

الخدمات المالية المقدمة من شركات التكنولوجيا الكبرى: آثارها وفرص البنوك الإسلامية

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الملخص

أثار ظهور شركات التكنولوجيا الكبرى في قطاع الخدمات المالية مخاوف بشأن قدرتها على تعطيل الخدمات المصرفية التقليدية وإنشاء مؤسسات مالية خاصة بها. يهدف هذا البحث إلى فحص طبيعة أنشطة شركات التكنولوجيا الكبرى في مجال المدفوعات والتمويل واستكشاف قدرتها على تعطيل أنشطة القطاع المصرفي. اعتمدت هذه الدراسة منهجية وصفية لتحليل تقارير السوق والمواقع الإلكترونية الموثوقة لاستعلام السوق بالإضافة إلى مواقع رسمية للأخبار. تكشف النتائج أن أنشطة شركات التكنولوجيا الكبرى انتقائية تهدف إلى دعم أعمالها الأساسية

في التجارة والتكنولوجيا والدعاية ووسائل التواصل الاجتماعي، بدلاً من تعطيل الخدمات المصرفية. ومع ذلك، فإن مشاركتها في تمويل «اشتر الآن وادفع لاحقاً» (BNPL) تشكل تحدياً لبنوك التجزئة، دفعت على إثرها البنوك الإسلامية إلى إنشاء تسهيلات خاصة بها لـ BNPL. ويمكن تسهيل إجراء هيكلية المنتجات وفق الشريعة الإسلامية باستخدام التقنيات المالية مثل العقود الذكية وبوابات الدفع. ويمكن للبنوك الإسلامية أيضاً التعاون مع شركات التكنولوجيا المالية لايجاد تطبيقات تتناسب مع نمط الحياة الإسلامية أو تطبيقات سوبر آبس لتقدم تمويلاً وفق الاقتصاد الحلال. خلصت الدراسة إلى أنه يجب على البنوك الإسلامية النظر في هذه الفرص لتلبية رغبات السوق لدى العملاء صغار السن عبر الهاتف المحمول ووسائل التواصل الاجتماعي.

كلمات مفتاحية: شركات التكنولوجيا الكبرى، الدفعات، تمويل استهلاكي، سوبر آبس، مصارف إسلامية

Financial Services by BigTech: Impacts and Opportunities for Islamic Banks

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Abstract

The emergence of BigTech companies in the financial services sector has raised concerns about their potential to disrupt traditional banking and establish their own financial institutions. This research investigates the extent of BigTechs' activities in payments and finance and explores their intentions in disrupting the banking sector. The study adopts a qualitative methodology to critically analyse market reports and credible market intelligence websites and official websites of news agencies. The findings reveal that BigTechs' activities are selective and aimed at supporting their core businesses in commerce, technology, advertising, and social media, rather than disrupting banking. However, their involvement in Buy Now Pay Later (BNPL) financing poses a challenge to retail banks, prompting Islamic banks to establish their own BNPL facilities. Procedural complexities related to Shariah compliant structuring can be addressed using financial technologies like smart contracts and payment gateways. Islamic banks could also collaborate with FinTechs to create frequently used Muslim lifestyle apps or super apps that offer embedded finance for the *halal* economy. The study concludes that Islamic banks should consider these opportunities to meet the younger customers' mobile shopping and social media communication habits.

Keywords: BigTechs, Payments, Consumer Finance, Super Apps, Islamic Banks

1. Introduction

BigTech firms are large technology companies with extensive customer networks who have expanded their business models to include the provision of financial services. They include firms with core businesses in various industries such as social media, internet search, software, online retail, and telecoms. Compared to FinTechs, which require specialised services from banks, BigTechs have the potential to establish affiliate banks that provide a range of banking services, including money transfers, credit cards, consumer loans, business financing, checking and savings deposits, and may even offer capital market and insurance products. This has led to concerns that BigTechs pose a more significant threat to traditional banking institutions than FinTechs. Despite the rapid expansion of Alibaba and Tencent into finance in China, the unique circumstances in China's financial system have supported their development, and recent regulatory interventions have limited their activities outside of China. Therefore, assessing the challenges that BigTechs pose to banks, particularly Islamic banks, requires an analysis of their core businesses and current activities in finance rather than relying on the Chinese example as a predictor for the future role of Western BigTechs in the banking industry.

The problem of the research lies in the instance of integration of BigTechs into financial services that has raised concerns about their potential to disrupt traditional banking systems and even establish their own financial institutions. Such a trend has been observed in China, and similar developments are feared to occur in other regions. Therefore, the focus of this research is to examine the impact of BigTechs on banking systems, with particular emphasis on Amazon, Apple, Google, and Meta (formerly Facebook), which are the most prominent BigTechs in payments and finance outside of China.

The paper is structured as follows: The following section presents the methodology we applied in this research. Section three explores scientific research related to the BigTechs in the financial sector done by regulatory and standard setting bodies. Section four reviews the payment and consumer finance activities of the 'Big Four' BigTechs – Amazon, Apple, Google and Meta (formerly Facebook) – for gathering and assessing the evidence whether they make efforts to establish bank-like financial institutions. The fifth section highlights some implications of BigTech activities in payments and consumer

finance for Islamic banks. The sixth section concludes and identifies the opportunity for the Islamic banks and recommends the way forward for the Islamic finance.

2. Research Methodology

The research employs a qualitative research methodology to analyse the current state of financial services offered by BigTechs. Data is gathered from market reports and reliable websites by deploying desk research techniques. The research further critically analyses the financial services offered by BigTech companies with the primary objective of comprehending the potential impact of BigTechs on the traditional banking sector and identifying the potential challenges and opportunities therein. The research eventually recommends opportunities for Islamic banks in the areas of Buy Now Pay Later financing and finance embedded in lifestyle apps or super apps.

3. Literature Review

Researchers at regulatory and standard setting bodies have directed their attention towards non-financial institutions offering financial services, including BigTech companies. Therefore, we intend to review the recent developments of the scientific research related to the research topic prior to exploring market reports and websites to assess the contemporary instance of the financial services offered by the BigTechs. According to the 2019 annual report of the Bank of International Settlements (BIS), the entry of large technology companies i.e., BigTechs in the financial sector can bring about improvements in efficiency and financial inclusion. Nevertheless, regulators must ensure an equal playing field between big techs and traditional banks, accounting for the broad customer base, information access, and varied business models of big techs. The involvement of big techs in finance introduces complex and novel trade-offs among maintaining financial stability, fostering competition, and protecting individual data privacy⁽¹⁾. Moreover, Werth et al. (2020) explored the factors that influence digital transformation in the financial services sector. The authors noted that the development in the sector was evolutionary rather than disruptive, with most incumbents

(1) Bank for International Settlements (2019): Annual Report 2019 – Chapter III: Big tech in finance. BIS. <https://www.bis.org/publ/arpdf/ar2019e.pdf>

focusing on modernising and consolidating their backend systems to facilitate new customer-oriented services. The threat of BigTechs entering the market is identified as a primary driver for the digital transformation of the financial sector⁽¹⁾. So, in our research, we are interested in exploring how far such fears are present in the current market reports and websites to comprehend the potential impact of BigTechs on the banking and finance sector.

