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JPMORGAN CHASE & CO.: OPEN BANKING[1]

Jashan Puniya and Robert D. Austin wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

In late 2020, observers following the open banking activities of JPMorgan Chase & Co. (JPMC) might have felt confused. On the one hand, JPMC seemed to be embracing open banking. The company had hired Sairam Rangachari in 2017 to be its global head of Open Banking, Treasury Services and head of its application programming interface (API) strategy. He launched JPMC's open banking initiative in 2018, and by mid-2019 the company had released more than two dozen APIs for its Corporate Treasury customers.[2] In September of 2020, an entire downloadable section of the JPMC website was prominently titled "The Open Banking Transformation."[3]

On the other hand, JPMC and Wells Fargo, another banking giant, were known in 2020 as leaders of the resistance to open banking.[4] At issue—the crux of open banking disputes—was whether, and how, large institutions such as JPMC would allow the consumer data housed within their computer systems to be accessed by third-party firms, many of them start-ups that wanted to use the data to provide new financial services— financial technology companies (fintechs). US law made it clear that consumers owned their own financial data, including their data housed inside bank systems. Consumers had the legal right, then, to authorize third parties to access their data residing inside bank systems. And many consumers who wanted to use leading-edge, application (app)-based financial services did just that, agreeing in writing to let fintechs access their banking data, often by sharing their bank login credentials with the fintechs. But some banks, JPMC included, wanted to set terms for permitting this kind of access and sometimes actively obstructed it.[5]

In 2015, for example, JPMC blocked access by Mint, an online financial management service owned by Intuit Inc., prohibiting Mint users from accessing their Chase bank accounts through the Mint software. This caused significant dissatisfaction among some Chase customers.[6] When JPMC's chief executive officer (CEO), Jamie Dimon, met that year with the head of the Consumer Financial Protection Bureau (CFPB), he defended the company's actions by citing cybersecurity and consumer privacy risks.[7] Mint and other fintechs dismissed such explanations; they saw the bank's actions as attempts to limit competition.[8] Indeed, some pundits suggested that the banks had good reason to worry. The swarm of agile, innovative fintechs building new services on top of the operational frameworks maintained by traditional banks put the latter at risk of becoming custodians of the industry's "dumb pipes."[9]

However, there was also evidence that concerns such as those raised by Dimon might be justified. In August of the same year, the *Wall Street Journal* revealed that data aggregation service Yodlee, Inc. (Yodlee) was selling transaction data to hedge funds looking for a trading edge.[10] Although Yodlee claimed the data was anonymized

and could not be used to identify individuals, researchers from Massachusetts Institute of Technology showed "they could unmask roughly 90 per cent of people in a data[set]."[11] Similar concerns persisted and had become heightened in 2020. "Consumers don't actually read privacy policies," argued Christina Tetreault of Consumer Reports, Inc. She cited the example of a policy at a financial institution that conveyed to the company the right to access health information from consumers' mobile phone apps. Most consumers okayed such policies, Tetreault suggested, without reading the fine print. As a result, third parties too often achieved access to consumer data that Tetreault characterized as "way outside reasonable expectations."[12]

"The consumer has already decided," countered John Pitts, an executive at the fintech Plaid Inc. (Plaid). He explained, "They have already voted with their thumbs that [the service fintechs can provide] is something they want." Others argued that uses of data criticized by consumer advocates were the key to services consumers wanted and intended to agree to. For example, Jason Gross, CEO and co-founder of Petal Card, Inc., which described itself as "a credit card company started by people who were sick of credit card companies," said his company's access to consumer data—which critics considered intrusive—allowed the company to keep better track of borrower activity, thereby allowing the company to provide credit at a lower rate than would be possible by relying on traditional credit reporting.[13]

As for cybersecurity breaches, fintechs argued that they, too, could be good at protecting a customer's data. Some pointed out that fintechs had never experienced a breach of the magnitude of the 2014 JPMC breach, in which thieves stole data on millions of customers.[14]

Clearly, open banking presented JPMC with big questions. What should its approach be to it? If consumers wanted open banking and other banks went along, it might be impossible to resist. And yet the path to open banking seemed fraught with risk. Could liability for fintech misbehaviour or mistake rebound on JPMC? Or might open banking represent new and significant opportunities for banks? In either case, how should an established bank like JPMC proceed?

