The Environment for 'FIBR FinTech' in Ghana

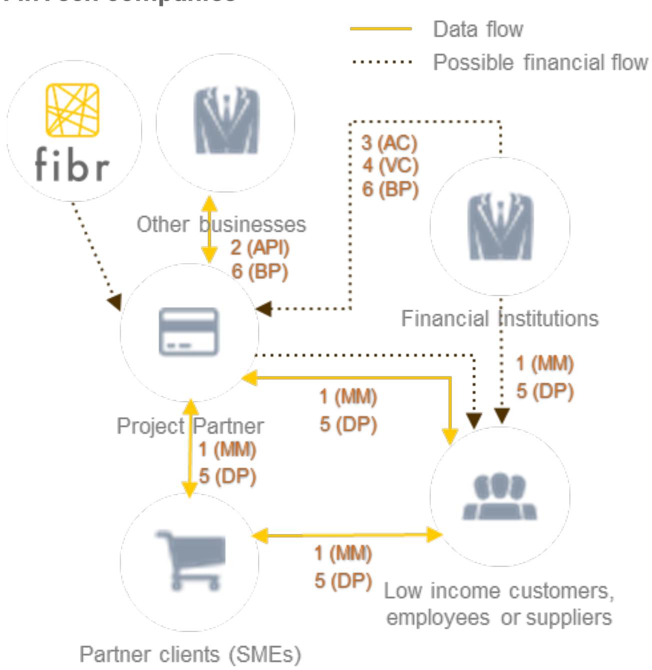
Introducing FIBR FinTech

The FIBR (Financial Inclusion on Business Runways) project is an action research project which seeks to demonstrate how business transaction data from micro, small and medium enterprises (MSMEs), as captured by smartphones, can accelerate and deepen financial inclusion in developing countries[1].

The project identifies small businesses as vital nodes for interacting and transacting with a web of low income employees, suppliers and customers on regular basis. FIBR's learning agenda is focused on these relationships as **indirect channels to financial inclusion**.

At the outset of the project, BFA wants to document the influence of key components of Ghana's **enabling environment** for **FinTech** companies — that is, the factors present in the local market most likely to influence their success. FIBR works with FinTech companies whose reach and business relationships could support indirect approaches to financial models—which BFA dubs 'FIBR FinTech' companies.

Figure 1: Indirect financial inclusion model via FIBR FinTech companies



Source: BFA

Through research and conversations with FinTech companies, bankers, tech hub staff and other stakeholders in FinTech in Ghana, including FIBR's local reference group[2], BFA has identified the following enabling environment features as crucial to the fortunes of FIBR FinTech companies:

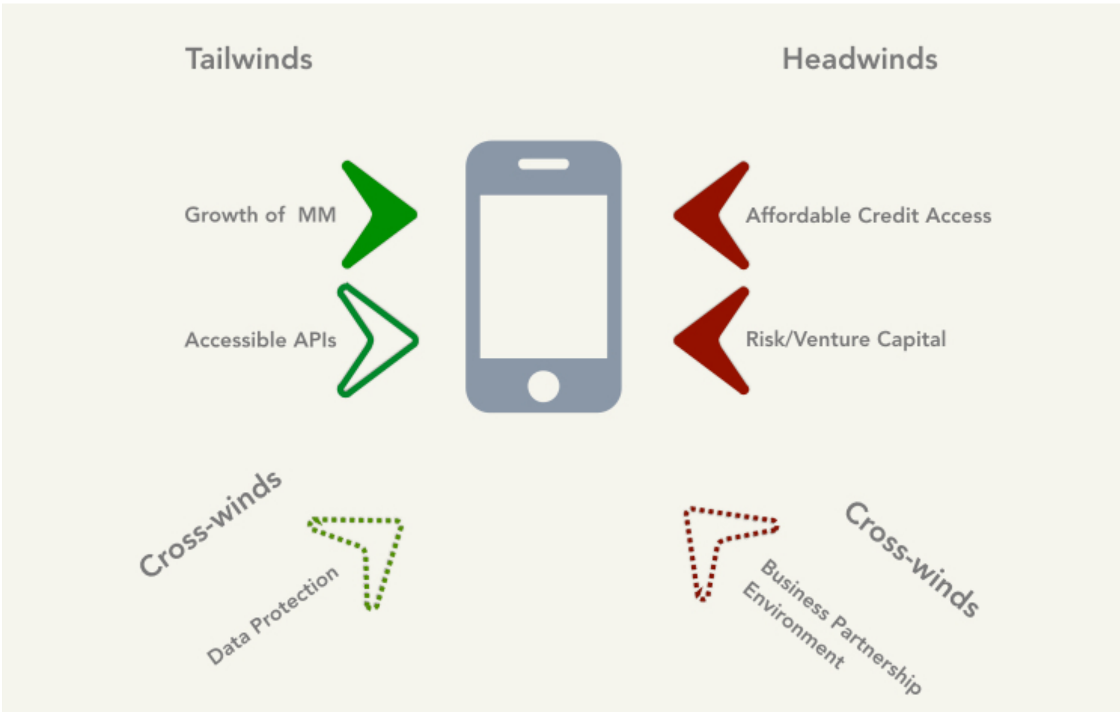
1. Growth of mobile money (MM)
2. Open Application Programming Interfaces (API)
3. Access to affordable credit (AC)
4. Access to risk capital and venture financing (VC)
5. Data protection & sharing environment (DP)
6. Business partnership environment (BP)