Boissay, Frederic and Echers, Torsten (2021) investigated the potential advantages and disadvantages of BigTechs entering the financial services industry and how they vary across different types of jurisdictions. The authors concluded that trade-off between efficiency and privacy is a critical aspect that depends on societal preferences and varies across the jurisdictions. Therefore, it is essential to coordinate policy frameworks at both national and international levels. This need for coordinated policy frameworks increases as big techs continue to expand their operations and influence across various sectors⁽²⁾. Furthermore, Chui (2021) focused on the financial services offered by two market-leading BigTechs of China with a special focus on payment services. The author examined the factors driving the development of the financial services by BigTechs and found that their large existing user base is a major factor contributing to the expansion in the financial industry. Besides many results, the author qualified the BigTechs as 'accidental financiers' rather than 'aggressive invaders'⁽³⁾. One of our research objectives is to investigate whether the finding of Chui is relevant to the contemporary instance of the BigTechs outside of China.

In a recent study Bains et al. (2022) examined the rapid expansion of BigTech companies in the financial sector of emerging markets and the associated risks. The researchers found that BigTechs have entered the financial services industry by using platform-based technology to offer services such as lending, asset management, and insurance. Their business model allows them to accumulate data from both their financial and non-financial activities, including social media. BigTechs are using big data and machine learning to improve pricing

(1) Werth, Oliver, et al. (2020). Influencing factors for the digital transformation in the financial services sector. <https://link.springer.com/article/10.1007/s12297-020-00486-6>.

(2) Boissay, Frederic; Ehlers, Torsten; Gambacorta, Leonardo; Shin, Hyun Song (2021): Big techs in finance - on the new nexus between data privacy and competition. <https://www.bis.org/publ/work970.pdf>

(3) Chui, Michael. (2021). Money, technology and banking: what lessons can China teach the rest of the world?. <https://ideas.repec.org/p/bis/biswps/947.html>

and risk management, and their interconnectedness with incumbent financial firms through cloud-based IT systems hosting could potentially create new channels of systemic risk. The authors suggest that a hybrid approach of entity- and activity-based supervision is necessary to mitigate these risks and achieve effective financial regulation and supervision.⁽¹⁾ Similarly, Congressional Research Services (2022) also reported the presence of BigTech including Amazon, Apple, Google, and Meta (formerly Facebook) in the financial services area over the last decade. They offer various financial services products to retail customers, including mobile payment apps, credit cards, and stablecoin wallets. Further, the report found that current regulatory framework for Big Tech's financial services is fragmented, leading to policy issues that include data security and privacy, financial inclusion, consumer protection, algorithmic bias, and third-party and cyber risks. These policy concerns are likely to be impacted significantly by the evolution of Big Tech companies, highlighting the critical importance of their regulatory treatment⁽²⁾. In this research, we seek to determine whether market intelligence and credible news agencies share the same concerns about Big Tech's that are expressed in the foregoing reports.

Noble (N.D.) discussed the changes in EU financial sector that evolved due to the regulatory reforms and the delivery mechanisms by BigTechs with a special focus on the Financial Conglomerates Directive (FICOD). The researcher examined the implications for supervision in light of the emergence of mixed activity groups that offer both financial and non-financial services⁽³⁾. In another research, Noble (N.D.) took account of the activities of BigTech companies in the purview of their connectedness with the financial sector. She viewed the existence of potential risks to the financial sector arising from the interconnectedness between the BigTechs and the financial sector. Thus, the author drew lessons from the great financial crisis and suggested subsequent reforms to propose a comprehensive mapping approach that combines activities and entities-based monitoring with a macro perspective

(1) Bains, et al. (2022). BigTech in Financial Services - Regulatory Approaches and Architecture. IMF. <https://www.imf.org//media/Files/Publications/FTN063/2022/English/FTNEA2022002.ashx>

(2) Congressional Research Service (2022): Big Tech in Financial Services. <https://crsreports.congress.gov/product/pdf/R/R47104>

(3) Noble, Elisabeth. (N.D.) The Next Generation of Financial Conglomerates: BigTech and Beyond. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3693870

for addressing supervisory blind spots to ensure financial stability and resilience in the face of technological innovation and disruption⁽¹⁾. Similarly, Zamil, Raihan; Lawson, Aidan (2022) at BIS highlighted the perceived benefits of BigTechs, such as superior technology and user-friendly apps, as well as mapped out five key risk factors. These risk factors include conflicts of interest, concentration of power and anticompetitive behavior, contagion and systemic risk, impediments to consolidated supervision, and the ability of parent or shareholders to support banks in times of need⁽²⁾. Our research aims to find the foregoing potential risks within the contemporary market reports and websites to comprehend the potential impact of BigTechs on the banking and finance sector.

4. BigTechs in Payments and Consumer Finance

All BigTechs are engaged in payment services and consumer financing. In addition, Amazon offers financing to invited merchants selling on its e-commerce platform, while Apple and Google considered involvement in deposits.

4.1. Payments

Two of the Big Four have made significant contributions to payment technology, while all have developed more convenient procedures for online and in-store payments ('X-Pays').

Technology: Apple and Google have developed contactless payment technologies for mobile iOS and Android devices (smartphones and smartwatches) in physical stores. The mobile devices replace payment cards at the point of sale (POS), but the technology still requires an underlying (physical or digital) payment card (debit or credit) issued by a bank. A digital representation of this card is safely stored on the smart device (Apple) or in the cloud (Android) and used for payment instead of the underlying payment card itself. Merchants need POS terminals to handle near-field communication (NFC) and to route transaction data through the Visa and Mastercard payment networks.

(1) Noble, Elisabeth. (N.D.). BigTech and Financial Services: Mapping the Fault Lines. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3906552

(2) Zamil, Raihan; Lawson, Aidan (2022). Gatekeeping the gatekeepers: when big techs and fintechs own banks – benefits, risks and policy options. Financial Stability Institute (of BIS). <https://www.bis.org/fsi/publ/insights39.pdf>.

