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DIGITALISATION, DATA AND OPEN BANKING: A SOUTH AFRICAN PERSPECTIVE

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EXECUTIVE SUMMARY

Digitalisation has changed the way in which many industries operate, including through allowing companies to connect with customers electronically and to collect and leverage the benefits of large data sets. In the financial services industry, digitalisation lies at the centre of a wide range of innovations both from traditional financial service companies as well as niche technology companies which have had effects on the efficiency, cost and range of services available.

However, given some of the features of digital markets and platforms, including the fact that many of these markets are two-sided, have network effects and benefit from large scale economies (particularly of data) there is the potential for the development and exertion of market power. As such, digital platform power and the impact on competition in markets is of concern internationally and has resulted in various investigations and enforcement decisions across sectors. In financial services, this has resulted in some policy developments specifically focused on enhancing competition, including through increasing access to data.

In South Africa digitalisation has meant increased use of platforms in numerous industries. This paper seeks to understand the nature and impact of the growing power of digital platforms for businesses in South Africa through the lens of developments in banking. First, we seek to map the landscape of the use of digital platforms and data within the industry. Second, we aim to investigate the nature of these platforms and the manner in which they alter competitive dynamics in the underlying industries, for example by playing a gatekeeper role, controlling access to customers or markets or changing the terms on which companies can compete. Third, we seek to understand the extent to which competitive interventions that have been enforced or mooted in other countries such as open banking could potentially mitigate some of the competitive harm in the South African context.

We find that South African banks are using digital tools in order to contact and interact with customers and are using data and digital sources to enhance competition, innovation and the provision of services, to provide better customer profiling (for risk reduction), fraud detection, personalized marketing, and personalization of value added services. However, there is a sense that data available is not being used to its full potential. This is through to be for a variety of reasons including legacy systems and complicated data structures, regulation or perceived regulatory risks which are limiting data sharing across divisions and types of products and skills.

In financial services markets in South Africa there is recent entry, and much innovation from existing and new banks as well as fintechs. There is an argument that banks are a platform for data and that access to this data can assist competition. Other banks could potentially benefit from data portability which would reduce barriers to switching for customers and forms of open banking which may provide competing banks with historic data that would assist in decisions relating to risk. Fintech providers which are varied and serve many niches require access to data for a range of purposes from personal financial management systems to payment systems. Currently numerous fintechs use screenscraping but this has inherent risks. Access to data through a secure API as is the case in open banking could have significant benefit. Big tech companies who could combine data with soft data that they possess from customers to create new products are a third potential beneficiary of bank data.

Various countries have created systems to provide customers with access to and control over their banking data, generally through standardized APIs. In the South African context it is clear that secure data access and standardization of this access across banks could enhance

innovation and competition in financial services. However, there are some concerns. This includes concern over security and who would bare the risk of liability for security breeches.

For these markets it seems important to create the conditions for effective and secure data sharing to further unlock the potential for consumer gain. However, as a heavily regulated market it is essential that the various regulators and entities work together in developing this framework in a manner that works for this market and meets the needs of fintechs and banks. This includes ensuring that policies being developed provide consider financial sector needs such as privacy and address issues such as liability. However, it also means ensuring that these are not being used as unreasonable impediments to the entry of fintechs or who may want to compete more directly with banks in certain areas or new entrants. Entry from big tech into this sector in South Africa, should it occur needs to be carefully monitored to ensure that asymmetric regulation does not create unintended consequences.

1 Context

Digitalisation and the development and growth of digital platforms have changed the shape and competitive dynamics in a range of industries. The same is true of financial services which has for several decades been undergoing an incremental process of digitalisation (eg. the introduction of ATMs and electronic bill payment). Financial services companies have in many instances benefitted strongly from the scale economies and ability to enter new markets that digitalisation has enabled, through mechanisms such as mobile and branchless banking and advances in the ability to better leverage large datasets for risk profiling and customer targeting.

However, like other sectors the increased use of platforms can impact on the competitive landscape of the sector. In particular, the enhanced role of data can impact on competition in three areas. First, if data provides a competitive advantage it could be argued that data or a lack of data inhibits competition between banks, and in particular has an impact on new entrants. Second, it could be argued that insufficient access to data hinders competition and innovation from non-bank players. This could encompass “fintechs”. Thirdly, the collection data and strength in adjacent markets by large international technology platforms (“big tech”) can provide them with the potential to be both gatekeepers to the market and competitors to traditional banks.

Interventions such as the introduction of open banking and requirements on data portability have increasingly been mooted as means of preventing this. However, concerns are also arising from the fact that providing certain dominant platforms with access to an additional data stream may have other unintended consequences. In this paper we assess the impact of the power of digital platforms on financial services in South Africa, with a particular focus on banking with view to understanding the market landscape in this context and the potential for in other countries and the relevance of some of these interventions to the South African context.

The study used a combination of qualitative and quantitative data. Primary data was collected from stakeholders in the value chain in face-to-face, telephonic and Skype interviews. 10 in depth interviews were carried with key interviewees with expertise and experience in financial services. Data was also collated from online sources including company websites and the annual reports of listed companies. Secondary data was collated from a range of sources including Statistics South Africa, and commercial data sources including Similarweb. This was triangulated with a review of academic literature, and news articles.

The paper is focused on three objectives.

- First, we seek to map the landscape of the use of digital platforms and data within the banking industry.
- Second, we aim to investigate the nature of these platforms and the manner in which they alter competitive dynamics in the underlying industries, for example by playing a gatekeeper role, controlling access to customers or markets or changing the terms on which companies can compete.
- Third, we seek to understand the extent to which competitive interventions that have been enforced or mooted in other countries in these industries, such as open banking relate to the South African context.