THE RETAIL BANKING INDUSTRY

Retail banking (also known as consumer banking or personal banking) provided financial services to the general public, as opposed to companies or organizations. These financial services included, but were not limited to, chequing/savings accounts, mortgages, debit/credit cards, loans, automated teller machines, and retirement accounts. Banks cross-sold other financial products to their retail banking customers, providing services such as wealth management and investment advice.[15]

According to the Federal Deposit Insurance Corporation, banking generated US$233 billion[16] in net income during 2019, the industry's second most profitable year ever.[17] The industry was highly consolidated, dominated by a few key players. It was difficult for new firms to enter the market; high fixed costs and stringent regulations presented high barriers to entry.[18] Compliance with regulations and banking legalities weighed disproportionately on smaller firms, which had to dedicate proportionally greater resources towards compliance relative to large firms.[19] Switching banks entailed high switching costs, so consumers rarely did it.[20] These factors combined meant that banks had become used to not having to compete fiercely for the bulk of their customers.

Retail banks generated income through loans, a system known as fractional reserve banking. Banks stored cash deposits from clients and used the deposits to make loans. The Federal Reserve required a certain percentage of deposits to be kept on hand; such "reserve requirements" were a safety measure to ensure that requests for withdrawals would not exceed deposits at any point in time. Banks charged interest on

loans at a higher rate than the rate they paid to customers on their deposits. The differential between the two interest rates was how a bank generated income.[21] Thus, profitability in retail banks was highly subject to economic conditions; lower interest rates compressed margins.

In 2020, after years of low interest rates, business conditions had turned against banks. Annual revenue growth had slowed.[22] Banks looked to cost-cutting and innovation to maintain profit margins. One potential avenue to both was online banking—providing services through the Internet and mobile apps, which reduced the need for customers to travel to physical bank branches, and that suggested possibilities for new consumer services. While this avenue promised increased convenience and satisfaction for customers, it also placed banks in closer competition with nimbler fintech companies, who aspired to provide the same and additional services with more ease and often at lower prices.[23]

Banks cross-sold investment products, asset/wealth management services, and payment solutions to generate additional revenues, but many of these products were also prone to disruption and margin compression. With the rise of low-cost passive investments like exchange-traded funds, banks were forced to reduce fees for managing their investment funds. Fintech companies also pushed into these spaces. Robo-advisors, which provided automated, sometimes artificial intelligence (AI)-powered advice, eliminated the need for human intervention and investment advice that banks (and others) had historically provided. Common in many fintech offerings were optimized, passive strategies that were inexpensive and had low balance requirements in comparison with banking services, and that, consequently, meant fintechs could offer prices for equivalent financial services at discounts as great as 70 per cent.[24] Against this backdrop of growing competition for banks, the rise of open banking seemed likely to make the competition even more intense.

JPMORGAN CHASE & CO.

JPMC was an American financial services company offering a multitude of services in retail banking, investment banking, asset management, and wealth management. It was ranked by S&P Global as the largest bank in the United States in 2019 and the 6th largest bank in the world by total assets.[25]

Like other banks in the current unfavourable business conditions, JPMC turned to technology and innovation to maintain growth. The company had spent billions on technology in recent years.[26] It had more than 40,000 technologists working in the bank, human capital that was dedicated to programming, system engineering, app design, and other such functions. JPMC also possessed 31 data centres, 67,000 physical servers, 27,920 databases, and a global network dedicated to serving clients.[27]

JPMC had a dedicated digital group "focused on product and platform design and innovation."[28] The group worked on various initiatives, one of which was the consumer digital initiative. Members of this group worked on adding new functionalities to the company's mobile app, and redesigned the website for a more personalized and simpler user experience. JPMC had over 20 million active Chase Mobile customers, and had experienced a general shift of its customers toward online and mobile banking.[29]