Another contactless payment technology for mobile devices is based on printed or displayed QR codes. It requires a camera to scan QR codes, but neither an NFC chip in the smartphone, which is often lacking in low-cost devices used by poorer people, nor an NFC-enabled POS terminal. Even micro-enterprises can accept cashless payments by using just a smartphone. The use of QR codes for payments has become the most popular method for cashless payments in China and is rapidly expanding throughout Southeast Asia. Google has added more convenience and improved security to this concept in India, where it has introduced Audio QR: Mobile devices communicate through inaudible acoustic (ultrasound) signals. Audio QR can be installed on Android and iOS phones. The devices are linked to the bank accounts of the user and the merchant to facilitate a direct transfer of money. The system does not build upon the Visa or Mastercard network but on a real-time fund transfer system and the 'Unified Payments Interface' (UPI) for managing money transfers between bank accounts, both initiated by the central bank of India. This saves merchants the payment card processing fees.

While the technologies of Apple and Google are significant contributions to the evolution of payment methods, Facebook did strive for a more revolutionary change: the creation of a new payment system based on cryptocurrency. The project Libra, renamed Diem, aimed to issue a stablecoin by a consortium of financial institutions under Facebook's leadership⁽¹⁾. However, the project faced massive political opposition and was closed in 2022⁽²⁾.

Convenience: Apple's and Google's contactless mobile payment technologies are integral to wallets that can store, in addition to payment cards, tickets, loyalty cards, and ID cards (recognised by state authorities in some jurisdictions). The wallets are at the core of Apple Pay and Google Pay, facilitating convenient and secure online and in-store payments. Online merchants can add a button like "Pay by X-Pay" to their website, and in physical stores, mobile devices can be used for contactless payments. Customers do not give merchants their 'true' payment card details (that are safely stored on an Apple device or Google server). This substantially reduces the risk of card fraud to the benefit of consumers and merchants. Amazon Pay provides similar payment convenience for online purchases on third-party websites. Facebook Pay,

(1) Robinson, Duncan, and Hannah Kuchler. (2014). Facebook Targets Financial Services. Financial Times www.ft.com/content/0e0ef050-c16a-11e3-97b2-00144feabdc

(2) Murphy, Hannah, et al. (2022). Facebook Libra: The Inside Story of How the Company's Cryptocurrency Dream Died." Financial Times, www.ft.com/content/a88fb591-72d5-4b6b-bb5d-223adfb893f3; Rudegeair, Peter, and Liz Hoffman. (2022). Facebook's Cryptocurrency Venture to Wind Down, Sell Assets. Wall Street Journal. www.wsj.com/articles/facebooks-cryptocurrency-venture-to-wind-down-sell-assets-11643248799.

recently renamed Meta Pay, is more limited in scope. It is only a payment option for items advertised on Facebook and Instagram. It may become more relevant in the future digital world of the 'Metaverse' that Meta is trying to create.

As another convenience feature, BigTechs provide social payment options: as a built-in feature of Facebook and as a component of the Apple Wallet and Google Wallet (or Google Pay in some jurisdictions). Amazon cooperates with the social payment app Venmo which is accepted in the US as one of the payment methods for purchases from Amazon.

Transaction fees: Payment service providers (PSPs) charge fees or take cuts for their services. Amazon Pay charges transaction-based merchants fees, which comprise a processing component of 2.9% of the transaction volume and an authorisation component of USD 0.30 per transaction⁽¹⁾. This is in line with fees charged by PayPal,⁽²⁾ the global market leader for online payments, or Stripe,⁽³⁾ an online payment processing platform for internet businesses of all sizes. Apple Pay does not charge fees from consumers or merchants. Instead, it takes a cut of 0.15% of the monthly transaction volume of the credit card issuing bank as compensation for its security services⁽⁴⁾. This percentage is in line with the cut that Visa and Mastercard take to use their credit card networks. The cuts reduce the net interchange fees of the card issuer. Fees or cuts should allow at least cost recovery and maybe even net revenues from payment services for Amazon and Apple.

Google took a different route to monetise its payment services and technology. Google Pay is free for consumers and merchants.⁽⁵⁾ Revenues from Google's advertising business must cover the costs of the PSP activities. This core business has already sustained other free services such as Google Search or Google Maps. Users pay for these services not with money but with data that Google can monetise in its core business: personalised or granularly targeted advertisements. Valuable data are payment histories generated by the use of Google Pay. The sale of individual payment histories is widely impossible as

(1) Data for domestic web and mobile solutions in the United States as of 02 February 2023; <https://pay.amazon.com/help/201212280>.

(2) <https://www.paypal.com/us/webapps/mpp/merchant-fees>.

(3) <https://stripe.com/pricing>.

(4) Ram, Prashant. (2021). How Apple Pay Works Under the Hood? - Codeburst. Medium. codeburst.io/how-does-apple-pay-actually-work-f52f7d9348b7; Peek, Sean. (2023). How Your Business Can Accept Apple Pay. Business News Daily. www.businessnewsdaily.com/15906-how-to-accept-apple-pay.html; Thompson, Julie. (2023). Credit Card Processing Costs and Fees Explained. Business News Daily. www.businessnewsdaily.com/16583-credit-card-processing-costs-fees-explained.html.

(5) Initially, Google charged fees for Google Pay but has since stopped doing so.

it would violate data protection and privacy laws in most countries. However, Google can benefit from payment histories in an anonymised and aggregated format, e.g. for differentiated consumer typologies based on information merged from various sources such as Google Search, Google Pay, Google Maps, and Google Shopping. The sale of anonymous cluster data of consumers with specific interests and habits is permissible in many jurisdictions.

Implications for Banks: BigTechs' activities in payment services are no direct challenge for banks because all X-Pays require payment cards issued by a bank, and payments are channelled through the existing credit card networks to the acquiring banks in Western countries. However, the spread of contactless in-store mobile payments will change the payments landscape in two directions: the share of cash payments in retail stores will decrease, and mobile devices will replace plastic cards.

From the banks' perspective, reducing cash payments may be welcome because the handling of cash is costly and hardly profitable. If contactless payment by mobile devices becomes ubiquitous, wallet operators, card issuers, and payment network infrastructure operators will win. In contrast, providers of cash-related devices and services (such as ATMs, cash registers, money transports, vaults) will face revenue compressions. Replacing plastic cards with mobile devices will not eliminate credit and debit cards but only change their materiality from plastic to digital. They are still needed as the source of the funds to be transferred, and the frequency of their use will increase. However, issuing banks may face a compression of their revenues from interchange fees due to cuts taken by Apple Pay. This could be compensated partially by lower fraud and fraud prevention costs due to the additional security layer provided by Apple Pay.

4.2. Consumer Finance

The activities of two BigTechs in financial services – Amazon and Apple – go beyond payments and include different forms of consumer finance. The two main instruments are credit cards and deferred payment facilities.

Credit Cards: Amazon and Google have become competitors in the US market for credit cards by launching cards with special benefits for consumers who regularly buy from their websites or stores. Key features of the Amazon Prime Rewards Visa Card,⁽¹⁾ issued in the US by JPMorgan Chase,⁽²⁾ are a 5%

(1) For full details see <https://www.amazon.com/Amazon-Prime-Rewards-Visa-Signature-Card/dp/BT00LN946S>.