We conclude by drawing together key insights and policy recommendations.

2 Market background in South Africa

The South African banking sector is made up of a range of participants, products and infrastructure. Banks in South Africa currently hold R 4.2 trillion in deposits and banks process R110 trillion in payments annually.¹ Financial inclusion in South Africa is high with 80% of adult South Africans holding a bank account in 2018.² However, a lot of this inclusion is shallow with almost 40% of these accounts underutilized.³

Banks are regulated by two key regulators the South African Reserve Bank, who focus on prudential regulation, and the Financial Services Board who act as a market conduct regulator. There are also a range of institutions that assist in developing different functional areas such as the Payments Association of South Africa that governs payment systems, the Financial Intelligence Centre who focuses on financial data related to crime such as money laundering, and the National Credit Regulator who regulates credit extension.

Banks provide a range of products to a wide variety of markets encompassing corporate, SME and retail customers, and products including savings, credit, transaction services as well as wealth and advisory, insurance and other adjacent services. In this study we primarily focus on the provision of credit and transaction (including payment services).

The largest participants in the South African retail banking sector are what are often termed the “Big Four”, namely Absa, First Rand (encompassing First National Bank), Nedbank and Standard Bank. The market share of these four banks by assets make up over 80% of the market (BASA 2019). There are a range of other banks that compete including locally controlled banks such as Investec who has a large market share in their niche market of higher net worth individuals and Capitec who has grown to increase their share of the market through penetration at the lower end of the market.⁴ Traditional banking in South Africa has been changing in recent years, in part through to digitalisation which has enabled the entry of lower cost banking models, and enhanced banking channels.

2.1 The impact of digitalisation on banking

Traditional banking typically relied heavily on scale and infrastructure build-out including brick and mortar branch infrastructure and ATM machines. The need for widespread branch infrastructure created an extensive capital requirements. Developments in technology have meant that banks increasingly are able to enter and expand without physical infrastructure, particularly due to the fact that digitalization has enabled “branchless banking” through internet and mobile banking, as well as through digital terminals. In South Africa, there has historically been instances of branchless retail banking by banks (typically targeting the affluent market) such as by Investec or Sasfin. However, the lower cost of branchless banking is also enabling new entry. The SARB recently licensed three new companies to provide banking services, namely Discovery Bank and Tyme who are both registered banks and Bank Zero which is a Mutual Bank. All three new entrants are branchless or fully digital banks.

¹ South African Reserve Bank (2019), Deposits October 2019, available at <https://www.resbank.co.za/Research/Statistics/Pages/Banks-BA900-Economic>Returns.aspx>

² Finscope (2018), Finscope South Africa Consumer 2018 Results factsheet, available at <http://finmark.org.za/finscope-south-africa-consumer-2018-results-factsheet/>

³ For example, 7% are dormant and 33% are used as “mailboxes” in which all money is withdrawn as soon as it comes into the account.

⁴ Other locally controlled registered banks are African Bank, Bidvest Bank, Grindrod, Sasfin and UBank (formerly Teba Bank), mutual banks are Bank Zero, Finbond, GBS Mutual, VBS Mutual), foreign controlled registered banks include Albaraka, Grobank, Habib Overseas Bank, HBZ Bank and Mercantile Bank and there are also 14 branches of foreign banks.

Incumbent banks have also used digitalisation to innovate strongly in various ways. They have used digitalisation to provide *new digital channels to customers*. Most incumbent banks in South Africa allow customers to access financial services using the following digital channels (i) ATM banking (ii) cellphone banking (usually using USSD channels, for older generation devices) (iii) Mobile banking (through apps on smartphones and tablets) and (iv) internet banking. Some banks are experimenting further with channels such as banking through social media platforms. For example, Absa is providing features such as “chatbanking” through social media which, after a registration process, offers banking using Whatsapp and Facebook Messenger for a basket of transactions including purchases of airtime and electricity, beneficiary payments and checking account balances.⁵ The newer banks appear to be focused primarily on app and internet-based banking, although Tyme has rolled out digital terminals in supermarkets which allows reach to customers that do not have smart devices.⁶

Several banks have partnered with fintechs or directly provide *value added services* such as dashboards for improved financial management systems. Discovery Bank is using this as a core value proposition, noting in their marketing materials that the bank will offer a number of personalised tools, using data from various sources to deliver spend management and financial planning features to customers.⁷

Banks are also increasingly using digital means such as social media as a forum for *interaction with consumers*, and to enhance their ability to market and research customer preferences.

There are also increased *channels to facilitate payment*. This includes a range of payment mechanisms that currently work off credit or debit card infrastructure in the background. For example, QR code enabled systems such as Masterpass, Snapscan and Zapper (as well as Samsung Pay and Apple Pay though these are less common in the market) rely on credit/debit card rails and infrastructure.⁸ Thus, although it looks like scanned mobile payment it is ultimately a card payment. This is different to closed systems that occur in other markets such as Alipay or the proposed Facebook Libra. At present, there is no large closed payment system that has made large inroads into the local market. These payment mechanisms aimed at consumer convenience and choice are done both in-house and in partnership with fintechs and include own-branded and partnered products. Going forward the Payment Association of South Africa is looking at ways in which to develop the payment system platform architecture so that there is the potential for similar value added services to be added in a manner that more innovation can occur in the account to account space at clearing layer. This will be discussed later.

Both banks and fintechs are also utilizing digitalization to *enhance systems and operations*. This includes a range of innovations in partnership and competition with other companies including other banks, fintechs and Big Tech.

However, at present the financial services space in South Africa is largely dominated by banks. A ranking of the top apps in the sector in the Google App store in January 2020 shown below highlights this.

