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# Market Guide: Fintech

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Rapid advances in digital technology are transforming the economic and financial landscapes. Financial technology – fintech – is creating new opportunities and challenges for the financial sector – from consumers, to financial institutions, to regulators. Fintech offers many opportunities for governments and companies, from making their financial systems more efficient and competitive to broadening access to financial services for under-served populations. However, it can also pose potential risks to consumers and investors and, more broadly, to financial stability and integrity.

This market guide has been developed for new and existing renewable energy companies looking to operate in Africa and Southern Asia. It aims to provide a broad overview of basic concepts, challenges and opportunities in fintech.



Figure 1 Photo by Benjamin Dada on Unsplash

### Sector background

‘Financial technology’, or ‘fintech’, refers to the use of technology to deliver financial solutions. The term can be traced to the early 1990s, and now refers to a very rapidly growing industry. However, it is only since 2014 that the sector has attracted the focused attention of regulators, industry participants, consumers and academics.

#### Fintech 1.0 (1866–1967): New term for an old relationship

Fintech is not novel. The laying of the transatlantic telegraph cable in 1866 provided the fundamental infrastructure for the period of strong financial globalisation from 1866 to 1913. It is important to distinguish three main eras of fintech evolution. From around 1866 to 1967, the financial services industry remained largely analogue, despite being heavily interlinked with technology - characterised as Fintech 1.0. From 1967 to 2008, finance was increasingly digitalised due to the development of digital technology for communications and transactions - characterised as Fintech 2.0. Since 2008, characterised as Fintech 3.0, new start-ups and established technology companies have begun to deliver financial products and services directly to businesses and the public, as well as to banks.

#### Fintech 1.0: From analogue to digital

From their earliest stages, finance and technology have been interlinked and mutually reinforcing. Finance originated in the state administrative systems that were necessary in the transition from hunter-gatherer groups to settled agricultural states. Money is a technology evidencing transferable values, and the emergence of early calculation technologies like the abacus greatly facilitated financial transactions. Finance evolved alongside trade, and double entry accounting emerged from this in the late Middle Ages and Renaissance. Many historians share the view that the European financial revolution in the late 1600s

involving joint stock companies, insurance, and banking — all based on double-entry accounting — was essential to the Industrial Revolution. Thus, the relationship between finance and technology laid the foundations for the modern period.

In the late 19th century, technologies such as the telegraph, railroads and steamships underpinned financial interconnections across borders. Then, post-World War I, technological developments proceeded rapidly. By this time, a global telex network was in place, providing the communications foundation on which the next stage of fintech could develop.



Figure 2 Table of eras that identifies the key events of each period, Source: Arneris, Barberis & Ross, 2016.

### Fintech 2.0 (1967–2008): Digitalisation of traditional financial services

#### Insights

- **Fintech 1.0 (1886-1967) is about infrastructure.** This is an era of financial globalization.
- **Fintech 2.0 (1967-2008) is about banks.** This period marks the shift from analogue to digital and is led by traditional financial institutions. It was the launch of the first handheld calculator and the first ATM installed by Barclays bank that marked the beginning of the modern period of fintech in 1967.
- **Fintech 3.0 (2008-Current) is about start-ups.** This era is marked by the emergence of new players alongside the already existing ones (such as banks).

In the late 1960s and 1970s, electronic payment systems advanced rapidly. The Inter-Bank Computer Bureau was established in the UK in 1968, forming the basis of today's Bankers' Automated Clearing Services. The US Clearing House Interbank Payments System was established in 1970, and Fedwire became an electronic system in the early 1970s. Reflecting the need to interconnect domestic payments systems, the Society of Worldwide Interbank Financial Telecommunications was established in 1973, followed soon after by the collapse of Herstatt Bank in 1974, which highlighted the risks of increasing international financial interlinkages. This crisis triggered the first major regulatory focus on fintech, with the establishment of the Basel Committee on Banking Supervision of the Bank for International Settlements in 1975, leading to a series of international soft law agreements.

