tr>
<tr>
<td>Transportation infrastructure is critical for flows</td>
<td>Digital infrastructure becomes equally important</td>
</tr>
<tr>
<td>Multinational companies drive flows</td>
<td>Growing role of small enterprises and individuals</td>
</tr>
<tr>
<td>Flows mainly of monetized transactions</td>
<td>More exchanges of free content and services</td>
</tr>
<tr>
<td>Ideas diffuse slowly across borders</td>
<td>Instant global access to information</td>
</tr>
<tr>
<td>Innovation flows from advanced to emerging economies</td>
<td>Innovation flows in both directions</td>
</tr>
</tbody>
</table>

Digital Economy characteristics

- Digitized, Monitored & Tracked
- Connected, Networked
- Personalised
- Direct: by-pass intermediation
- Shared

Digital Disruption
Sharing Economy

Sharing economy principle: more efficient use of physical and human assets. Activating ‘dead & idle’ capital/assets

- **Financial services**: Bitcoin, Blockchain, Alipay,
- **Hospitality and Dining**: CouchSurfing, Airbnb, Feastly, LeftoverSwap
- **Automotive & Transportation**: RelayRides, Hitch, Uber, Lyft, Getaround, Sidecar, Careem
- **Retail & Consumer Goods**: Neighborgoods, SnapGoods, Poshmark, Tradesy
- **Media & Entertainment**: Netflix, Amazon Family Library, Wix, Spotify, SoundCloud, Earbit
Digital Disruption could result in 30% decline in core revenues

Disruption forces have already begun to impact financial services industry...

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What is FinTech?

Technologies for banking & corporate finance, capital markets, financial data analytics, payments, insurance, and personal financial management
### THE FINTECH ECOSYSTEM

#### Payments & Transfers
- Dwolla
- Stripe
- PayPal
- Square
- Klarna
- Venmo
- Braintree
- iZettle
- ShopKeep
- Adyen
- Paydiant
- Visa Checkout
- Adyen
- Express Checkout
- Samsung Pay
- Apple Pay
- Android Pay
- Currenccy
- TransferWise
- BitPesa
- Flywire
- Currency Cloud

#### Lending & Financing
- LendingClub
- Prosper
- OnDeck
- Funding Circle
- Prêt d'union
- Zoopla
- Avant
- Bond Street
- SoFi
- Orchard
- RateSetter
- Rate
- Asset Avenue
- Lufax
- Asset
- Can Capital
- Credibly
- Lendio
- Fundrise
- Capgemini
- Simple
- GoBank
- Webank
- Tandem
- CapitalOne
- Atom
- Earnest
- Upstart
- Even
- Biz2Credit

#### Retail Banking
- Moven
- Ally
- Affirm
- Even
- ZestFinance
- Bondora
- Obine
- CommonBond

#### Financial Management
- LendingRobot
- Betterment
- Motif
- Wealthfront
- Nutmeg
- Robinhood
- BillGuard
- Mint

#### Insurance
- Metromile
- Oscar
- Friendsurance
- MyDrive
- BizInsure

#### Markets & Exchanges
- WeSwap
- Ripple
- Coinbase
- Bitstamp
- Kraken
- LendingRobot
- BTC
- Coinsetter
Why is FinTech rising?

- FinTech is not new but is rapidly evolving
- GFC & growing regulatory burden on traditional finance leading to surge in alternative finance
- GFC & misconduct scandals eroded trust & confidence
- Global spread & falling cost of ICT
- Technological innovation
- Shift of global economic geography to emerging economies
- Demographics: tech-oriented Millennials
- Globalisation: Cross-border services are growing
Mobile Technology: growing, higher penetration, innovating & more reliable

Global Smartphone Subscriptions & Penetration Rate

NAM=North America; WE=Western Europe; LAM=Latin America; CEMA=Central Europe, Middle East, and Africa; APAC=Asia Pacific. Source: United Nations, Ericsson, GSMA Intelligence, IIF.
Mobile Connectivity: Lower cost & increasingly global