Table 1: Financial services apps in South Africa (Source: Google)

	App	Category
1	FNB Banking App	Bank

⁵ Absa, Ways to Bank, available at <https://www.absa.co.za/ways-to-bank/chat-banking/>. Accessed on 27 February 2020.

⁶ Tyme Bank, <https://www.tybank.co.za/banking/where-to-bank/kiosks/>. Accessed on 27 February 2020.

⁷ Discovery website, available at <https://www.discovery.co.za/bank/behavioural-bank>

⁸ See for example, FNB Pay

2	Capitec Remote Banking	Bank
3	SD Currency Converter	Informational
4	Absa Banking App	Bank
5	Capitec Bank	Bank
6	Standard Bank / Stanbic Bank	Bank
7	Nedbank Money	Bank
8	MetaTrader 4 Forex Trading	Trading platform
9	MetaTrader 5	Trading platform
10	Discovery	Insurer
11	Old Mutual SA	Insurer
12	Investing.com: Stocks, Finance, Markets & News	News
13	FaucetPot	Cryptocurrency wallet
14	Exness Trader: Everything Traders Need	Trading platform
15	Luno: Buy Bitcoin, Ethereum and Cryptocurrency	Cryptocurrency wallet
16	Nedbank South Africa	Bank
17	Hello Paisa	Money transfer
18	Investec	Bank
19	Mobiloan	Credit
20	EasyEquities	Investment

In the next section we focus in more detail on how banks are utilizing data.

2.2 The role of data

Banks in South Africa and internationally have a wide range of deep data ranging from identification data, personal demographic information, transaction histories, credit records, product histories.⁹ South African banks store a range of data and use it for a variety of purposes. These include credit rating, customizing offers to customers, and for fraud detection purposes. In recent years enhancements in computing power have had various effects on the banking industry.

Firstly, as discussed previously, digitalization has changed the manner in which banks are able to *contact and interact with customers*. From requiring bank visits with largely paper based systems, bank customers now are able to use electronic or digital channels for transacting including internet banking and mobile banking have introduced banking apps which allow customers to bank using their smartphone and are increasingly communicating with customers using social media. While this allows greater convenience to a customer, these channels may allow for the collection of other information on the customer in the process. For example, use of the website may allow the bank to use cookies to draw patterns on usage on the website and use of an app allows for the provider to draw certain analytics which may or may not include features such as geolocation.

Secondly, digitalization of key data sources has allowed for *enhanced competition for innovation in provision of services to customer*. For example, digitalisation of the South African Home Affairs smart identity system has allowed banks to do digital identity verification through fingerprints and photographs. This has meant that there is increased innovation in branchless banking and remote onboarding customers. For example, FNB has used this to market an

⁹ Interviews with banks.

ability to set up a bank account using a “selfie” on a mobile device which is matched to the biometric photograph on the home affairs system, while Tyme bank utilizes thumbprints to verify ID using its kiosks at supermarkets also connecting to that database. Geolocation tools linked to banking apps are being developed to allow for verification of address.¹⁰ While this has benefits in terms of fraud prevention and increased access to bank accounts, it also provides the bank with stream of data on customer location. Use of social media as a communication tool may also provide the bank with a range of other forms of soft data on individuals.

Thirdly, digitalization and the data that it produces allows for *better profiling of customers for risk reduction*. More data enables companies to understand the customers better. This can be used for risk profiling for products such as insurance and provision of credit. While historically decisions were made on a limited subset of data (for example, in insurance it may be based on tables that cover family history of medical conditions, age, gender, and past claims) with enhanced data sources (including what is termed “soft data”) this is changing and data is being used to track and model behaviour that impacts on risk, as well as to manage it. For example, insurers in South Africa such as Discovery use tracking systems in cars to reward safer driving with lower car insurance premiums and track healthcare using incentive schemes that can often include use of a wearable health tracking devices which shares data with the insurer. While this has benefits in adjusting behaviour to reduce risk, it also amasses a large amount of data which potentially has predictive value. While traditionally, banks and other institutions fed data into credit bureaus which allowed for an assessment of risk, new data sources including non-traditional data sources (such as behaviour on social media) are seen to provide novel means of assessing risk. Non-traditional measures may be used by fintechs for credit provision, particularly to the unbanked. However, it does not appear that there is currently any use of alternate data sources in the provision of South Africa by banks or fintechs at present in contrast to other countries such as Kenya. It is in this realm that access to aggregated financial transactions for a single customer can provide assistance in managing risk.

Fourthly, data can be used for *fraud detection*. Suspicious patterns of behavior can be flagged more efficiently using technology than using direct means. For example in insurance, technology has been used to flag unusual claims patterns in databases.¹¹ In banking, data can be used to flag transactions that raise suspicion in terms of money laundering.

Fifthly, data can be used *to personalize or target a customer for marketing purposes*. Online behaviour can be used to identify and target advertising at customers that appear likely to need a product. While this is most obviously targeted through keyword searches for products, it can be targeted more loosely, for example, targeting customers searching for cars online with car financing adverts. This type of marketing depends to some extent on third party data through partners such as search engines and social media but can also be from other schemes such as supermarket loyalty schemes if customers choose to opt in. Personalisation can potentially become a lot more sophisticated if data from a wide range of sources is combined using the right tools. At present, however, our understanding from those interviewed in the banking industry was that personalisation of packages to a particular consumer is not being used per se, but data is being used in a more traditional marketing sense to direct market standard products that have been developed to customers who fit particular profiles. Data has simply enabled more narrow, targeted and direct profiling. Data is also used on an aggregate basis (depersonalized) to look at general trends and marketing strategies.

¹⁰ Interview with large bank.