THE EMERGING FINANCIAL TECHNOLOGY COMPANIES

Investments in new fintechs had been growing considerably since the 2008 financial crisis. The disaffection and reduced consumer confidence in large financial institutions that resulted from the 2008 crisis opened doors for new entrants who aimed to provide financial services at lower price points and with greater convenience. In 2015, the value of global fintech investments spiked by 75 per cent to $22.3 billion,[30] and

by 2018, annual investments had reached $31 billion.[31] From 2010 to 2015, more than $50 billion had been invested in almost 2,500 companies.[32]

The services that fintech companies provided were varied and often served specific niches as opposed to offering a full suite of solutions. Acorn, for instance, was software that rounded up a client's purchase to the nearest dollar, and then took that extra change and put it into an investment account.[33] Services such as this hardly threatened to replace banking entirely. But they did interfere with banks' efforts to cross-sell other services, such as in-house financial advisors. And the collective efforts of companies, each targeting individual niches, could, of course, threaten existing or potential bank revenue sources. The nature of the threat to banks, then, was not that they would be replaced completely, but that the influx of smaller, more nimble firms might hive off, bit by bit, a great deal of the revenue that banks wanted for themselves.

Uptake of fintech services was growing. Fintech usage was most prevalent among young, high-income customers. A 2015 EY Global Financial Services Institute report on fintech adoption stated that "one in every four respondents aged 25 to 34 has used at least two fintech products in the last six months."[34] Adoption had a clear correlation with income, growing steadily as income moved higher and reaching "44 per cent for those with incomes above $150,000."[35] These were high-value customers that incumbent banks were increasingly losing to these new entrants (see Exhibits 1, 2, 3, and 4 for data on fintech adoption).

OPEN BANKING—THE IDEA AND THE REALITY

Open banking reflected the idea that consumers would benefit if, at their discretion, they could grant third-party service providers access to their banking data. Consumers sharing their data at will with the financial services providers of their choice would increase competition in the financial services industries, which would in turn stimulate innovation and lower prices. It could also allow the creation of new value for consumers arising from both the integration of services and data aggregation from different sources.[36]

That banks should be legally obliged to turn over their customers' data to third parties when consumers authorized it seemed like a reasonable expectation to many consumers and policy makers. The data did, after all, belong to the consumer. For the banks, though, this meant they had to turn over data that would help others compete against them. Needless to say, this idea was challenging for many banks. In addition, the matter was not as simple as it seemed. Intermingled with consumer data was often other information that the banks considered proprietary, such as fee levels and the pricing of transactions or accounts.[37]

There could be little doubt that open banking represented a paradigm shift in the financial ecosystem. Prior to open banking, financial data was siloed, kept in a walled garden that belonged to incumbent banks. This privileged position shielded banks from disruptive start-ups, as the financial services of these start-ups could not be rendered without access to the clients' accounts. However, as the push for open banking continued, it became an undeniable reality for banks to reckon with.

Outside of the United States, open banking had been enacted formally in Europe, the United Kingdom, Australia, and elsewhere through regulatory regimes, with the stated intention of increasing competition in financial services in ways that would benefit consumers.[38] For example, in August 2016, the United Kingdom's Competition and Markets Authority issued a broad ruling that forced the United Kingdom's nine largest banks to share their data in a standardized form.[39] In Europe and elsewhere, this consumer information issue was framed in terms of "data portability," the idea that consumers should be able to take their data anywhere they chose, like it was personal property.[40]

In the United States, policy makers were less inclined to influence markets through regulation and tended to rely instead on competition to enact changes to benefit consumers. The move to open banking in the United States, then, was more *ad hoc* than in other countries.[41] Even so, open banking had many advocates pushing for its implementation, and banking regulations trended toward open information. The 2010 *Dodd-Frank Wall Street Reform and Consumer Protection Act* had a section on consumers' right to information, which stated that consumer transaction data should be made available in an "electronic form usable by consumers" upon request.[42] Remarks by Richard Cordray, director of the CFPB, in a 2016 CFPB hearing illustrated the increasing degree of enthusiasm for the open banking ideal in the United States:

> Impeding access to digital financial records not only blocks innovation from new entrants, it also reduces the incentives for financial institutions to innovate. Without new companies introducing consumer-friendly products or services into the market, established companies are likely to feel less pressure to compete in this manner. And authorizing access to their financial records can make it easier for consumers to shop for an alternative provider with more favorable pricing, given the consumer's usage patterns. To be clear, it is unacceptable for financial institutions to block access to consumer information as a means of gaining a competitive advantage in the marketplace.[43]

The CFPB also announced inquiries into how financial data was shared and what technological developments could be used to advance it going forward.[44]

THE PRACTICALITIES OF DATA ACCESS

The sharing of data for open banking was accomplished in two main ways—one that was in many ways problematic but did not require the co-operation of an established bank, and another that was more reliable and secure but did require the bank's co-operation.

The first way, known as "credentialed access," was more widely and colloquially called "screen scraping." In screen scraping, consumers shared usernames and passwords with third-party service providers who used these credentials for automated logins as if they were the consumer. Once the third parties had access, their automated routines read the HTML used on the bank website to reverse out sought-after consumer data, such as account balances—literally "scraping" data from the screens where the data was displayed.[45]

Screen scraping presented several potential problems. Lila Fakhraie, senior vice-president of Digital Banking at Wells Fargo, described one of these with the following analogy: "It's like giving your house key to a painter and saying 'Just paint that one wall. That's all I want' . . . and now the house painter has your key forever. They come and go as they please and take things if they want." Also, the sharing of data via screen scraping was all-or-nothing: once in, the third party had access to any information that was there and could do with it what they wanted. There was no way to provide only limited access to certain information.[46] The process was also error-prone. Changes in the layout of the bank's web page could cause screen scraping to pick up the wrong information.[47]

The sole advantage of screen scraping was that it did not require permission from the banks, nor did it require a third-party firm to reach a formal agreement with a bank. Not surprisingly, banks disapproved of the practice, largely for this exact reason. They worried, too, that the risks to consumers entailed in screen scraping might rebound on them.[48] Some banks took specific steps to thwart screen scraping, for example by slightly altering website screen layouts on a regular basis to cause third parties to pick up wrong numbers.[49] When screen scraping routines failed and were then tried again repeatedly, account lockouts could be inadvertently triggered, requiring users to unlock their bank accounts and replace and re-input

banking passwords. Such breakdowns generated hassles for customers and prevented third-party firms from delivering their services.[50]

The second and superior approach to data sharing was via APIs, which were software programs that acted as a bridge between bank and third-party systems, providing a direct connection to banking data. APIs could be designed to allow a third party access to only specific information, that is, what a customer had agreed to and nothing else (see Exhibit 5).

The only problem with APIs, from the perspective of fintechs, was that they required an agreement with and co-operation from banks. In negotiations to reach agreements with smaller fintechs, established banks had a huge leverage advantage. In effect, using APIs ceded control from fintechs to banks. In addition, getting APIs designed, built, and installed took time. Banks' timelines for developing APIs were often slower than what was ideal for start-ups.

JPMC OPEN BANKING ACTIVITIES

JPMC was on record expressing many reservations regarding the sharing of financial data with third-party service providers. In his 2015 shareholder letter, Dimon asserted that "far more information is taken than the third party needs in order to do its job"[51] and that "many third parties sell or trade information in a way customers may not understand, and the third parties, quite often, are doing it for their own economic benefit—not for the customer's benefit."[52] The letter condemned the sharing of bank login credentials to enable screen scraping, insisting that customers—not the bank—would be responsible if money was stolen from consumer accounts as a result of this kind of activity.

Fintechs vigorously rebutted these charges. Mint, Acorn, Plaid, Penny (a personal finance app), and others insisted that they did not take any more data than they needed, and that they took good care of the data consumers authorized them to access. Critics of JPMC argued that the company was using data concerns as a cover, and that the bank was more concerned with how fintechs might threaten the bank's bottom line than with customer data security and privacy.[53] A 2016 article in the *New York Times* appeared to support this argument when it quoted an unnamed JPMC official expressing as an ideal that "the bank will invent services that are good enough to keep every customer inside its firewalls."[54]