Cost of data per mb, $
- Developing
- Developed

Mobile-broadband connections, bn

Mobile data transmitted
Exabytes* per month
- N America
- W Europe
- Asia Pacific
- Rest of world

Mobile penetration, %
Actual and line fitted
- N America & W Europe
- Asia Pacific
- Africa & Middle East

Source: Economist
Cross-border digital flows are surging

Used cross-border bandwidth

<table>
<thead>
<tr>
<th>Regions</th>
<th>NA United States and Canada</th>
<th>EU Europe</th>
<th>AS Asia</th>
<th>LA Latin America</th>
<th>ME Middle East</th>
<th>AF Africa</th>
<th>OC Oceania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bandwidth</td>
<td></td>
<td>&lt;50</td>
<td>50–100</td>
<td>100–500</td>
<td>500–1,000</td>
<td>1,000–5,000</td>
<td>5,000–20,000</td>
</tr>
</tbody>
</table>

2005
100% = 4.7 Terabits per second (Tbps)

2014
100% = 211.3 Tbps

45x larger

NOTE: Lines represent interregional bandwidth (e.g., between Europe and North America) but exclude intraregional cross-border bandwidth (e.g., connecting European nations with one another).

SOURCE: TeleGeography, Global Internet Geography; McKinsey Global Institute analysis
FinTech Adoption Rates Growing: Easy to setup, Lower Cost, Diversity, Higher Quality Online Service
FinTech Competitive Edge: Low margin, Asset light, Scalable, Innovative, Compliance easy

FinTechTers: Millennials, Young & Affluent

Source: EY FinTech Adoption Index
The Disruption Opportunity in Banking: Conversation with 16-21 Year Old Millennials

“MY BANK KNOWS MORE ABOUT MY LIFE THAN I DO: ALL ABOUT MY SPENDING, HOW MUCH MONEY I SHOULD STOP SPENDING… MY BANK HAS 21 YEARS OF INFORMATION ABOUT ME AND I GET NOTHING FROM IT EXCEPT GBP1.40 A YEAR IN INTEREST.”

“Banks are invisible – there’s a brand on my card but it’s not like my Nikes, I just use my card, I don’t think about the brand.”

“PayPal is so easy, it’s great. I figured out how it worked using tutorials in the app.”

“We are disillusioned with banking. If a brand came to me and said they wanted to be a bank, I would be suspicious…”

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Surge in Private Investment in Global FinTech

Where are FinTech $, €, ¥, kr. investments deployed?

Capital Deployed in Private FinTech Companies By Segment (left) & Business (Right)

- Personal & SME: 73%
- Asset Management & Wealth: 10%
- Insurance: 10%
- Investment Banking: 4%
- Large Corporate: 3%
- Payment: 23%
- Money Transfer: 3%
- Savings & Wealth: 10%
- Digital Currency: 3%
- Insurance: 10%
- Equity Crowdfunding: 2%
- Institutional Tools: 3%
- Lending: 46%

FinTech innovation will rapidly disrupt bank consumer revenue in US & Europe

THE US AND EUROPE ARE AT THE TIPPING POINT IN TERMS OF FINANCIAL INNOVATION
Impact of digital disruption on US Consumer Banking Revenue

Total banking consumer revenue
Revenue impact from digital disruption
Source: Citi Digital Strategy

2015: $850 billion (1.1%)
2017: $870 billion (5%)
2020: $1,050 billion (10%)
2023: $1,200 billion (17%)
China is already a FinTech economy.

China is currently the biggest Peer-to-Peer (P2P) lender in the world.

Source: Citi Research

China also has the largest e-commerce system in the world (gross merchandise volume).

Source: eMarketer, Citi Research
China’s FinTech Dominance

During CNY 2016, over 8bn red envelopes were sent over WeChat (8x yoy), Baidu over 4.6mn; in 2015, Alipay sent out 240mn red envelopes vs. WeChat’s 1bn.