¹¹ Interview with Discovery Health

Sixth, data can be used to provide *personalized value added services* such as financial management tools, comparison tools etc. This is often done through 3rd party sources banks through screen scraping or application programme interfaces (APIs). For example, 22Seven, an app owned by Old Mutual allows users to draw on all their financial products to a central dashboard used for financial management. However, it can also be done internally, and several banks are offering some form of financial management tools, while Discovery Bank and Bank Zero are using it as part of their core value proposition.¹²¹³ Other 3rd party providers also use data drawn from banks to engage in other services (such as accounting programmes by Xero and Sage which draw transaction data).

In terms of use of data by banks in the South African context there was some consensus that South African banks were not fully utilizing the potential of the data they held and there were clear limitations in how data was used across parts of the bank or larger financial institutions. There was some variation from interviewees however, in terms of the reason for this.

Data structure: More than one bank interviewed believed that this was partly due to the historical uses of data which influenced the manner in which the underlying IT infrastructure was designed. This is in part due to the fact that the data is often stored on legacy systems that are siloed and were often developed in a bespoke manner to deal with particular products and functions. Furthermore, many legacy systems are “batch oriented” rather than “real time”. As such, even within banks there is often limited interoperability across systems, though banks are working on this. The creation of APIs has made use of data from different systems more feasible and some interviewees believed that the limitations from legacy systems were being overcome. However, there are still significant differences in how the metadata looks and the extent to which it can be combined across systems or entities in certain instances. This is different from many sectors in which digitalized systems are newer.

Regulation: Regulation or concerns over regulation including an emphasis on privacy appears to have limited the extent to which banking or transaction data is used and shared across divisions and entities. Companies that we spoke to noted that personal data was categorized with different levels of privacy controls (for example, one categorization of data used was public, confidential, highly confidential and secret) with limitations on who could access which category of data for which purpose limiting the extent to which data is used. The extent to which data is shared across different types of products within an entity (for example, insurance and banking) is even more limited and the institutions that we spoke to kept this data very separate with an exception of opt-ins that let one division contact a customer of another division for marketing purposes if they had opted-in to this. Some companies try to benefit from data without compromising privacy by transforming the data, for example to create depersonalized indices attached to a consumer. For example, data may be used to create a “price sensitivity index” for a customer that can be used by divisions that do not have access to the underlying data for privacy reasons. However, absent guidelines many institutions appear to be taking a more conservative approach when it comes to data usage.

Skills: Some interviewees noted that while there were a range of skilled South Africans working at banks and fintechs, skills in machine learning and AI was still limited.

¹² <https://businesstech.co.za/news/banking/284158/discovery-bank-to-launch-in-march-2019-heres-what-you-need-to-know/>

¹³ Bank Zero Press Release (2018), available at <https://www.bankzero.co.za/press-release-16-01-2018.html>

3 Banks as a platform

Given the range of data collected by banks there is an argument that banks themselves are a platform for data and that access to this data is important. There are three possible beneficiaries of bank transaction data:

Other banks: The first category of potential beneficiaries of bank data is other banks. The argument is that a customer is reluctant to switch banks if it appears that they will be disadvantaged by their new bank not having sufficient information to make decisions regarding credit etc. In this instance, if banks could get access to transaction data it could facilitate multibanking and/or switching as historic data no longer provides an advantage to current banks. This can occur through data mobility/portability as discussed later.

Fintech providers: The term fintech encompasses a range of companies that use technology to provide solutions in the financial services industry. These can be product, service or process related. The two key categories are technology that enhance financial services (such as technology sold to banks or insurance companies to assist in compliance with regulation or risk assessment) and the second is technology enabled financial services (such as payment services used by consumers). They range from apps that assist with shopping for quotes for financial services, assist with regulatory objectives such as identity verification, assisting consumers to utilize their data to better serve their budgetary or business needs, using automation and AI to navigate risk rating. However, for many of these companies access to bank data is important for providing customers with greater options, particularly as they often cater to niches and underserved segments. The fintech system in South Africa is constantly evolving but includes the following:

- *Personal finance solutions:* Personal finance solutions include comparison services to allow users to compare financial products, wealth management, savings and investment services and applications eg. 22Seven. Aggregation of data on transactions (including across banking products and platforms) could be used for services including financial management offerings, accounting and tax services. However, there is the potential for far more innovation on this front. For example, it could include use of AI or robo-advisors which provide advice or portfolio management based on big data and algorithms. Transaction patterns can be used for comparison shopping services across products and providers.
- *Lending services and alternative finance:* Alternative finance services include non-bank credit services such as lay-buy, crowdfunding, rewards, and donation-based services. eg. Wonga, Rainfin, Fundr, mobicred and services. Bank transaction data can assist in credit provision for a customer who has savings or salary but does not qualify for a credit offering from a bank based on the size of loan required and risk profile.
- *Payments and remittances:* This can include both consumer and corporate payments and include (a) mobile wallets for person to person (P2P) payments, (b) payment gateways for person to business payments (P2B) and B2B payments as well as (c) remittance technologies for international payments. Examples in South Africa eg. PayU, HelloPaisa, Payfast, Paygate. For this payment integration with a bank is usually required to cash in and cash out. Screenscraping is currently used for some of these functions.
- *Regtech:* This refers to solutions using technology to assist in meeting regulatory requirements eg. This may include areas such as automation of KYC, technology that automates fraud detection, risk mitigation based on customer data. These companies may provide services to banks.