In 1987, stock markets around the world crashed on 'Black Monday'. The effects of the crash were a clear indicator that global markets were technologically interlinked. The reaction led to the introduction of 'circuit breakers' to control the speed of price changes and led securities regulators worldwide to create mechanisms to support cooperation. In addition, the Single European Act 1986,

the 1986 Big Bang financial liberalisation process in the UK, and the 1992 Maastricht Treaty set the baseline for the full interconnection of EU financial markets by the early 21st century.

The advances through the mid-1990s highlighted the initial risks in complex computerised risk management systems, with the collapse of Long-term Capital Management after the Asian and Russian financial crises of 1997–98. However, the next level of development began in 1995 when Wells Fargo began providing online consumer banking. By 2001, eight US banks had at least one million customers online. In the late 1990s, the internet provided the foundational change that made Fintech 3.0 possible a decade later. E-banking and all the developments of Fintech 3.0 were a product of the new internet era.

The regulatory view during Fintech 2.0 was that while e-banking was a digital version of the traditional model, it created new risks. Technology removed the need for depositors to be physically present at a branch and could thus indirectly facilitate electronic bank runs. In turn, instant withdrawal could increase the stress on a financial institution. Regulators also identified that online banking creates new credit risks. The expectation was also that e-banking providers would be authorised financial institutions, which are usually the only entities allowed to describe themselves as ‘banks’. However, Fintech 3.0 changed this.

## Sector trends

### Fintech 3.0 (2008–present) in developed countries

Several factors came together around 2007 and 2008 to provide the impetus for Fintech 3.0 in developed countries.

The brand image of banks, especially in the UK and US, was severely shaken. A 2015 survey reported that Americans trust technology firms more than banks to handle their finances. The same phenomena appears to exist in China where over 2,000 P2P (peer-to-peer) lending platforms operate outside a clear regulatory framework, yet this does not deter millions of lenders and borrowers, due to the cheaper cost, apparently better potential return and increased convenience. Post-crisis regulation increased banks’ compliance obligations and costs, and restricted credit. Ring-fencing obligations and increased regulatory capital for banks changed their incentive or capacity to originate low-value loans. The new requirements to prepare recovery and resolution plans and conduct stress tests further added to bank costs. The 2008 global financial crisis also saw many finance professionals made redundant, and subsequently seeking new outlets for their skills.

Furthermore, Fintech 3.0 would almost certainly not have flowed from the global financial crisis had the crisis occurred five years earlier. Two technological developments occurred to deliver the consumer interface and the interoperability among applications and services: the advent of the smartphone and the growth in sophistication of application programming interfaces (APIs).

The critical difference in Fintech 3.0 lies in two areas. First, who is providing financial services, with start-ups and technology firms supplanting banks in providing niche services to the public, businesses and the banks themselves; and second, the speed of development. In many markets, there has been a shift in customer mindset

### Insights

The countries with the highest Fintech usage are China (69%) and India (52%). China, India and other emerging markets never had time to develop Western levels of physical banking infrastructure, which has left them more open to new solutions.

As technology is becoming ever more central in the finance industry, we tend to consider banks and fintech start-ups as opposing forces fighting for their share of the market. The reality is that both sides need each other just as much as they need to compete.

On the one hand, fintech start-ups have taken funding from banks and often rely on banking, insurance, and back office partners to deliver their core products. Banks, on the other hand, have acquired fintech start-ups or invested in them to leverage new technology and ways of thinking to upgrade their existing operations and offerings.

as to who has the resources and legitimacy to provide financial services, combined with an entirely new speed of evolution, particularly in emerging markets.

### **Fintech 3.5 in emerging markets: the examples of Asia and Africa**

In Asia and Africa, recent fintech developments have been primarily prompted by deliberate government policy choices in the pursuit of economic development.

The 'reputational' factors that encourage the perception that only banks can offer banking services are irrelevant in these regions for over 1.2 billion unbanked individuals, because to them, banking can be provided by any institution, whether regulated or not: 'banking is necessary, banks are not'.