Global e-commerce dominated by China & US

Alipay, launched in 2014, leader in e-commerce online payments; ~80%+ market share within China in online payments

Alipay Total Payment Volume Bigger than PayPal, 2015 ($bn)

Source: eMarketer, Citi Research; Based on Gross Merchandise Value (GMV)
FinTech in India: banking the unbanked

- Characteristics:
  - Pro-investment regulatory framework,
  - Unique IDs (biometrics + Aadhar card), National Mission for Financial Inclusion (Jan Dhan Yojna),
  - Unified Payments interface, Mobile & Internet penetration
- Allows peer-to-peer payments
- RBI granted in-principle licenses to payment banks (11) + small finance banks (10) (Aug ’15)
- Mobile-only Digibank (DBS) launched in Apr 2016 - paperless, signature-less and branchless bank; coming soon: Paytm bank

Lesson: RegTech needs to be developed & regulators need to facilitate establishment of payment banks
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FinTech Industry Trends
The Digital Payments Revolution

Payments revenue 2009-2019

<table>
<thead>
<tr>
<th>Region</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2019F</th>
</tr>
</thead>
<tbody>
<tr>
<td>APAC</td>
<td>1.4</td>
<td>1.5</td>
<td>1.5</td>
<td>1.7</td>
<td>2.3</td>
</tr>
<tr>
<td>EMEA</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>LatAm</td>
<td>0.1</td>
<td>0.2</td>
<td>0.2</td>
<td>0.2</td>
<td>0.3</td>
</tr>
<tr>
<td>North America</td>
<td>0.3</td>
<td>0.3</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Share of total banking

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>37</td>
</tr>
<tr>
<td>2012</td>
<td>38</td>
</tr>
<tr>
<td>2013</td>
<td>38</td>
</tr>
<tr>
<td>2014</td>
<td>40</td>
</tr>
<tr>
<td>2019F</td>
<td>40</td>
</tr>
</tbody>
</table>

CAGR, (2013-2014) Percent

<table>
<thead>
<tr>
<th>Region</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>APAC</td>
<td>+4</td>
</tr>
<tr>
<td>EMEA</td>
<td>+22</td>
</tr>
<tr>
<td>LatAm</td>
<td>+3</td>
</tr>
<tr>
<td>North America</td>
<td>+5</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Region</th>
<th>CAGR</th>
</tr>
</thead>
<tbody>
<tr>
<td>APAC</td>
<td>+11</td>
</tr>
<tr>
<td>EMEA</td>
<td>+7</td>
</tr>
<tr>
<td>LatAm</td>
<td>+9</td>
</tr>
<tr>
<td>North America</td>
<td>+5</td>
</tr>
</tbody>
</table>

Source: “Global Payments 2015”, McKinsey
Global Crowdfunding platforms raised $34.4bn in 2015
Crowdfunding dominated by US but Europe, Asia rapidly catching-up

Growth by crowdfunding region prediction for 2015 in millions of USD (research based estimate)
Crowdfunding platforms in MENA: can help to bridge $260bn SME funding gap

- **Equity**: Eureeca, Venturefin
- **Lending**: Beehive (marketplace lending) and Liwwa (p2p)
- **Rewards/donations**: Zoomaal, Aflamnah, AfkarMENA
- **Real estate**: Durise
- **On Eureeca**:
  - Demand for bigger deal sizes
  - Increased interest from institutions
  - Internationalisation of the space (biz & investors)
How a blockchain works

1. A wants to send money to B

2. The transaction is represented online as a 'block'

3. The block is broadcast to every party in the network

4. Those in the network approve the transaction is valid

5. The block then can be added to the chain, which provides an indelible and transparent record of transactions

6. The money moves from A to B
Blockchain tech changes everything: transfer of unique digital property is guaranteed to be safe & secure, verifiable by all, transparent and registered.