(2) Similar cards have been issued in Germany and the UK, but in both countries, the contracts with the card issuers have been discontinued in 2021 and 2022, and Amazon cards for consumers are currently not available.

back in reward points for Amazon Prime members on purchases from Amazon (online and in-store) and 1% back for other purchases (2% for restaurants and gas stations). The reward points can be used to pay Amazon bills or redeemed in cash. As an alternative to the 5% back, consumers can split the payment of the Amazon bill into 6 to 18 equal monthly amounts at 0% annual percentage rate (APR). The 5% rebate is a strong incentive for consumers to buy from the 'Everything Store' (Stone) and use the Amazon credit card for Amazon purchases. For purchases from other merchants, consumers could find reward or cash back credit cards with higher back rates, e.g. 1.5%, even from the same issuing bank.⁽¹⁾ This suggests that Amazon's main objective is to strengthen its competitive position in commerce and not to penetrate the credit card industry. Since Amazon does not charge an annual fee for its card, a strategy for optimising consumer benefits could be using the Amazon card for purchases from Amazon and a reward card with a general 1.5% cash back for all other transactions. This will shift transaction volumes towards the issuing bank of the Amazon credit card, but most likely with reduced revenues per credit card transaction because Amazon will ask the bank to cover, at least partially, the high cash backs for purchases from Amazon.

Apple replaced its Barclaycard Visa with Apple Rewards in the US in 2020 with the Apple Card issued by Goldman Sachs under its retail banking brand Marcus.⁽²⁾ The Apple Card comes with an innovative card design (no number on card, titanium instead of plastic, laser-etched name) but less outstanding terms. The benefits include daily cash backs of 3% for purchases of Apple products, 2% for payments by iPhone or Apple Watch (3% at selected merchants), and 1% for swiping the card.⁽³⁾ Apple also offers for featured Apple products (purchased from Apple online or in-store) a split of the bill over up to 24 months at 0% APR (in addition to the 3% cash back). The Apple Card appeals to loyal Apple customers, to people who plan to buy Apple devices, and to consumers who pay with an iPhone or Apple Watch wherever possible. In countries where large numbers of merchants accept and customers use mobile Apple devices at POS checkout – as in the US – the Apple Card with a 2% cash back can become a more serious challenger than Amazon's credit card with its 1% back for leading cash back cards with back rates of 1.5%. While the promotional effect of a 3% rebate for Apple's sales volume may be small, the 2% incentive for the use of devices already owned

(1) See <https://creditcards.chase.com/>.

(2) Plans to introduce the Apple Card in other countries have not yet been realised.

(3) For full details see <https://www.apple.com/apple-card/>.

by consumers can have a major impact. It generates revenues for Apple from the cuts taken from the interchange fees that are not directly dependent on the sales of new hardware devices. Even if the sales of new devices decrease, the more frequent use of existing devices could generate growing revenues for Apple. There are reasons to assume that the issuing bank bears (most of) the 2% cash back as a result of tough terms Goldman Sachs had to accept to make its troubled Marcus brand the issuer of the Apple Card (such as investments in the engineering of the card, bounties for each cardholder, high transaction fees, the waiving of late fees, and abstaining from selling cardholder data to advertisers) ⁽¹⁾. In summary, it seems that for Apple, the credit card is less a tool for sales promotion (as it is for Amazon) but an additional source of stable revenues from financial services.

Consumer Loans: Instead of maxing out a credit card, consumers can apply for a loan from a retail bank or a non-bank provider of unsecured consumer loans. Consumer loans are interest-bearing and reported to credit bureaus, but the interest rates are usually lower than those of credit cards. Amazon arranges consumer loans in two of its three largest markets: by non-bank provider Affirm in the US and Instalments by Barclays in the UK; there is no comparable scheme in Germany. Apple had discussions with Goldman Sachs about a consumer loan programme in the US for longer-term instalments. Its current status and future are unclear⁽²⁾. In the UK, Apple refers consumers to Barclays and PayPal Credit. Neither Amazon nor Apple shows a strong interest in this financial market segment.

Buy Now, Pay Later (BNPL): Buy now, pay later is an old merchant practice. In the traditional deferred payment scheme, the merchant takes the risk of an unsecured consumer loan. The digitised version of BNPL was introduced as an innovation by FinTechs in the 2010s, and BigTechs have contributed significantly to the spread of this payment method in the 2020s. With BNPL, the consumer's cash flow is the same as in a merchant's deferred payment sale, except that instalments must be paid not to the merchant but to the FinTech. The FinTech collects the instalments from the buyer, pays the seller immediately, and (usually) takes the credit risk. Usually, the FinTech has a larger lending capacity than the merchant. The FinTech runs an algorithmic

(1) Mickle, Tripp, and Liz Hoffman. (2018) Goldman Sachs, Apple Team up on New Credit Card. Wall Street Journal. www.wsj.com/articles/goldman-sachs-apple-team-up-on-new-credit-card-1525966214; Hoffman, Liz, and Peter Rudegeair. (2019). The Apple Card Is Here, With Cash Back and Privacy Promises. Wall Street Journal, www.wsj.com/articles/the-apple-card-is-here-with-cash-back-and-privacy-promises-11553541513.

(2) Shevlin, Ron. (2021). Google Kills the Google Plex: It Could Have Been a Digital Checking Account Killer App. Forbes. www.forbes.com/sites/ronshevlin/2021/10/01/google-kills-the-google-plex-it-could-have-been-a-digital-checking-account-killer-app.

credit check before entering into a BNPL contract. The merchant has to pay a fee for the services of the BNPL provider. It has become common practice to charge the buyer no interest in BNPL schemes if all payments are made on time. Late payment fees or deferred interest may be charged if payments are not on time⁽¹⁾.

Amazon introduced BNPL in 2015 with the Amazon Store Card, a credit card issued by Synchrony Bank and usable only for purchases of Amazon products. Its benefit is either reward points or payment in equal monthly amounts with no interest over 6, 12 or 24 months, depending on products and purchase value. A similar BNPL option (Equal Monthly Payments, also termed Equal Pay) for purchases from Amazon is embedded in the Amazon Prime Rewards Visa Card with interest-free equal monthly payments over 6, 12 or 18 months. Equal Pay is a tool for selective sales promotion at the discretion of Amazon because Amazon determines the items that are eligible for Equal Pay during a specified period under particular purchase requirements, which are disclosed only during checkout. Amazon offers a broader BNPL for all purchases from its marketplace in the US since 2021 through a specialised provider, Affirm. Affirm users, who pass a soft eligibility check not affecting their credit score, see personalised deferred payment options at the checkout, including the interest-free BNPL option Pay in 4, meaning four interest-free payments every two weeks. The first payment is immediately due, the last one after six weeks. Like Amazon, Apple started BNPL options only for the purchase of featured Apple products as a benefit of the Barclaycard Visa with Apple Rewards. Its successor, the Apple Card, retains this. Both credit cards are for general use, but BNPL is restricted to featured Apple products. In 2021, rumours spread that Apple and Goldman Sachs plan to launch a BNPL instalment scheme that should not be tied to the Apple Card but integrated into Apple Pay⁽²⁾. In mid-2022, it was announced that the new payment method Apple Pay Later will allow eligible consumers who shop with Apple Pay to split purchases into four payments every two weeks with no interest or fees⁽³⁾. The first payment must be made immediately, and the last after six weeks. It was also communicated that the funding would not come from Goldman Sachs but from a new Apple