Since 2017, JPMC had pursued a strategy of resisting uncontrolled third-party access (e.g., via screen scraping), while also inviting third parties to establish individual, formal agreements with the bank.[55] For example, in the aftermath of the 2015 dispute with Mint, JPMC undertook a deal in 2017 with Intuit Inc., Mint's parent company.[56] In early 2020, JPMC told fintechs that they would have to abide by the bank's access rules and APIs or be blocked.[57] This helped the bank reach agreements with fintechs that covered 95 per cent of the customer data traffic coming into the bank.[58] Contracts that JPMC had executed on an individual basis with third parties included the following:

- A stipulation that secure access through APIs would be through the use of secure tokens rather than customer login credentials
- A clear designation of what information the third party could access
- A clear assignment of responsibility to third parties for any risks they introduced into the process
- A requirement for insurance and indemnification against losses by third parties
- A requirement that other companies the third party worked with would have to abide by JPMC security standards[59]

The JPMC approach had allowed the bank to create a service for consumers called AccountSafe, which provided a dashboard to show customers which third parties had access to which data via APIs, as well as allowing customers to adjust that access if they wished.[60]

Although these agreements seemed to have brought some order to the banking and fintech ecosystem, the fintechs were not entirely happy with such arrangements. Plaid's Pitts noted that if every major bank did its own bilateral deals with fintechs, it created the potential for more than 10,000 sets of individual agreements. Moreover, each agreement could vary in its specific terms.[61]

The Clearing House Payments Company L.L.C., a New York-based standards setting group, had published a model agreement institutions could use that was consistent with CFPB guidelines on data access, to reduce the contractual complexity that would arise from thousands of bilateral agreements. Adoption of the agreement, however, was voluntary.[62]

A non-profit group called Financial Data Exchange, which included representatives of banks and fintechs, had proposed and was developing a set of standard APIs. The idea was to replace the huge variety of APIs that corresponded to bilateral agreements with a much smaller set of APIs used for data access and sharing, industry-wide. In early 2020, FMR LLC, the parent company of Fidelity Investments, created the spinoff Akoya, a company jointly owned by Fidelity Investments, The Clearing House Payments Company L.L.C., and 11 member banks, with a mission to provide just such a set of standardized APIs.[63]

Use of the resulting standard APIs and agreements, however, remained voluntary. The banks generally opposed regulatory influence that might move the industry toward mandatory use of standardized APIs. There was one exception to banks' resistance to regulatory requirements within the banking and fintech ecosystem: the banks expressed great enthusiasm for the regulation of fintech companies—for pulling them under the CFPB's oversight.[64]

THE RISE OF FINANCIAL DATA AGGREGATORS

Financial data aggregators were a particular type of fintech player gaining greater influence in the open banking arena. Companies such as Finicity, Fiserv Inc., Mint, MX Technologies Inc., Plaid, Yodlee, and YNAB helped solve the problem many fintechs and other third-party companies faced in maintaining access to banking information across multiple financial institutions (including investment firms and other non-banks). Aggregators positioned themselves between the institutions that contained consumer information and the third parties who wanted one-stop access to it. They simplified access to consumer data for third parties by providing a single portal via which they could access consumer data, regardless of its source.[65]

Initially, aggregators had compiled their information via screen scraping. But as they acquired more and more traffic—and with that, influence and respect—they were able to conduct deals with many banks to get more direct access, via APIs.[66] In 2020, it was increasingly clear that aggregators were here to stay, destined to be a factor in open banking competition.[67]