#### **Africa: Greenfield opportunities for fintech**

Fintech in Africa emerged at the beginning of the 21st century largely on the back of two factors: the underdeveloped level of banking and financial services; and the rapid spread of mobile phones.

At most, 20% of African households have access to formal or semi-formal financial services compared to 60% of Asian households. As a result, telecommunications companies have taken the lead in fintech developments. Mobile money — the provision of basic payment and savings services through e-money recorded on a mobile phone — has achieved its greatest success in Kenya and, more recently, Tanzania. Mobile money has significantly spurred economic development by providing customers with a means to save funds, remit money safely to their families, pay bills, and receive government payments securely. The most well-known success story in Africa is that of M-Pesa, launched in 2007. In under five years, payments made through M-Pesa surpassed 43% of Kenya's GDP.

Africa's fintech revolution owes its success to the industry's deep understanding of customers at grass-root levels and adequately meeting their needs. The industry is attracting ample attention from venture capitalists: the funding of the tech sector rose from \$414 million in 2014 to \$608 million in 2018, according to the *Financial Times*. It has given rise to small business solutions like RainFin backed by Barclays bank, which is currently the largest peer-to-peer (P2P) lending business in South Africa with transactions of more than one million rand per day.

#### **Fintech opportunities and limitations in emerging markets**

The growth of the fintech market is attributable to various factors: slower IT spending by traditional banks; public distrust of the state-owned banking system (due to corruption and inefficiency); limited branch network distribution; and very high mobile telephone penetration rates, particularly smartphones.

Numerous fintech accelerators for start-ups have been established in Hong Kong and Singapore, as well as Brisbane, Sydney and Melbourne, and are set to open in Korea. Most Asian regulators have also initiated a fintech strategy. For China, this trend is supported by its market reforms moving from a mono-banking model to a largely commercialised financial system. Since 2009, over 2,000 P2P lending platforms have emerged in China, and we should not expect this growth to slow, especially with the government's Internet Finance Guidelines issued in July 2015.

Fintech 3.5 is supported by a strong underlying rationale, including the following characteristics: (1) young digitally savvy populations equipped with mobile devices; (2) a fast-growing middle class; (3) inefficient financial and capital markets creating opportunities for informal alternatives; (4) a shortage of physical banking infrastructure; (5) a behavioural predisposition in favour of convenience over trust; (6) untapped market

opportunities; and (7) less stringent data protection and competition. In addition, particularly in India and China, there are very large numbers of engineering and technology graduates.

While significant opportunities exist in the emerging economies of African and Asia, these are tempered by specific challenges. Investors, networks and financial engineering in these regions are less sophisticated than in the EU and US, leading to information asymmetries and constraints for fintech companies. Financing is also not readily attainable, with high barriers to entry in retail banking. Furthermore, as companies increase scale, the fragmented regulatory regime puts business-to-consumer fintech companies at a disadvantage relative to business-to-business (B2B) companies, as B2B companies partially shift the compliance burden to their client. The fragmentation in the emerging markets of Africa and Asia, consisting of as many countries, is also apparent when compared to the harmonised European market.

## Sector Challenges and Opportunities

**Table 1 Challenges in the fintech sector**

Challenge	Mitigation
Low levels of formal financial services (cash dominance in transactions, informal credit and savings).	Innovations such as mobile money can take hold more completely in emerging markets where there is a strong need and no incumbent service to displace. Building on the mobile money ecosystem, innovators in emerging markets have leapfrogged conventional financial infrastructures to offer a range of financial services engineered to sustainably service dispersed or low-income populations.
Lower income (low value transactions, smaller fees).	Operating bank branches is expensive in emerging and developed markets alike, and the shift to digital channels helps reach more customers at lower cost across markets. The imperative is greater for complete digital transformation from front-end customer channels, through the credit and payments engines to servicing and processing, though, in emerging markets where financial access is a goal.
Low financial literacy levels.	Need for user education.
Underdeveloped technology and venture capital ecosystems (shortage of skilled tech/finance entrepreneurs, small markets, limited revenue potential).	Flying under the radar of the global tech/venture capital community can create space for local innovators to serve their markets while the giants are looking elsewhere. For banks, this can also create opportunities if they can lead in introducing unique local value propositions, as CBA did with m-Shwari in Kenya.
Relatively weak infrastructure (underdeveloped payment systems, customer credit data, legal enforcement mechanisms for payment obligations, power, telco/Internet coverage).	While forward-thinking regulators in some countries have created an environment favourable to digital financial services, whether by offering a flexible regulatory environment (Kenya) that allowed non-bank infrastructure to develop, or investing in critical identity and payments infrastructure and a tiered licensing system (India), in many countries much work still needs to be done.