[1] The project is managed by BFA under a service contract with The MasterCard Foundation and will run through 2019.

[2] We would like to acknowledge the contributions of FIBR's local reference group, a diverse assemblage of bankers, entrepreneurs, tech hub leaders and other stakeholders in FinTech in Ghana, toward this publication. The group met to discuss these issues in February 2016.

BFA will monitor the impact of these key facets over FIBR's four-year project lifespan. This briefing note groups each facet by its present status as a tailwind (helpful to FIBR FinTechs), headwind (inhibitive) or cross-wind (impact likely to vary by company and sector). If all or most of these features were to emerge as tailwinds over the next four years, we would expect FinTech offerings to proliferate in Ghana.

Figure 2: The enabling environment for FIBR FinTech in Ghana



Source: BFA

Tailwinds in the environment

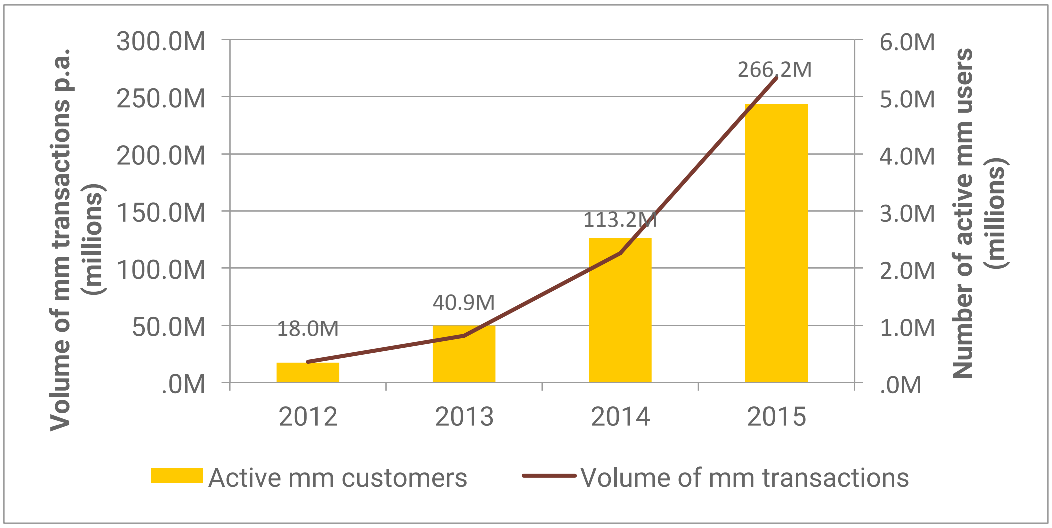
Growth of mobile money (MM) usage

Mobile money, by providing means for storing, removing and transferring value to and from customers' digital accounts, is essential for helping FIBR FinTech companies monetize their business models with affordable micropayments. Moreover, transacting in mobile money (or e-money more broadly) helps capture business information in digital format — a key part of FIBR's learning agenda. For these reasons, Ghana's mobile money ecosystem will play a significant role in scaling solutions developed by FIBR partners.