- *Insurtech and risk*: This includes a range of data science and digital solutions to better assess risk including using data from customer devices to better offer dynamic premiums (for example, using a car tracker to adjust car insurance premiums) eg. Allife. A subset of these companies may require access to banking data.
- *Corporate business solutions*: Transaction data may also be useful for technology related to business processes. For example, in corporate and business banking there are a range of capabilities enabled by API access to accounting, payroll etc. Standard Bank is developing product offerings for their corporate client base using in-house and fintech APIs to provide data solutions.¹⁴ Independent fintechs may also offer customers integrated offerings for which bank data is a necessary input.

For these companies access to (i) bank data and (ii) payment systems in a safe manner is often pivotal to business models. In South Africa at present most banks are interacting with selected or limited fintech providers using API systems. This is commonly done through “sandboxes” and “incubators” set up by banks. However, there appears to be some appetite from these companies for access to data from banks and access to the payment system which does not need bank approval, particularly for components on which they may compete more directly with banks.

Big tech: Another potential beneficiary of bank data are big tech companies who could potentially combine with other data to enter certain markets.

Given the different uses of bank data as a platform, there has been increased activity in understanding whether and how to regulate access to this data. Given the sensitivity of financial services it also requires a delicate balancing of competition and prudential needs. In the next section we discuss some of the key regulatory interventions and discuss them in the context of the South African market.

3.1 Regulatory interventions

Internationally there have been various ways in which regulation has attempted to address access to banking data. This has included data portability and open banking (through standardised APIs) which can include access to data, but also potentially access to payment systems and other functionalities. Previous inquiries have also focused on access to the payment system and as this is a complex and involved area we limit our discussion of it.¹⁵ In this section we assess the relevance of these interventions in the South African context with a focus on those that relate more strongly to data and large digital platforms.

3.1.1 Open Banking and data portability

Open banking generally refers to a system to provide customers with a measure of access to and control over their banking data.¹⁶ This includes requirements on banks sharing product and customer data with customers, and with consent, sharing product and customer data with certain third parties (such as apps and fintech providers) including via Application Programme Interfaces (APIs). Open banking has largely been introduced with the intention of improving customer outcomes including the following:

1. Price transparency

¹⁴ Interview with Standard Bank

¹⁵ Competition Commission (2008), Banking Enquiry Chapter 7, http://www.compcom.co.za/wp-content/uploads/2017/11/7-Access-to-the-payment-system_non-confidential1.pdf

¹⁶ Commonwealth of Australia. Australian Treasury (2017) *Review into Open Banking in Australia*. Available at <https://treasury.gov.au/sites/default/files/2019-03/Review-into-Open-Banking-IP.pdf> (Accessed: 20 December 2019)

2. Enabling comparisons to choose banking products to suit their needs. For example, enabling use of data on spending and transactions to compare and choose products that are appropriate
3. Better personal financial management: By accessing data it enables customers to utilize tools to enable personal financial management including better accounting, tax and budgeting tools.
4. Facilitating switching of providers

Open banking is being introduced and implemented in a range of countries. This includes the United Kingdom¹⁷, European Union¹⁸ who have already introduced standards in the form of open banking and Payment Systems Directive 2 (“PSD2”), respectively. Other countries are at various stages in the development of their laws and requirements. There is some variation in implementation including whether (i) it is mandated or voluntary, (ii) whether it applies to all banks or only the largest, (iii) whether it only applies to particular classes of products, (iv) what type of data it applies to (eg. raw, derived, aggregated, transactional etc). In Australia, for example, open banking is the first of consumer data rights projects but has only been mandated for the largest four banks. Credit and debit card, deposit and transaction account data is intended be shared with consumer consent for accredited providers. However, the actual implementation has been delayed to June 2020.¹⁹ Hong Kong is using a phased approach with 20 retail banks made a range of APIs available in Phase I.²⁰ Mexico is developing regulations that will apply to all products and services and open, transactional and aggregated data. In other countries such as the US there have been moves to enhance voluntary data sharing through APIs but it has not been mandated.²¹ In Singapore, open banking is also being supported by the monetary authority who have developed an API exchange to help market players connect.²² Open banking standards are also being developed in Nigeria through an NGO Open Banking Nigeria who is developing open banking API standards.²³ Open banking can assist by providing access to data stimulating competition in the fintech market and potentially between banks.

Fintechs and access to data:

In South Africa there are two main means by which fintechs get access to banks data, namely screenscraping and APIs.

At present a wide range of apps use far less safe methods of “screen scraping” to access user data from banks. Screen scraping which is widespread in the US involves the automated use of a website to extract data that an individual would normal do manually. In the banking space, it generally means that a third party is provided with login credentials and automatically logs into the online banking system to extract data (such as a user balance or transactions). It can be used for a range of functionalities from financial management apps to payment apps (such as the instant EFT applications used for e-commerce). However, there are significant risks in that it requires providing access to bank login credentials. In the event of a security breach it could potentially expose customers to fraud and compromise their protection since they

¹⁷ In 2018 the Competition and Market Authority (CMA) of the UK implemented Open Banking rules that required banks to provide third-party providers with access to data with customer permission. <https://www.openbanking.org.uk/>

¹⁸ The European Union has moved towards Open Banking by mandating payment initiation and retrieval by third parties via a Payment Services Directive 2 (PSD2)

¹⁹ Australian Competition and Consumer Commission, <https://www.accc.gov.au/focus-areas/consumer-data-right-cdr-0>

²⁰ Hong Kong Monetary Authority, Open Application Programming Interface for the banking sector, <https://www.hkma.gov.hk/eng/key-functions/international-financial-centre/fintech/open-application-programming-interface-api-for-the-banking-sector/>

²¹ Open Banking UK, <https://www.openbanking.org.uk/wp-content/uploads/open-banking-report-150719.pdf>

²² Monetary Authority of Singapore, Application Programming Interfaces, available at <https://www.mas.gov.sg/development/fintech/technologies---apis>

²³ Open Banking Nigeria, available at <https://openbanking.ng/>

voluntarily provided their passwords to a third party. Given the use of screenscraping apps and offerings in South Africa (ranging from financial management tools to instant EFT payments) there is thus clearly an appetite both for access to data as well as for applications which utilize this data from a customer perspective. A safer means of providing access is therefore necessary.