(1) Firestone, Ezra. (2022). What Is Buy Now, Pay Later (BNPL)? How BNPL Works. Shopify. www.shopify.com/blog/buy-now-pay-later; Tuazon, Angelle. (2023). Buy Now, Pay Later Statistics and User Habits. Market Research Chicago | Market Research Companies | C+R. www.cresearch.com/blog/buy-now-pay-later-statistics.

(2) Gurman, Mark, and Sridhar Natarajan. (2021). Apple, Goldman Plan 'Buy Now, Pay Later' Service to Rival Affirm. Bloomberg. www.bloomberg.com/news/articles/2021-07-13/apple-goldman-plan-buy-now-pay-later-service-to-rival-paypal.

(3) Andriotis, AnnaMaria. (2022). Apple Goes Deeper Into Finance With Buy Now, Pay Later Offering. Wall Street Journal. www.wsj.com/articles/apple-goes-deeper-into-finance-with-buy-now-pay-later-offering-11654939801

subsidiary, Apple Financing LLC. Media understood this to mean that Apple provides the funding from its own resources⁽¹⁾. It was announced that Apple Pay Later would come with the release of iOS 16 in 2022, but for unexplained reasons, the rollout of Apple Pay Later is delayed, probably until spring 2023⁽²⁾.

Apple Pay Later could threaten specialised BNPL providers such as Klarna, Affirm or Afterpay⁽³⁾. That Apple will gain market shares at their expense is not a big issue for retail banks that mostly do not offer BNPL facilities. However, it could become a serious concern if Apple's entry improves the public reputation and general appeal of BNPL loans further and induces more retail bank customers who currently manage their cash flows through personal loans, overdraft facilities, credit cards and other short-term financing instruments provided by banks to switch to BNPL.

Starting from zero, BNPL reached a share of 3% of the global e-commerce payments (USD 120bn) in 2021 (Worldpay). However, several payment methods do not have a credit element (such as cash on delivery, bank transfers, and debit cards), and even credit card bills are often fully paid when due, meaning that these credit cards are primarily used for convenience and security and not to enhance the purchasing power temporarily. Therefore, it is appropriate to relate BNPL's share not to all payment methods but only to those with a credit dimension. The share of BNPL is expected to increase to 5% by 2025, while the share of credit cards is expected to decrease from 21% to 19%. The underlying payment source of wallets, whose share is expected to increase from 49% to 53%, can be credit or debit cards, and only credit card-based wallets should be considered (but no breakdown is given in the Worldpay report). In conclusion, BNPL is a more severe challenge to the credit card industry than the current 3% share in total online payments suggests, especially when Apple Pay Later makes BNPL available in stores.

For long, neither conventional nor Islamic banks have paid much attention

(1) Bradshaw et al. (2022). Apple to Offer Buy Now, Pay Later Credit in Challenge to Klarna and Affirm. Financial Times. www.ft.com/content/fe7a0411-13f2-4d5e-a61a-af4279012cf3

(2) Gurman, Mark. (2022). One Week With the iPhone 14 Pro Max - Apple's Not-So-Dynamic Island. Bloomberg. www.bloomberg.com/news/newsletters/2022-09-25/should-i-buy-the-iphone-14-pro-max-if-i-have-an-iphone-13-wait-until-iphone-15

(3) Gurman, Mark, and Sridhar Natarajan. (2021). Apple, Goldman Plan 'Buy Now, Pay Later' Service to Rival Affirm. Bloomberg. www.bloomberg.com/news/articles/2021-07-13/apple-goldman-plan-buy-now-pay-later-service-to-rival-paypal; Bradshaw, Tim, Siddharth Venkataramakrishnan, and Imani Moise. (2022) Apple to Offer Buy Now, Pay Later Credit in Challenge to Klarna and Affirm. Financial Times. www.ft.com/content/fe7a0411-13f2-4d5e-a61a-af4279012cf3.

to this payment method, but this may change soon.⁽¹⁾ For consumers, BNPL replaces short-term interest-bearing credit card financing, overdraft facilities or unsecured consumer loans. Providers of these types of financing will lose revenues, while BNPL providers will gain transaction fees from merchants and (sometimes) late payment fees from consumers. This will be a problem in particular for credit card-issuing banks. Many BNPL schemes extend the payment period up to three months (or more), while credit card payments are typically due every month. Interest is charged on the remaining amount if a credit card balance is not paid in full. Therefore, consumers who want to use their credit cards to spread the payment over the same period that BNPL offers face significant interest charges. BNPL is clearly the cheaper alternative – the more, the longer BNPL stretches the payment.

Banks may respond to a loss of credit card business by offering BNPL facilities themselves. However, interest rates on outstanding credit card balances, overdrafts and loans charged to consumers are much higher (far above 10%) than fees for BNPL facilities charged to merchants (well below 10%). Thus, BNPL fees cannot compensate for revenue losses in the credit card business when BNPL and card loans have similar cash flow structures.

Since initial losses of card loans were small, banks did not react while BNPL start-ups grew, refined their technologies and reached critical scales. During the pandemic, BNPL became a trendy payment method that recorded the highest growth rates, and further growth is projected for the years to come. This translates into more revenue losses for card-issuing retail banks unless they react. Still, banks are reluctant to become providers of BNPL facilities for several reasons, such as high operating costs, small margins (although partnering and infrastructure programs of Visa and Mastercard may help), lack of adequate technology, algorithms and data for real-time credit checks and risk assessments (although cloud computing and cooperation with FinTechs and data-rich BigTechs may help), stricter KYC and AML/CFT regulations, and high risk weights for unsecured loans with onerous capital and liquidity requirements (although outsourcing to a subsidiary or the acquisition of a FinTech may help). BigTechs did not cause these challenges for credit card issuing conventional and Islamic retail banks in the first instance. FinTechs were the pioneers in this segment, and BigTechs have only accelerated a trend that had already taken off.

(1) Gani, Aisha S. and Abhinav Ramnarayan. (2022). Buy-Now-Pay-Later Tech Pioneers Squeezed as Big Banks Muscle In. Bloomberg. <https://www.bloomberg.com/news/articles/2022-08-24/buy-now-pay-later-tech-pioneers-squeezed-as-big-banks-muscle-in>.