A key recent development has been the strong growth in mobile money adoption and usage. From a small user base in 2012, greater than one in four adults in Ghana are now considered active customers (as of 2015)[3]:

[3] The data collected by Bank of Ghana (BoG) uses a 90-day window (at least one transaction) for its active user definition.

Figure 3: Growth in mobile money transactions & active users (2012-15)



Source: Bank of Ghana data

The number of mobile money transactions per active user averages 4.5 per month[4][5]. While members of FIBR's local reference group noted that the transaction volume figures may be inflated by the inclusion of government to person (G2P) payments, at the very least it seems that mobile money's 'rails' are in place to support the growth of digital financial services that we expect to create with our FIBR partners.[6]

This growth has been supported by recent regulatory changes. The Bank of Ghana's (BoG's) 2015 Guidelines for E-Money Issuers in Ghana appear to have removed a key obstacle to partnership formation between Mobile Network Operators (MNOs) and banks and other Financial Service providers (FSPs). Whereas FSPs previously were required to partner with more than one MNO for any offering, they are now able to enter into bilateral agreements. The BoG's creation of a licensing regime for dedicated e-money issuers (DEMIs) should help bring further clarity as to who can and cannot serve as an EMI[7].

However, despite progress on the regulatory front, there remains some lack of clarity around regulatory approaches to specific FinTech business models. As one example: the FIBR team was surprised at the lack of online person to person (P2P) lending services available in Ghana, given high nominal interest rates in the market (see below). However, several members of our local reference group suggested that the BoG's views on online P2P lenders remained unclear (which, to our knowledge, is the case in other markets in Africa as well). This may have discouraged entrepreneurs from entering this space.

[4] The notes to the BoG's data are not clear as to the underlying transaction types included in the transaction volume statistics. E.g. It may be that the data is counting separately the component parts (cash-in, money transfer, cash-out) of money transfer transactions, and hence there is double or triple counting in the statistics.
[5] As a point of reference, this figure of 4.5 transactions per active user per month is greater than the estimated number of M-PESA transactions per user per month in 2013 (2.1/ active user) in 2013, when the company had around 15 million active users. However, the M-PESA figure was a rough estimate based on limited data made available by M-PESA at the time. Source: Ignacio Mas, Mobile Money Maths (June 19, 2013)
[6] The BoG dataset does not make clear whether G2P payments are included or not.
[7] We are not aware of any MNOs having received their e-money license as of the time of publication.

Accessible APIs

Another positive, though (to date) more modest trend working in favor of FIBR FinTechs is the increasing use of accessible/usable Application Programming Interfaces (APIs), or sets of "routines, protocols and tools for building software applications" between companies in Ghana.[8] This is important because accessible APIs enable tech companies to build upon one another's work, allowing individual companies to focus on what they do best in their respective value chains[9]. While it would be an exaggeration to claim that Open APIs (see box below for definition) are the market norm, it is clear that private and public APIs are already playing a critical role in connecting the core institutions of Ghana's financial ecosystem.[10]

Getting Specific: Three Types of APIS

From Payment APIs: What, Why and for Whom? (BFA, 2016)

BFA divides APIs into three categories: private, public and open. Private APIs, as the name implies, are proprietary to a given company and intended solely for the transmission of sensitive information across a closed network. Public APIs provided a limited set of functionality to a curated set of trusted partners through standardized communication channels called API endpoints. Open APIs are like partner APIs but open to the world, employing interactive public documentation, an automated onboarding process, and even code samples and libraries. Providers of open APIs focus on providing a quality developer experience to those looking to integrate, and are subsequently rewarded with a much broader client base.

There is a natural progression for online services to evolve through these various APIs phases, with risks (e.g., security, reliability, resources) and benefits (e.g., scalability, growth, mass adoption) weighed at each step.

FinTech-relevant aggregators such as FIBR partner IT Consortium (in the education software & payments sector) along with Interpay Africa and Zeepay (each with a payments focus) and SMSGh, a USSD/SMS aggregator, stand out for their ability to work with MNOs and banks to extend the reach and impact of their services via public APIs. One way to extend this further could be to offer these services through Open APIs.