APIs which provide a means for third-parties to access information more securely, thus has some appeal. In the South African context, most banks provide API-based access to data to certain providers with customer consent. Nedbank has developed and launched an API marketplace that provides standardized API access (such as accounts API that accesses account transactions, a payments API that provides fund transfer capabilities, customer detail APIs, wallet and personal loans APIs). Other banks have “sandbox” offerings or “incubators” for fintechs which allow a select group to use APIs and often provide services to banks on a controlled basis. However, at present access is limited to those fintechs that banks are prepared to provide access to and there are no agreed standards. To provide many standard offerings fintechs therefore need to negotiate across different banks separately. Furthermore, if one or more banks do not agree this creates coverage gaps in the offering provided. In addition, it is more likely that banks agree to complementary as opposed to competing offerings.

Bank switching and data portability

A variation on open banking which generally creates access to data through APIs is data portability/mobility. This works off the principle that an individual owns their own data and can move it where required. In the European Union, the General Data Protection Regulation (GDPR) provides data owners with a right to data portability. While Open Banking or PSD2 requires banks to allow certain providers to access to information on accounts, GDPR technically allows customers to port their personal data. While Open Banking allows for real time data access, GDPR allows for data to be transferred on a deferred basis. The application to banking has not yet established. However, it seems that porting transaction histories could potentially prove useful to customers and providers in certain circumstances.

Interviewees were not clear on the benefits of ported data for their banks. Ported data was seen as potentially useful in the context of requiring transaction data for loans. However, practically it was noted that downloading bank statements electronically was fairly straightforward, and that credit bureaus hold a lot of data already. As such, it was not clear that the benefits of ported data were significant from the perspective of banks.

At present various countries such as the UK and Australia have current account switching systems and processes²⁴. In South Africa, there is no such system and customers generally leave bank accounts dormant or close them while starting a new one.²⁵ There are no real interbank arrangements on switching. Creating a means of porting data simply using electronic means of sharing personal data, transaction and credit histories may assist in this process.

The benefit is more likely to lie with the convenience to customers of easy switching.

In the banking sector, while many interviewees acknowledged the use of access to data for fintechs, and the potential benefits to consumers there were mixed responses to the introduction of open banking in the South African market. Banks interviewed acknowledged the benefit to creating safer channels for access to data and security protocols to replace the

²⁴Current Account Switching Service, <https://www.currentaccountswitch.co.uk/Pages/Home.aspx>

²⁵ World Bank (2018), World Bank Retail Banking Diagnostic: Treating Customers Fairly in relation to transactional accounts and fixed deposits. Available at <http://documents.worldbank.org/curated/en/732111536246467778/pdf/129778-WP-South-Africa-Retail-Banking-Diagnostic-Report.pdf>.

current screenscraping technology used at present which creates substantial risk to customers. However, there were various concerns relating to privacy, liability and security.

- Many banks raised concerns on managing liability for security breaches and losses of customer money as a result of abuse of the system in an open banking environment. A parallel was drawn to the debit order system in which banks had difficulties managing abuses requiring and expensive overhaul to protect customers. They noted that clear demarcation of liability would be important and that risk would need to be balanced.
- Concerns were also raised about the practicality of standardization of APIs given the different data systems across banks and the difficulties in organizing data into a manner that would be usable across businesses. However, it was agreed by some banks that access to certain basic information should be feasible.
- Some banks interviewed noted that previous data sharing exercises historically, namely credit bureaus allowed banks and companies to share simplified data on the basis of reciprocity and that a variation of this model may be workable dependent on reciprocity of data.
- There is some disagreement on the extent to which access to long term historical data is relevant. Some banks interviewed (including newer entrants) felt that recent purchasing behaviour reflected current circumstances, and that data over a very long period of time is likely to have less predictive value and potentially would not be worth the computing effort. Others argued that more data is always better.
- There were also concerns raised over the potential for asymmetric regulation if fintechs or large tech companies were able to utilize bank data to enable them to compete with the banks on certain functions (such as payment systems) without the same regulatory oversight and prudential requirements and the potential impact that could have on stability and consumer protection. One interviewee particularly noted that this would be of particular concern for big tech, raising parallel concerns to those discussed in the next section.
- In addition to banking data it was noted by informants that access to identity and location data was also important to fintechs and banks alike. As such, improvements in common datasets on address location to complement the Home Affairs identity database, and enhanced access to that data would also be procompetitive.
- As discussed in the box below, the industry is also considering alternative payment infrastructure structures that may create the scope for more varied secure interaction in the future. However, this discussion is still in its early stages.

Access to payments- current discussions

At present in South Africa there are two large payment ecosystems, namely cards and electronic. Cards are dominated by Visa and Mastercard and the card standards are set globally and comply with global formatting. The electronic payment system (encompassing the real time clearing system and electronic fund transfer system) was developed locally

Many payment systems currently facilitated by tech companies are backed by existing payments infrastructure, commonly card. For example, many QR code based systems require an individual to input card details and while the front end of the transaction is a phone based QR code scan, the background uses a card transaction. As such, if an international platform such as Samsung Pay wanted to provide payment infrastructure in South Africa they would create a relationship with a sponsoring bank and align to the system.

In South Africa at the moment there are a range of companies that are non-banks but have also registered as systems operators or third party payment providers with the Payment Association with South Africa and engage with the payment system.