4.3. Business Financing

Only Amazon is active in business financing. Its success is, to a great extent, due to nearly 2 million third-party sellers contributing 22% of its revenues in 2021 (Amazon Small Business Empowerment Report). Most of these sellers are small and medium-sized businesses (SMBs) for whom Amazon has launched various support programs to start, grow, and optimise their businesses (Hickson). However, SMBs can participate in these programmes by invitation only. Most SMBs have difficulties getting bank loans because they lack an elaborate business plan, tax history, credit score, and collateral. These elements are less important for Amazon because it has detailed information about a merchant's activities on the Amazon platform (products, sales histories, inventory, consumer reviews, cash flows, etc.). To meet the working capital needs of invited SMBs, Amazon has introduced Amazon Lending in cooperation with several banks and specialised SMB lenders in the US (Sweeny). All loans must be used for revenue-generating measures such as inventory management, product-line expansion or product promotion. Amazon Lending is a programme to strengthen promising Amazon Marketplace sellers. It does not compete with banks in business financing but fills gaps in SMB financing in cooperation with retail banks and specialised SMB lenders.

4.4. Deposits

The deposit business is highly regulated and has not been penetrated by BigTechs. However, two (unrealised) initiatives should be noticed. Google had gathered a diverse group of more than ten banks of different sizes with diverse business models to participate in the so-called Plex checking and savings accounts venture as a component of Google Pay that was to be revamped into an all-encompassing money app in 2020⁽¹⁾. However, Google terminated the project in 2021⁽²⁾. A commentator (Shelvin, "Google Kills the Google Plex: It Could Have Been a Digital Checking Account Killer App") noted that this was done despite a strong interest of millennials and Generation Z (i.e. consumers aged about 16 to 40 years) in Google Plex features, a high level of trust in Google to handle finances, and the readiness of various types of banks to participate.

(1) Bary, Emily. (2020). Google Will Let Users Get Digital Bank Accounts Through Its Mobile Wallet. MarketWatch. www.marketwatch.com/story/google-will-let-users-get-digital-bank-accounts-through-its-mobile-wallet-11605741746; Cross, Miriam, and Penny Crosman. (2020) Google Checking Accounts: Why Banks Want In. American Banker. www.americanbanker.com/news/google-checking-accounts-why-banks-want-in; Surane, Jennifer, and Mark Bergen. (2020). Google to Offer Checking Accounts With Banks in Pay App Revamp." Bloomberg. www.bloomberg.com/news/articles/2020-11-18/google-to-offer-checking-accounts-with-banks-in-pay-app-revamp

(2) Rudegeair, Peter, et al. (2021). Google Is Scrapping Its Plan to Offer Bank Accounts to Users. Wall Street Journal. www.wsj.com/articles/google-is-scrapping-its-plan-to-offer-bank-accounts-to-users-11633104001

Apple has cooperated with Goldman Sachs to launch a high-yield savings account for Apple Card holders⁽¹⁾. High-yield savings accounts are already available to customers of the Marcus brand of Goldman Sachs. The perk for Apple Card users is that their daily cashback is automatically deposited into a high-yield savings account which can be managed in the Apple Wallet. Apart from giving its name for marketing purposes, Apple's involvement in this project is minimal. As it seemingly serves primarily the interests of Goldman Sachs, it may be considered a kind of compensation for the onerous terms Goldman Sachs had to accept to become the issuer of the Apple Card.

4.5. Overall Impact

To summarise the overall impact of BigTechs on the conventional and Islamic banking industry: The screening of BigTechs' financial instruments and projects did not provide strong evidence that they follow a strategy to establish a strong position in the finance industry. Their projects are selective and in support of their core businesses. An exception may be Apple. The activities in payments and consumer finance supplement Apple's current core business and generate revenues in a new vertical.

5. Perspectives for Islamic Banks

While the conclusions on the impact of BigTech's activities in payments and consumer finance apply to banks of all types, some particular perspectives for Islamic banks can be added, related to challenges of a Sharī'ah compliant structuring of BNPL facilities, the possibly unintended but effective support of Islamic BNPL providers by a subsidiary of a BigTech, and the opportunities for a revitalisation of communication channels between Islamic banks and Muslim consumers through Muslim lifestyle and superapps.

5.1. Sharī'ah Issues of BNPL Structures

BigTechs popularise BNPL, which is particularly appealing to Muslims who aim to expand their purchasing power temporarily without interest. BNPL looks, at first sights, like a murābaḥah sale with deferred payment. No consumer loan is involved. Nevertheless, some Sharī'ah compliance issues may arise. Suppose a person wants to purchase a ḥalāl product and enters into a murābaḥah contract with a deferred payment clause that meets all formal Sharī'ah requirements. The contract includes a payment schedule.

(1) Franklin, Joshua, and Patrick McGee. (2022). Apple Teams up With Goldman Sachs on High-yield Savings Accounts. Financial Times. www.ft.com/content/f956de93-e505-4c84-a1ab-2bd23c041004

When it is signed, a first instalment is paid, and the ownership of the item is transferred from the seller to the buyer. This seems to be a valid contract, even if the merchant's business is financed by interest-bearing loans. Otherwise, Muslims should stop purchasing from most Western retail shops and online marketplaces.

But suppose a clause in the sales contract obliges the buyer to make all payments not to the seller but to a third party due to a receivables purchase agreement, which is the basis for an interest-bearing loan by the third party to the seller. Would that make the sales contract Shari'ah non-compliant and invalid? If not, because the seller and not the buyer receives the interest-bearing loan, Muslims could use conventionally structured BNPL options. If the clause invalidates the contract, the seller and the third party could find an arrangement by which the buyer continues to pay instalments to the seller and does not come into contact with the third party. Would that have a consequence for the Shari'ah compliance or validity of the contract? It seems that, once these issues are cleared, legal laypersons should get clear guidance on how to recognise Shari'ah non-compliant BNPL structures. That a FinTech labels itself Shari'ah compliant is probably not enough. To avoid any Shari'ah non-compliance risks, the funding of the merchant should be done through a Shari'ah compliant contract.

Several FinTechs have received compliance certificates for Shari'ah compliant BNPL schemes from recognised Shari'ah advisories, for example, PayHalal (Malaysia), Split (Malaysia), myIOU (Malaysia), ShopeePay (Indonesia, Malaysia), Tabby (Saudi Arabia, UAE, Bahrain, Kuwait), Tamara (Saudi Arabia, UAE, Kuwait), and LDUN (Saudi Arabia). The problem is that none of these Islamic BNPL providers clearly describes the Shari'ah contracts that underly its business model. As with the conceptualisation of Shari'ah compliant credit cards, different structures are conceivable. Since credit cards are interest-free buy-now-pay-later schemes, BNPL might be considered a kind of Shari'ah compliant credit card that does not provide a general line of credit but only credit for a specified deal. Malaysian BNPL providers suggest this view by mentioning on their web pages the Islamic contracts of qard and ujah that are at the core of a particular type of Shari'ah compliant credit cards popular in Malaysia⁽¹⁾. However, the exact structure of the BNPL product is not described. Thus, some questions about Shari'ah compliance remain, resulting from conceptual differences between a credit card and BNPL.