Digital payments aggregators in Ghana will benefit FIBR FinTech companies not only through the quantity and depth of connections they have to other institutions in the space, but also because they are able to combine digital offerings in ways that serve the market more flexibly than regulated financial institutions do at present. This flexibility may prove critical for putting together innovative solutions around products involving payments, savings, loans, insurance, or other transactional features involving bank accounts or mobile money.

Headwinds in the environment

Access to affordable credit

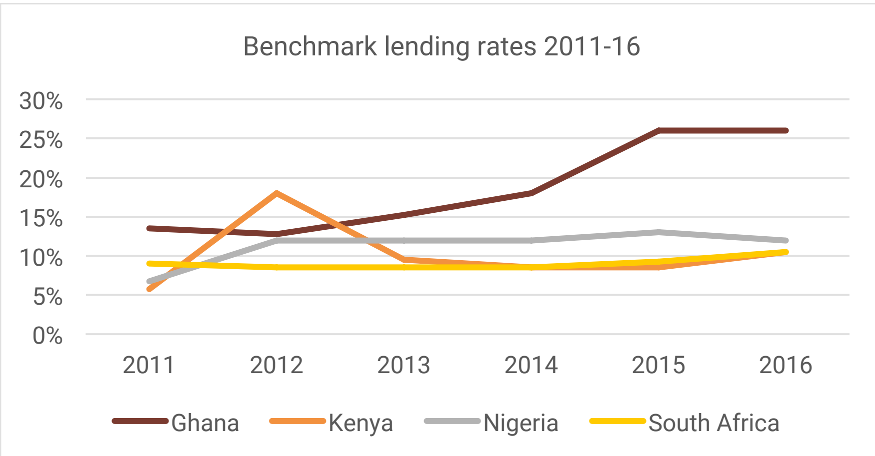
Access to affordable funding is essential to the growth of those FIBR FinTech companies which offer credit, directly or indirectly. Three components have bearing on this: the cost; legal rights/ lender

[8] Definition provided by Webopedia.
[9] BFA met with variety of FinTech players, banks, and MNOs across Ghana during our FIBR partner screening work. This afforded us a window into the usage of APIs in the Ghana.
[10] This publication uses the term public API as per BFA's March 2016 publication. Others have referred to these as partner APIs.

protections; and availability of credit information. Of these, two are constraining the growth of retail credit markets.

Cost: Nominal interest rates are high relative to other African markets (see graphic below), creating the perception among borrowers and in popular media that credit is expensive in Ghana[11]. Real interest rates (accounting for inflation) tell a slightly different story: the spread between banks' real interest rates on lending and savings is very high (21%), which implies that these margins are vulnerable to disruptive offerings from non-bank players (e.g. P2P lenders)[12]. However, this has yet to happen, due in part to lack of regulatory clarity on these models.

Figure 4: Nominal monetary policy rates in select African markets



Sources: Central Bank websites, except for Nigeria: www.tradingeconomies.com

Lender rights: The World Bank's *Doing Business* Indicators gave Ghana a relatively high ranking (#42 in the world) under its Getting Credit category, far better than Nigeria (59), Cote d' Ivoire (133) or Tanzania (152). However, as this ranking reflects the relative strength of legal rights for lenders on secured transactions (rather than general credit accessibility per se), Ghana's relatively high ranking in Africa may not be directly relevant to FIBR partners' credit offerings to MSMEs and end-users.

Credit information*:* Shallow credit bureau penetration—only 15% of all adults in Ghana are registered in at least one of the country's three credit bureaus[13]— also contributes to difficulty in accessing credit at present. The new customer data generated by FIBR partners' offerings should in time increase the amount of credit information in the market.

[11] Ghana's high nominal interest rates appear to stem from the depreciation of the cedi, amidst high inflation following the government's removal of subsidies on petroleum in 2013-14. Source: Global Impact Investors Network report on Ghana. Report available at: https://thegiin.org/assets/upload/West%20Africa/Ghana_westafrica.pdf

[12] BFA calculated this as the difference between the real lending rate (BoG's rate of 25% less 19% inflation in Ghana, or 6%) and its real savings rate (mass market savings accounts pay around 4% per year; after inflation this works out to a real return of -15%). Hence the 21% spread in real interest rates.