Going forward the industry in South Africa is musing new means of enhancing the payment architecture to make it easier to use driven by PASA called Project Future which would create a new payment system for debit and credits using ISO 20022 messages with layers for value added overlay services. It would, for example, allow proxy services. For example, for a particular account you could link it to a cellphone number and as such it would like to account number if the interface is known and APIs are used. This in many ways is similar to an open banking layer which would open up infrastructure to non-bank participants in a safer way. The innovation would be in the value added services but payment would still be real-time, instant and secure. The clearing level would still be part of the bank's domain, but access would be widened. PASA believes that this would have significant benefits on innovation while maintaining a secure environment.

3.2 Concerns over entry by international technology companies

Internationally banking has been disrupted in part by a range of fintechs. However, in more recent years there have been various instances of entry by international tech giants who are leveraging their scale and networks in other platforms (such as e-commerce, search, devices) into the financial services sector. This has emerged more strongly in Asian markets (which is argued to be due to a range of factors including light regulation, underservicing of households and small businesses and the facilitation of transactions, but is slowly entering Western markets. These companies also often have dominance in various markets and are able to leverage this into keeping a gatekeeper role in terms of access to final customers.

3.2.1 International technology companies entry into financial services

International technology companies ("big tech") are seen to be well poised to enter financial services. This is due to a combination of demand side factors such as customer demand and consumer preferences (among younger consumers) and various supply side factors. These include technological sophistication, access to large datasets which provides information and can lower risk, access to funding, a lack of regulation and often a lack of competition in the

banking sector.²⁶ Some of the key international technology companies have entered financial services as follows:

Alibaba: Alibaba began as an e-commerce industry. However, they rapidly entered the financial services space after a range of new products. This includes Alipay which entered in 2004 to provide online payment services (primarily started to assist Alibaba's e-commerce website Taobao) but grew to an independent payment network (now Ant Financial), which now covers online and mobile payment (Alipay), online banking, wealth management, comparator shopping, insurance and credit provision and credit ratings (Sesame). The entrance of Yu'eobao an online sales platform for money market funds in 2013 however, propelled Alibaba's Ant Financial services to the spotlight as they signed up 50 million people within 6 months, Tianhong Investment fund which managed their money market fund became the largest investment fund in China within a year of launch.²⁷ In 2014 Alipay started a banking business called MyBank which uses data from the Alibaba network to assess SMEs for credit using big data.²⁸ Ant Financial has also applied for a digital banking licence in Singapore.²⁹

Tencent: Tencent has a range of financial services that it provides. This includes payment services (WeChat Pay and QQ Wallet aimed at younger users), wealth management (LiCaiTong), WeBank (in which it has a 30% stake), including the Weilidai service that uses WeChat data and WeChatPay spending behavior among others to preapprove loans. This is done in partnership with commercial banks and various other options including wallets and QR codes, stocks, blockchain.

Apple: ApplePay offers a contactless payment technology that can be used on Apple devices. It involves loading a debit or credit card onto Apple Pay and therefore works in conjunction with a bank or card services (and in the US with Social Security cards). Apple has also launched the Apple Card in conjunction with Goldman Sachs. It integrates into the Apple personal finance management tools.³⁰

Facebook: Facebook has launched a payment system Facebook Pay that ties into the different facebook companies (namely Messenger, Instagram, Whatsapp and Facebook). This allows consumers to add cards and Paypal and use this for payment across Facebook's accounts including on the Facebook marketplace. Separately Facebook is engaged in developing a cryptocurrency Libra.

Google: Google Pay allows users to digitally store credit and debit cards on an android device, hold a balance and to make P2P transfers (within the US) as well as allowing users to pay for products and services in store using their device. It is a combination of previous iterations the Google Wallet and Android Pay. Google is also entering traditional banking and have announced that they are to partner with Citigroup and Stanford Federal Credit Union to offer a bank account for consumers³¹

²⁶ Bank of international settlements Working Paper 779. Bigtech and the changing structure of financial intermediation, April 2019, available at <https://www.bis.org/publ/work779.pdf>

²⁷Haung, Y, Shen Y, Wang, J, Guo, F (2016). Can the Internet revolutionise finance in China. Chapter 6, China's New Sources of Economic Growth Ed. Song, Garnaut, Fang and Johnston (2016) ANU Press

²⁸ Lu, L (2018), How a little ant challenges giant banks?The Rise of Alipay's Fintech Empire and relevant regulatory concerns. International Company and Commercial Law Review, Issue 1, Thomas Reuters.

²⁹ CNBC (2020). China's Ant Financial applies for Singapore digital banking licence. Available at <https://www.cnbc.com/2020/01/02/chinas-ant-financial-applies-for-singapore-digital-banking-license.html>

³⁰ Apple Card Website, available at <https://www.apple.com/apple-card/>

³¹ Redegair and Hoffman (2019), "Next in Google's Quest for consumer dominance: banking, Wall Street Journal November 13, 2019, available at <https://www.wsj.com/articles/next-in-googles-quest-for-consumer-dominancebanking-11573644601>

*Amazon*³²: Amazon has partnered with Synchrony Bank in the US to provide a store card and various forms of credit cards, and with Visa, American Express and Mastercard to provide credit cards depending on the user's location and financial position.