(1) Bank Negara Malaysia. (2019). Credit Card-i. www.bnm.gov.my/documents/20124/938039/PD+Credit+Card-i.pdf.

The transactions between the consumer, the merchant (who does not offer a deferred payment option), and the BNPL provider could be as follows: The consumer applies to the BNPL provider for an interest-free loan to be paid back in instalments for purchasing a specific item from the merchant. The BNPL provider approves the application after a credit check. The consumer buys the item, and the merchant receives the cash price (either from the BNPL provider or the consumer). The consumer pays back the qard received from the BNPL provider in instalments. The BNPL provider receives a fixed fee (ujrah) for its bundled services, such as (but not limited to) access to a payment network, the credit check of the consumer, and the provision of liquidity for the immediate payment of the bill. The difference between a credit card and a BNPL scheme is who pays the ujah. In a credit card scheme, the consumer, as the cardholder, pays the ujah. In a BNPL scheme, the merchant pays the ujah because the BNPL shall be cost-free for the consumer. Such an approach raises some Shari'ah issues.

The most important service the BNPL provider renders to the merchant is the funding of the purchase – in other words: the provision of liquidity for a deferred payment sale and the coverage of a credit risk that the merchant had to take if his own resources were used for funding. The beneficiary (= the merchant) pays a fee for these financial services that generate a cash flow that is the same as what would result from the discounting of a deferred payment sales invoice (which is not Shari'ah compliant in a conventional structuring). Another issue is the conditionality of the qard that has to be used to pay for a specific purchase which looks like an impermissible stipulation of a contract of sale in a contract of qard. It is unclear whether such points were considered relevant Shari'ah issues and, if so, how they have been addressed. The issues may be somewhat different in a model⁽¹⁾ that combines murabahah and ujah but does not mention a qard element. However, this model may also struggle to justify the amount of ujah that should be a fixed service fee but must cover the costs of the provided liquidity, thus being more dependent on the qard amount than the cost of non-financial services. In other words, how can it be justified that the ujah is higher for larger amounts, although operations costs are the same?

If the ujah structure raises concerns, other models could be used, for example, a combination of two murabahah sales (one with a deferred payment clause)

(1) Lalwani, Rahul, and Saadat Sabur. (2021). Islamic Finance and BNPL - the Opportunity Ahead. www.capco.com/Intelligence/Capco-Intelligence/Islamic-Finance-and-BNPL

and promises to purchase and sell (wa'd). A consumer selects an item that a merchant sells in its store for \$100. The consumer approaches a BNPL provider for interest-free financing of this item. After a positive credit check, the BNPL provider promises to buy the item from the merchant and the consumer promises to buy it for \$100 on deferred payment terms from the BNPL provider. The merchant sells the item to B for \$90 and is paid immediately. The BNPL provider sells the item to the customer for \$100, payable in 4 monthly instalments of \$25, and the merchant delivers (as an agent of the BNPL provider) the item to the customer. The \$10 discount by the merchant is the revenue of the BNPL provider. The merchant grants the discount to compensate the BNPL provider for operating expenses (credit check, payments handling), liquidity provision and assumption of the credit risk. The structure looks procedurally a bit cumbersome, but it should not raise serious Shari'ah issues and could be executed electronically in near real-time in both online and physical shops.

Another structure could be built around a Shari'ah compliant factoring model (that incorporates elements of a commodity murābahah). The merchant provides consumers with a cost-free deferred payment option and sells the resulting invoice at a discount to the BNPL facilitator – not for cash but for an exchange-traded commodity, which the merchant can immediately sell for cash.⁽¹⁾ Shari'ah compliant BNPL facilities can be structured in different ways. Their development and seamless integration as a payment method in online and physical shops would benefit substantially from a combination of the technical expertise of FinTechs with the Shari'ah competence and customer base of Islamic banks. In all these structures (as in conventional BNPL models), the merchant pays for the BNPL facility, not the consumer. In a blog, an Islamic investment and crowdfunding FinTech reproduces the view of a Shari'ah scholar who suggests as a Shari'ah compliant BNPL a deferred payment sale with a markup paid by the consumer.⁽²⁾ Since this scheme is interest-free but not cost-free for the consumer, it should not be considered a BNPL facility.

5.2. BigTech in Support of Islamic Finance?

One BigTech initiative in the MENA region deserves special attention because

(1) Malaysian banks started in recent years to switch from their disputed Bay' Al-Dayn practices to this Bay' Al-Dayn Bi As-Sila' model, also known as factoring-i.

(2) <https://ethis.co/blog/bnpl-shariah-compliant/>.

it may support Islamic financial institutions in general and Islamic FinTechs in particular to ensure the Sharī'ah compliance of the institution, which requires not only a proper legal structuring of its products but also that these products are not used for ḥarām purposes.

Amazon has established Amazon Payment Services (APS)⁽¹⁾ for the MENA region. It is a payment gateway that enables businesses of various industries to accept all kinds of payments through mobile apps or online. Currently, it operates in five of the six GCC countries (not in Bahrain) plus Egypt, Jordan and Lebanon. Not all of APS's services are available in all countries. The payment platform can integrate local payment methods such as Mada (Saudi Arabia), Meeza (Egypt) or NAPS (Qatar), and the list of participating banks for which APS acts as an acquirer includes several Islamic banks. Businesses can offer customers an Installments service (in Egypt, Saudi Arabia and the UAE) for splitting online or in-store bills into several convenient payments. APS recommends participating banks to charge 0% interest for the instalments, i.e. a BNPL approach, because 0% interest plans have significantly higher conversion rates than interest-bearing plans, and customers refrain from interest-bearing plans due to Sharī'ah compliance concerns. APS does not provide Installments by itself but displays at checkout the terms for Installments of participating banks – including some Islamic banks. APS charges fees for the use of its payment platform. Fees for Installemnts must be agreed upon between the participating bank and the merchant who offer this facility.

APS refers to legal and regulatory compliance reasons for a relatively long list of businesses with which it cannot work,⁽²⁾ including tobacco, arms and ammunition, liquor and alcohol, pornography and adult entertainment, gambling and gaming software. This list seems to cover all businesses not compliant with Sharī'ah (but is more comprehensive than that by including, for example, web hosting, software, and jewellery). Still, APS cannot claim to be Sharī'ah compliant because it serves conventional and Islamic banks, and one of its services – Installments – can involve interest if provided by a conventional bank. Still, APS helps to ensure the Sharī'ah compliance of BNPL providers at the consumers' end. Participating Islamic banks are interested in a complete list of Sharī'ah non-compliant businesses that APS does not onboard, and the Islamic banks' Sharī'ah bodies will most likely have checked the accuracy of the list. Hence, the payment gateway's procedure for

(1) <https://paymentservices.amazon.com>.