**Table 2 Opportunities in the fintech sector in Africa and East Asia Pacific****Opportunity**

Strongly backed by venture capitalists, fintech companies are set to influence the financial industry in three significant ways:

- First, drive efficient financial services, as more banks in emerging markets turn to fintech innovations to improve their digital service delivery.
- Second, redefine the industry's perception of what it takes to be called a bank. Fintechs not only offers bank-like services, including receiving financial transactions and making loans, they also innovate faster and are able to rapidly grow their customer base. Unlike traditional banks, they have the flexibility to provide cheap and accessible products and services and are quicker to tailor their service offering based on changes to behavioural consumer data.
- Third, become an intricate part of the banking sector, while remaining distinguished from traditional banks under international regulatory guidelines.

**Table 3 Overview of the key players in the fintech sector in Africa and East Asia Pacific**

Fintech companies		Global agencies
Navi Technologies Paidy Karri Finhay Paga Wizzit	Mamo Pay PesaChoice PiggyBank NG 22seven SimbaPay Zoono	World Bank International Monetary Fund (IMF) International Finance Corporation (IFC)

## Case studies

### Case Study 1: From payments to credit and saving products in Sub-Saharan Africa

Financial technology providers often start with simple high-demand services and then leverage economies of density and a strong reputation in the country to expand their portfolio of products by providing related banking services, such as credit or saving products. The industry is growing rapidly and the examples that follow – although not exhaustive – illustrate the fast pace of innovation in the region.

Founded in 2009, Paga offers digital bank services (peer-to-peer money transfers, bill payments, online payments, and payroll), achieving a wide reach in Nigeria.

SimbaPay is a UK-based digital money transfer service serving Kenya, Uganda, Nigeria, and Ghana that delivers money via existing mobile money wallet services and using its SimbaPay app. Simbapay and Kenya's Family Bank recently launched an instant payment service from East Africa to China. Users can send funds to China through Family Bank's PesaPap app or Safaricom's M-Pesa.

Orange Money offers a payment and withdrawal card (Visa card) in Botswana, Cameroon, and Côte d'Ivoire, and Orange Bank Africa has been created in partnership with bancassurance group NSIA. Orange Group and MTN Group, two of Africa's largest mobile operators and mobile money providers, set up a joint venture, Mowali (mobile wallet interoperability), that enables interoperable payments across Africa.

Zoono is a mobile payments company that has expanded its portfolio of banking products beyond payments. Zoono offers the service Sunga Pockets, which helps customers store money in an affordable and accessible electronic account.

Zoono has also partnered with Kiva, a crowdlending platform, to offer entrepreneurs financial support. The Kiva platform gives individuals from around the world the opportunity to offer small loans to

entrepreneurs. The entrepreneurs are vetted by Kiva and over time the loans are repaid. Lenders are given the choice to keep their loan within the system to support more entrepreneurs or withdraw it once they are satisfied with the entrepreneur's progress.

Wizzit is a payments company that has started providing microfinance products. Building on its payment services (mobile payments to more than seven million people in 13 countries for more than 15 years), Wizzit partnered with the World Bank Group to create a microfinance pilot to allow users to access microloans through their phones for personal use or to grow their small businesses.

Since 2015, Wizall, a Senegalese start-up, provides electronic payments and money transfer services in West Africa.