It can be noted that the amount of Big Tech companies that have applied for payment service licence has increased significantly with Facebook, Alipay, Airbnb, Google and Uber acquiring PSD2 enabled payment related licences in the EEA in 2018 and 2019.³³

The prospect of big tech entering banking on a more sizeable scale has raised some alarm given their potential role as gatekeepers to consumers and the repository of data that they hold. For example, Padilla and Mano (2018)³⁴ argue that while the impact of fintechs on retail banking has thus far been limited, the entry by Big Tech into origination and distribution of loans to customers has the potential to harm competition and consumers. This is because these platforms have access to rich customer data sources and the analytical tools to use them which allows for better customization. Furthermore, there are concerns that there could be bundling of services and that if platforms were to sell bank products through comparison services they would potentially play the role of gatekeeper, increasing their market power relative to banks. They argue that this is likely to be exacerbated by asymmetric regulation. If open banking is required and large technology companies can access data on financial services, while their own platform data is held as proprietary data this would allow tech to benefit from banking data without reciprocity. They argue that this creates the risk of monopolization. They also argue that there is then increased risk of moral hazard and adverse selection as the tech platforms do not take on the borrowing risk if they sell loan products for banks. They argue for data sharing by big data to banks for a subset of data subject to consent, transparency, security using standardized APIs. The impact of big tech in terms of their impact on banking stability has also been raised (BIS, 2019).³⁵

There was wide variation from banks interviewed in their responses to big tech in banking in a South African context. Some banks highlighted concerns over asymmetric regulation. Most others viewed the concept of entry by technology companies as remote given current banking regulations. However, this possibility should not be ignored as even under current regulations there is the potential for them to enter using a sponsor bank. Interviewees noted that many current offerings by big tech in western markets used existing payment rails (such as card rails) or partnerships with actual banks, and that if this was likely to be the model of entry in South Africa, it is far less disruptive. Some interviewees noted that closed loop systems such as Facebook's Libra and Alipay could have a more unexpected effect if successful. However, past attempts to introduce closed loop systems in South Africa have not worked.

3.2.2 Access to customers

International technology companies interact with banks and their consumers in numerous ways. Unlike e-commerce or tourism in which search platforms such as Google have distinct comparison services and therefore provide a direct conduit to customers, at present banks and financial services companies utilize marketing from these companies on a more general basis. This includes advertising through pay per click methods, search engine optimization and general advertising.

³² Shevlin, R (2019). Amazon's impending invasion of banking. Forbes, July 8 2019. Available at <https://www.forbes.com/sites/ronshevlin/2019/07/08/amazon-invasion/#198205717921>

³³ Bank of International Settlements Financial Stability Board, BigTech in finance. Available at <https://www.fsb.org/wp-content/uploads/P091219-1.pdf>

³⁴ Padilla J, de la Mano M, Big Tech Banking, 20 December 2018, available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3294723

³⁵ Bank of International Settlements Financial Stability Board, BigTech in finance. Available at <https://www.fsb.org/wp-content/uploads/P091219-1.pdf>

At present, there is little concern over technology being a gatekeeper and conduit to banking customers. This may in some ways be a reflection of the fact that the industry is still fairly concentrated and depends to a large extent on non-price factors such as trust, reputation and behavioural biases that prevent switching. Marketing through traditional means is still being heavily invested in by larger banks.

Interviewees noted that while an individual may choose a simple account such as a savings account based on online searches for more complex products they were unlikely to fully depend on online sources. Furthermore, given the size of larger banks, a lot of marketing is direct to their existing consumer base and a lot of their analytics and marketing based on cookies depends on following these consumers. Interviews with banking representatives suggests that while search and online advertising is an important channel, they still find traditional advertising and brand development important in reaching their customer base and that the digital budget as part of the total advertising budgets has stalled in the last few years.³⁶

It can be noted that this may change in the future and may be changing already for insurance in which there are more comparison sites. However, at present in contrast to certain other online markets in which search platforms were a clear route to the customer, the same was not seen to be the case in banking.

3.2.3 Data ownership

Another issue that is relevant to discussions on data is that of data ownership. For example, in insurance a case currently before the Courts between Discovery and Liberty is testing aspects of consumer data ownership. Discovery is contesting Liberty's use of its "Vitality status" which is a wellness score achieved via its rewards programme to provide a wellness bonus to their insurance customers. While Discovery argues this is their intellectual property, Liberty argues that it is the customer's data. This is yet to be decided in Court and is likely to set a precedent in terms of personal data though it falls short of a typical form of data portability.

4 Conclusion

Going forward it is clear that there is wide-ranging change in the financial services sector and that the ability to use data is creating the opportunity for innovation. This is an industry that has also been subject to recent entry in South Africa and that is currently subject to increased competitive pressure.

It is also a heavily regulated industry in which many of the barriers to entry and expansion are not simply related to data and platform power but relate to a range of prudential and other requirements. Any competition interventions need to be balanced with financial stability and prudential considerations regulated by the SARB.

Discussions with banks, fintechs and industry stakeholders suggest that data held by banks holds immense power and that these could have consumer benefit in a range of ways including better financial management and systems resulting from interpretation of data patterns, better and more efficient means of transacting etc. However, full benefits depend on access to data and the sophistication with which data can be processed. South African banks do not appear to be fully exploiting the potential of consumer data at present. While certain fintechs are innovating, data access is often limited and at present some companies are using unsafe methods to retrieve data. As such, regulators need to focus on developing the preconditions

³⁶ Interview with executive at large traditional bank.

for safe and secure data sharing that provides consumers with the benefits of their data but also protects their privacy and limits risk.

Care should be taken to develop a regulatory approach that is suitable to the specifics of the market and the range of models of access should be considered carefully, along with other interventions that may create similar outcomes. From a competition perspective, it is important that regulators seriously consider how best reforms such as open banking will affect the market. While from a competition perspective there is a strong case for enhanced access to data for fintechs and for portability of data across banks, given patterns in other markets access to data by large technology companies should be monitored carefully given the potential for big tech to leverage dominance into further markets.

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