The three models:

- **Current system**: All banks check with central electronic ledger.
- **Public blockchain (permissionless)**: An open network that anybody can access, like the bitcoin model. The digital ledger of transactions is shared, transparent and run by all participants.
- **Private blockchain (permissioned)**: The preferred option of most banks. It is a closed system checking all details and controlling access via invitation.
Transformational Power of Blockchain

- **Validating**: identifying the existence of something to be traded & membership of the trading community.
- **Transacting**: preventing duplicate transactions
- **Recording**: holding the record of transactions in the event of dispute.
- Lower costs through shared infrastructure
- Faster settlement leads to lower capital and liquidity needs
- Increased transparency, especially with cross border payments
- Integrity of record-keeping
- Greater security through cryptography

Citi Research, Jan 2016
Blockchain can be transformational for financial services

Sharing ledgers for sharing economies: an exploration of mutual distributed ledgers, Michael Mainelli & Mike Smith (2015)

<table>
<thead>
<tr>
<th>Area</th>
<th>Possible applications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial instruments, records, models</strong></td>
<td>Currency, private and public equities, certificates of deposit, bonds, derivatives, insurance policies, voting rights associated with financial instruments, commodities, derivatives, trading records, credit data, collateral management, client money segregation, mortgage or loan records, crowdfunding, P2P lending, microfinance, (micro)charity donations, account portability, airmiles and corporate tokens, etc.</td>
</tr>
<tr>
<td><strong>Public records</strong></td>
<td>Land and property titles, vehicle registries, shipping registries, satellite registries, business license, business ownership/incorporation/ dissolution records, regulatory records, criminal records, passport, birth/death certificates, voting ID, health and safety inspections, tax returns, building and other types of permits, court records, government/listed companies/ civil society, accounts and annual reports, etc.</td>
</tr>
<tr>
<td><strong>Private records</strong></td>
<td>Contracts, ID, signature, will, trust, escrow, any other type of classifiable personal data (e.g., physical details, date of birth, taste) etc.</td>
</tr>
<tr>
<td><strong>Semiprivate/ semipublic records</strong></td>
<td>High school/university degrees and professional qualifications, grades, certifications, human resources records, medical records, accounting records, business transaction records, locational data, delivery records, genome and DNA, arbitration, genealogy trees, etc.</td>
</tr>
<tr>
<td><strong>Physical access</strong></td>
<td>Digital keys to home, hotel, office, car, locker, deposit box, mail box, Internet of Things, etc.</td>
</tr>
<tr>
<td><strong>Intellectual property</strong></td>
<td>Copyrights, licenses, patents, digital rights management of music, rights management of intellectual property such as patents or trademarks, proof of authenticity or authorship, etc.</td>
</tr>
<tr>
<td><strong>Other records</strong></td>
<td>Cultural and historical events, documentaries (e.g., video, photos, audio), (big) data (weather, temperatures, traffic), SIM cards, archives, etc.</td>
</tr>
</tbody>
</table>
Banks are catching up by investing in FinTech startups

- **20%**: HSBC
- **20%**: BBVA, Santander
- **10%**: ABN·AMRO
- **7%**: Barclays
- **43%**: Citibank, Sberbank

Legend:
- Acquired FinTech companies
- Set up venture funds to fund FinTech companies
- Startup programs to incubate FinTech companies
- Partnering with FinTech companies
- Launched own FinTech subsidiaries
Agenda

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✓ Crowdfunding, Payments & Blockchain
✓ Challenges to FinTech Innovation
✓ FinTech for MENA financial inclusion
Challenges to FinTech innovation

• Regulation
  – Is regulation necessary? Not necessarily creating systemic risk
  – How to avoid stifling innovation?
  – Too many players: who would be the regulator?
  – Cross-border issues

• Privacy
  – Ensuring integrity of data?

• Security
  – Preventing security breaches/hacking

• Untested across business cycles and crises

Need Sandbox Systems where regulators & innovators get together
RegTech: Support for FinTech

- US, UK, Singapore, Australia regulators taking supportive, proactive stance to FinTech
- US OCC’s Approach to Responsible Innovation
  1. Support responsible innovation.
  2. Foster an internal culture receptive to responsible innovation.
  3. Leverage agency experience and expertise.
  4. Encourage responsible innovation that provides fair access to financial services and fair treatment of consumers.
  5. Further safe and sound operations through effective risk management.
  6. Encourage banks of all sizes to integrate responsible innovation into their strategic planning.
  7. Promote ongoing dialogue through formal outreach.
  8. Collaborate with other regulators
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Harnessing FinTech for MENA financial access and inclusion