[13] The BoG had issued three licenses as of late 2014. Source: http://www.ghanaweb.com/GhanaHomePage/NewsArchive/MFIs-credit-bureau-on-course-328363

Access to risk capital and venture financing

FinTech companies of all stages require funding to support their growth. Just as a funder ecosystem which includes banks, private equity firms, impact investors and others has supported the growth of tech companies in Silicon Valley, so too will FIBR FinTech companies in Ghana require access to different funding mechanisms to grow.

However, members of FIBR's local reference group cited several reasons why FinTech companies have, to date, found it difficult to secure funding:

- FinTech entrepreneurs' difficulty pitching their business models to funders
- Funders' lack of understanding of FinTech business models
- General need in market for greater access to information about FinTech companies, e.g. third party liaisons knowledgeable about both potential funders and FinTechs

Impact investors themselves have cited a lack of exit opportunities, companies' reluctance to offer equity stakes to external parties and a general lack of investable businesses (vs. investors' impact criteria[14]) as significant obstacles to investing in businesses in Ghana, according to the 2015 report on West Africa by the Global Impact Investors Network (GIIN)[15]. Ghana's regulations related to foreign direct investment (FDI) do not appear to be an inhibiting factor here, as Ghana received a perfect score (100/100) on the World Bank's Foreign Direct Investment (FDI) Regulation Index.[16]

The findings from Caribou Digital's 2015 analysis of the *Ghana Digital Entrepreneurship Ecosystem* for GSMA confirm FinTech companies' difficulty in securing needed funding. Of the 13 FinTech companies interviewed across a range of stages,[17] nine cited lack of financing as their first or second most pressing issue[18]. FIBR aims to generate and leverage data on MSMEs and customers to create affordable, relevant credit products.

Given these challenges, significant work remains to build-up a true two-sided (funder/investee) market capable of supplying risk capital to FinTech companies in Ghana. FIBR's data-driven approach will help FIBR partners develop funder relationships where needed.

Crosswinds[19]

Business partnership environment

The ability of FinTech companies to enter into and ultimately enforce partnerships with other businesses in Ghana is essential to the success of their offerings. Several indicators compiled by Caribou Digital[20]

[14] For example, the portion of firms in Ghana with audited financial statements (59%) is significantly less than comparable figures from South Africa (72% of firms) and Kenya (83%). Source: Enterprisesurveys.org
[15] GIIN report on West Africa (see prior reference).
[16] Ghana scored significantly higher than Kenya (82 out of a possible 100) and South Africa (77) on this index. Source: World Bank's Doing Business Indicators.
[17] These included early, seed and growth stage companies.
[18] Marissa Drouillard, Ghana Digital Entrepreneurship Ecosystem, December 2015.
[19] I.e. facets containing embedded threats & opportunities, with impact likely to vary across individual FinTech companies.
[20] Caribou Digital is currently finalizing its cross-market indicator set on the environment for entrepreneurship, a draft version of which it shared with BFA.

suggest that Ghana has a business partnership environment which is less supportive than that of other peer countries:

- **General ease of doing business:** Ghana's 2015 ranking by the World Bank of 114th (out of 181 countries) indicates that its regulatory environment is more 'conducive to business operation' than that of Tanzania (138th) and Nigeria (169) but less so than Kenya (108th) or South Africa (73rd)[21].
- **Enforcing contracts:** The World Bank rates Ghana as 54 on a scale of 100 with respect to the time and cost of resolving commercial disputes in court, placing it behind several peer countries including Kenya and Tanzania.[22]
- **Legal framework's efficiency for dispute resolution:** Similarly, the World Economic Forum's Global Competitiveness report rates the overall efficiency of Ghana's legal system in resolving disputes as a 4.2 on a scale of 7.0—similar to its scoring for Kenya, Nigeria and Tanzania and behind that for South Africa.[23]

In short, the efficacy of the legal environment with respect to creating & enforcing business partnerships in Ghana is modest at best. In the absence of strong legal protections for enforcing contracts with potential partners, Ghanaian FinTech companies may instead opt to build-out their value chains 'from scratch' to avoid relying on other businesses. However, the decision of whether to partner or self-build individual components of FinTech value chains will vary from firm to firm—hence its categorization as a cross-wind.

Data protection & sharing environment in Ghana

Maintaining data protection (DP) is a key part of digital financial services and of building client trust so that they can reach scale.