GetBucks provides microfinance products such as personal loans for terms of up to six months. It uses a platform called FinCloud to provide financial services through the internet, mobile phones and other channels.

### **Case Study 2: bKash, Bangladesh – Promoting financial inclusion through mobile payments**

Home to 160 million people, Bangladesh has an extremely low banking penetration rate, with over 70% of its population having no access to a bank account. Its banking sector lacks adequate technology to reach the poor, which translates into a unique opportunity for bKash, a mobile money platform.

bKash Limited, a subsidiary of BRAC Bank Limited (Bangladesh) was launched in 2011 to provide mobile financial services, including payments and money transfers, to both the unbanked and banked populations of Bangladesh. Upon registration, each bKash user receives a mobile wallet that serves as a bank account.

Through bKash's vast agent network of over 90,000 retail points, users are able to deposit electronic money into their bKash accounts, receive disbursements, including salaries, loans, and domestic remittances, cash-out the electronic money, and perform peer-to-peer transactions.

bKash's main goal is to serve lower income households by offering free registration and cashing-in services. It also provides users with the cheapest handset in the world (approximately \$15) for accessing bKash's simple user interface.

Currently, despite more than 20 mobile financial service licenses approved by the central bank of Bangladesh, bKash has a clear monopoly, commanding over 80% of mobile banking transactions made in Bangladesh. bKash is now used by over 17 million Bangladeshis and handles more than 70 million transactions a day, according to the company. bKash CEO Kamal Quadir attributes the company's fast growth to its focus on providing mobile financial services through mobile platforms.

In 2013, the IFC made a \$10 million equity investment in bKash to help the company expand its distribution network. According to the Consultative Group to Assist the Poor, a global partnership of 34 leading organisations, 22% of Bangladesh's adults use mobile money and over 80% of transactions are made through bKash, partnering with MasterCard and Western Union. bKash announced in April 2016 that its account holders now have access to international remittances on their mobile phones, a breakthrough that will benefit 22 million people, living in the eighth largest country, for remittances in the world.

## References and further reading

### **Fintech: The experience so far**

<http://documents.worldbank.org/curated/en/130201561082549144/pdf/Fintech-The-Experience-so-Far-Executive-Summary.pdf>

### **How Fintech is Reaching the Poor in Africa and Asia: A Start-Up Perspective**

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### **150 Years of FinTech: An Evolutionary Analysis**

[https://www.researchgate.net/publication/313364787\\_150\\_Years\\_of\\_FinTech\\_An\\_Evolutionary\\_Analysis](https://www.researchgate.net/publication/313364787_150_Years_of_FinTech_An_Evolutionary_Analysis)

### **The Evolution of Fintech: A New Post-Crisis Paradigm?**

[https://www.researchgate.net/publication/313365410\\_The\\_Evolution\\_of\\_Fintech\\_A\\_New\\_Post-Crisis\\_Paradigm](https://www.researchgate.net/publication/313365410_The_Evolution_of_Fintech_A_New_Post-Crisis_Paradigm)

### **FinTech: an explorative study into the characteristics of their business models**

[https://www.researchgate.net/publication/316854641\\_FinTech\\_an\\_explorative\\_study\\_into\\_the\\_characteristics\\_of\\_their\\_business\\_models](https://www.researchgate.net/publication/316854641_FinTech_an_explorative_study_into_the_characteristics_of_their_business_models)

### **Digital Payments: Impact Factors and Mass Adoption in Sub-Saharan Africa**

<https://timreview.ca/article/1254>

### **Fintech Start-ups to Watch in Africa**

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### **FinTech in Sub-Saharan African Countries: A Game Changer?**

<https://www.imf.org/~media/Files/Publications/DP/2019/English/FTSSACEA.ashx>

### **Digital Financial Services: Challenges and Opportunities for Emerging Market Banks**

<https://www.ifc.org/wps/wcm/connect/067d6a0c-f1b5-4457-97aa-2982a7dfda69/EMCompass+Note+42+DFS+Challenges+updated.pdf?MOD=AJPERES&CVID=ITM-26u>

## Useful contacts

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