Merely setting up online & mobile banking services is not enough: banks need to leverage FinTech to raise efficiency

- Geographic Fragmentation: many countries, with different currencies, regulatory bodies
- Young, Unbanked populations: FinTech = financial access & inclusion
- High mobile penetration rates (110 phones per 100 persons): but, so far, cash is king
- Social media presence: almost half the population uses the Internet & 88% of that group uses social media daily
FinTech can/should be the answer to Financial Access & Inclusion in MENA

More than 85 million adults are unbanked in MENA
FinTech can enable Women’s economic empowerment by facilitating greater account ownership, asset accumulation & increasing economic participation.
FinTech is answer to economic & financial exclusion of MENA young
FinTech & crowdfunding should replace Family or Friends as preferred “lenders” in MENA
FinTech should aim to disrupt ME payments!

Use of different mechanisms for making direct electronic payments
Adults using type of payment mechanism in the past year (%), 2014

- East Asia & Pacific
- Europe & Central Asia
- High-income OECD economies
- Latin America & Caribbean
- Middle East
- South Asia
- Sub-Saharan Africa

- Used debit card
- Used credit card
- Used mobile phone
- To access account
- Has account at a financial institution
FinTech should displace cash in MENA

Utility payers and how they make payments
Adults paying utility bills in the past year, by method (as % of all adults), 2014

School fee payers and how they make payments
Adults paying school fees in the past year, by method (as % of all adults), 2014
FinTech can disintermediate & lower cost of sending remittances; offer digital entry point to formal financial services

Top Remittance sending countries, 2014

<table>
<thead>
<tr>
<th>Country</th>
<th>Remittances (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>USD 36.9bn</td>
</tr>
<tr>
<td>UAE</td>
<td>USD 19.3bn</td>
</tr>
<tr>
<td>Kuwait</td>
<td>USD 18.1bn</td>
</tr>
<tr>
<td>Qatar</td>
<td>USD 11.2bn</td>
</tr>
<tr>
<td>Oman</td>
<td>USD 10.3bn</td>
</tr>
</tbody>
</table>

Source: “Migration & Remittances Factbook 2016”, World Bank, Booz Allen

1 Registered hawala only
Islamic FinTech: Unexplored territory!

- Only 24% of Muslim adults have an account at a bank or formal financial institution, vs. 44% non-Muslims
- Beehive (P2P lending), UAE: independent Sharia certification
- Blossom Finance, Indonesia: Sharia-compliant Bitcoin-based venture
- Kapital Boost, Singapore: Islamic-focused P2P crowdfunding platform
- Club Ethics, Singapore: finance-based realty crowdfunding venture
The FinTech Ecosystem

Source: EY
What should MENA/GCC countries do to prevent a FinTech gap?

1. Integrate FinTech into digital development strategy, including digital education
2. Setup Task Forces to drive high impact policy initiatives
3. Support FinTech investments through PPP funding
4. Develop enabling/supportive RegTech, including ‘regulatory sandboxes’
5. Cooperate with advanced FinTech hubs by building FinTech bridges
Key Takeaways I

- FinTech integral part of Digital/Sharing Economy
- Investment in FinTech is directed at Payments, Lending & driven by tech-oriented, affluent Millennials
- Blockchain is disruptive to established financial services
- FinTech will be empowered/disrupted by AI
- FinTech has power to be transformational & key to economic development & diversification
Key Takeaways II

- Future of FinTech will be in EMEs, China, India
- FinTech is key to Financial Inclusion in MENA
- FinTech will enable the Human Capital Cloud & raise female labour force participation
- MENA countries need to bridge their FinTech gap through PPP, massive investments & RegTech support & enabling environments
Selected Bibliography

- Citi Research (2016): Digital Disruption
- EY (2015): FinTech Adoption Index
- PwC (2016): Blurred lines: How FinTech is shaping Financial Services
Thank you

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