Having passed its Data Protection Act and established its Data Protection Commission (DPC) in 2012, Ghana is one of 30 countries in Africa (out of 54 surveyed) which has or is developing data protection legislation[24]. Ghana's law requires that **all processors and holders of customer data register** with the DPC within 3 months of establishment to avoid facing civic and/or criminal sanctions (including imprisonment). Ghana's legislation is also reportedly the first in Africa to include breach notification, i.e. customer notification in the event of data compromise,[25] which may help establish Ghana as a leader in consumer protection in this regard.

For now, there are three implications for FIBR FinTech companies operating in Ghana:

1. **The end of DPC's grace period likely to result in registration push:** The DPC is now beginning to enforce compliance—especially registration—with the DP Act. The DPC is reportedly in the process of licensing vendors to carry out Privacy Impact Assessments for companies.
2. **Liability shift:** FinTech companies will be held responsible for data breaches.
3. **IT security readiness unclear:** Given the relatively recent enforcement of the DP Act, it is likely that FinTech companies' & other IT firms' levels of familiarity with data protection concepts varies significantly. This is a key point we will work with FIBR partners on as they seek to reach scale with solutions developed under the project.

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[21] World Bank's Doing Business rankings, with data available via Google Public Data
[22] World Bank Doing Business data available at: http://www.doingbusiness.org/data/exploretopics/enforcing-contracts/frontier
[23] World Economic Forum data on Economic Competitiveness via Google Public Data.
[24] As of May 2015. Source: Simmons and Simmons presentation to Ghana's DPC conference in early 2016.
[25] Source: Cynthia Rich, Bloomberg Privacy and Security Law Report, 2014.

The guidance contained in Ghana's DP Act can useful in helping FinTech companies protect customer data—if they choose to embrace it.

Though we focused this discussion on the factors most crucial to the success of FIBR FinTech companies in Ghana, we do not wish to downplay the importance of several other facets:

- **New business registration:** Several members of FIBR's local reference group noted that the Ghana Revenue Authority's registration procedures can be onerous for small businesses. It's unclear whether this has discouraged the formation of new FinTech companies.
- **Access to electricity**: In the last 1-2 years, power outages have become a near daily reality for many Ghanaians and have forced many businesses to buy private generators. However, recent data from the World Economic Forum's Global Competitiveness Survey suggests that the quality of the electricity supply is not significantly worse than in South Africa or Kenya[26].
- **Tech talent:** Data on usage of Stack Overflow, a question and answer site for programmers, serves as a proxy for how many users in a country (per 100,000 people) are actively posting and answering questions related to software engineering.[27] By this measure, Ghana has about half the number of Stack Overflow that Kenya does and one-eighth South Africa's—suggesting that there may be fewer tech professionals in the market relative to peer countries.[28]

Conclusion

On paper at least, Ghana's enabling environment appears supportive for FIBR FinTech companies. The growth of mobile money and the trend towards open APIs will support FIBR Fintech partners; while Ghana's data protection laws & e-money guidelines seem to have clarified some of the rules of the road affecting FinTech companies. Yet despite these positive trends and the apparent vulnerability of traditional lenders to disruption, so far few alternative lending models (e.g. P2P lenders) have emerged. By contrast, mobile money has enabled some new business models in savings and especially in insurance.

The reasons why FinTech companies have yet to fully play in the gaps in the market for financial services in Ghana are only partially clear. Limited debt and equity funding options may have restricted them from developing alternative credit products; and limited ability to enforce contracts may have discouraged them from partnering with other businesses in building-out their respective value chains. For these reasons, whether new data-driven approaches can attract sufficient appropriate funding and open new pathways to affordable credit for consumers and MSMEs remains uncertain.

FIBR operates at the level of supporting innovative individual projects with partners but in the course of doing so, will continue to explore further whether there are other environmental constraints to success; and will monitor the environment in Ghana for these linkage models over the life of the project.

[26] WEF competitiveness survey. Ghana's quality of electricity supply was rated a 3.0 on a scale of 7.0 (with 7 indicating the supply is 'sufficient and reliable). Ghana rated 3.4 and South Africa 3.7 on this scale.
[27] This interpretation was provided by Caribou Digital as part of its Entrepreneurship index.
[28] Source: Stack Overflow user data: http://data.stackexchange.com/stackoverflow/query/352995/top-users-by-country