(2) <https://paymentservices.amazon.com/support-center/faq?kw=general>

onboarding merchants ensures (or at least helps significantly to ensure) that BNPL is used only for Sharī'ah compliant purposes. It is unclear whether APS intended this or not.

5.3. Muslim Lifestyle and Superapps

Muslim countries have younger populations than Western countries. The economic weight of Millennials (people now in their late 20s up to their early 40s) will decrease, and the economic importance of Generation Z (now in their 10s and 20s) will increase more rapidly in the Muslim world than in the West. Generation Z spends far more time online than previous generations. Digital identities matter, and social interaction and shopping happen through social media⁽¹⁾. These young people prefer social media or digital lifestyle apps with integrated, seamless payment facilities for their regular financial transactions to separate online banking apps (used primarily by older generations).

BigTechs support the switching of consumers from individual banking apps to payment solutions integrated into social media and lifestyle apps because that supports their core business in commerce and advertisement. X-Pay checkouts in social media or lifestyle apps capture information about the context of payments. BigTechs also know search histories, communication habits, entertainment preferences, etc. They benefit from a trend towards embedded finance, where financial services are integrated into a platform serving non-financial purposes such as social communication, knowledge dissemination, media consumption, shopping, or gaming. Integrating financial services into a platform's user experience is at the core of embedded finance, which has generated revenues of USD 20bn in the US in 2021, according to estimates by McKinsey⁽²⁾.

An example of how an app with embedded finance can look when developed by a financial institution that started as a BNPL-providing FinTech that targets younger consumers (in their 20s and 30s) is the Klarna app. It looks like a shopping app. On top is a search field 'Search & Shop anywhere', and the buttons below comprise 'Shop', 'In-store', 'Deals', 'Saved' (items for

(1) Santora, Jacinda. (2022). 29 Statistics on Gen Z Spending Habits You Should Know in 2023. Influencer Marketing Hub. influencermarketinghub.com/gen-z-spending-habits-stats.

(2) Dresner, Andy, et al. (2022). Embedded Finance: Who Will Lead the Next Payments Revolution? McKinsey & Company. www.mckinsey.com/industries/financial-services/our-insights/embedded-finance-who-will-lead-the-next-payments-revolution

shopping), and 'Loyalty cards'. Next is a clear reminder of open bills, and below are buttons for online shopping logistics. Only then follow the buttons for the Klarna deposit card, bank account and other selected favourites. The remaining space is again about shopping. The dominant theme is shopping; financial functionalities are clearly subordinated.

A superapp goes even further than that (BPC and Fincog). It aims to become a comprehensive commerce and communication platform for various purposes that are combined and streamlined so that all are accessible through one unified user interface. Multiple mobile apps converge or merge into one superapp for convenient access to a wide range of frequently used services, including financial services. Grab is an example of a themed superapp that emerged from a FinTech start-up in a Muslim country. It started as a taxi-hailing app with payment functionalities in Malaysia and later added more means of transportation, food, grocery and package delivery, and financial services. It now operates in seven Southeast Asian countries.

Embedded finance and superapps can help Islamic banks retain customers inclined to switch and open new business perspectives. Millennials and Generation Z in Muslim countries are tech-savvy and concerned about a Muslim lifestyle. This suggests that Islamic banks could screen the ḥalāl economy and identify segments of particular interest to its current and targeted younger customers, such as beauty and healthcare, media and entertainment, food, travel, or fashion. Once a segment is identified, the bank could try to enrich existing segment-related apps, which are widely used, with embedded finance facilities. The bank could also take the initiative to create a respective lifestyle app, most likely with a FinTech partner and possibly in cooperation with an organisation genuinely interested in further developing this segment.

There are already Muslim lifestyle apps, some of which are related to the ḥalāl economy⁽¹⁾. Islamic banks can use them as a starting point or inspiration. Alternatively, Islamic banks could team up with existing general apps, add a Muslim lifestyle dimension, embed Shari'ah compliant financial functionalities, and develop the bundle in the direction of a superapp for regular use in Muslim daily life. The ḥalāl economy is large and diversified enough

(1) DinarStandard. (2022). State of the Global Islamic Economy Report 2022. Unlocking Opportunity. www.salaamgateway.com/specialcoverage/SGIE22; Latif, Haroon, and Yasir Malik. (2016). Muslim Lifestyle Apps—Gaining Share in a \$20 Billion Market. www.salaamgateway.com/story/muslim-lifestyle-appsgaining-share-in-a-20-billion-market

for several Islamic banks to pursue similar marketing strategies for different segments. Nevertheless, Islamic banks might also consider the formation of a consortium of Islamic financial institutions for joint efforts against the dominance of BigTech X-Pays, to support specialised ḥalāl businesses as an alternative to Amazon's everything store, and to create an alternative to Facebook's ad-flooded social media.

6. Conclusion

The screening of the activities of BigTechs in payments and finance did not find strong evidence that BigTechs intend to disrupt banking or use their financial strength to establish competing financial institutions. This research also confirms the finding of Chui that presently the BigTechs are 'accidental financiers' rather than 'aggressive invaders'. Overall, the activities are selective and in support of the BigTechs' respective core business in commerce, technology, advertisement, and social media. Still, BigTechs' activities in BNPL challenge retail banks and force them to react. Islamic banks may weigh losses from customers migrating from credit card loans to BNPL facilities of third parties against margin losses from a 'cannibalisation' of the credit card business by providing their own BNPL facilities. If they opt for BNPL, its Shari'ah compliant structuring may cause some procedural complexities that can be overcome by financial technologies such as smart contracts. Another issue is preventing BNPL facilities of an Islamic bank from being used for Shari'ah non-compliant purposes. Here, Islamic banks may get help from a payment gateway that acquires only businesses that are not on a negative list of prohibited businesses, including Shari'ah non-compliant items. One BigTech has established such a payment gateway for some of the countries in the MENA region. Finally, the growing purchasing power of consumers now in their late 20s and 30s will make them an essential target group for retail banks in the near future. Their mobile shopping and social media communication habits make them receptive to embedded finance and lifestyle apps. They prefer FinTechs or the X-Pays of BigTechs in an integrated shopping and finance environment and BNPL options over online banking apps and credit card financing. Islamic banks could collaborate with FinTechs to create frequently (at best: daily) used Muslim lifestyle apps or

superapps for the ḥalāl economy for which the banks provide the embedded finance. Otherwise, Islamic banks may risk interruptions of communication with this critical target group.

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