WHAT TO DO

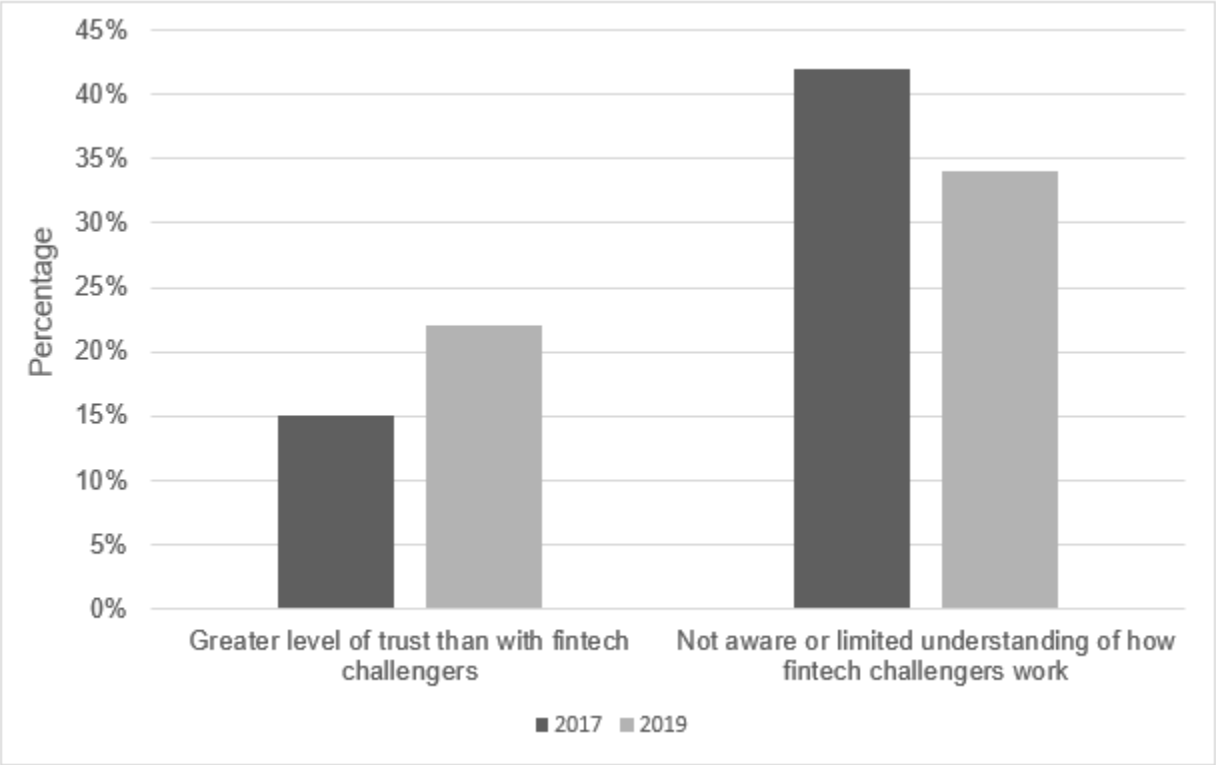
Open banking clearly represented an opportunity to provide more personalized customer experiences. But it also required a break from banking's traditionally vertically integrated model, which was inflexible in rapidly addressing consumer needs. What stance should a bank like JPMC take?

Giant tech platforms, such as Apple Inc., Amazon.com Inc., and Google, were venturing increasingly into banking-related activities. Apple Inc., for instance, had teamed up with Goldman Sachs to launch a low-interest-rate credit card ("the most successful credit card launch in history," according to Goldman Sachs' CEO).[68] As of the middle of 2019, Amazon.com Inc. had loaned more than $3 billion to merchants,[69] and its web services infrastructure powered the back offices of celebrated challenger banks and provided cutting-edge solutions in areas such as capital markets and insurance. Google had announced that it would launch digital bank accounts in 2021.[70] An extreme possible endpoint of such developments could be seen in the example of China's WeChat; WeChat had become the financial services provider preferred by many Chinese consumers mainly because of its convenient integration with the many aspects of their daily lives though a single app (the WeChat app).[71]

According to research by Professor Pinar Ozcan of Oxford University's Saïd Business School, banks had fumbled the mobile payments business to tech platforms (Apple Pay, Amazon Pay, Google Pay) by engaging in "turf wars" with the ecosystem partners they needed to co-operate with to deliver mobile payment services, such as telecommunications companies and mobile handset makers. Everyone wanted to "own" the customer, everyone wanted to be in charge, and no one could agree on security standards. To prevent something similar from happening with open banking, Ozcan suggested that banks had to get over some of their more controlling reflexes.[72] Might banks be able to counter tech company incursions into their markets by engaging in enlightened partnership? Might partnering with third parties to build open banking ecosystems be a route that banks could take to achieve a foothold in the platform economy?

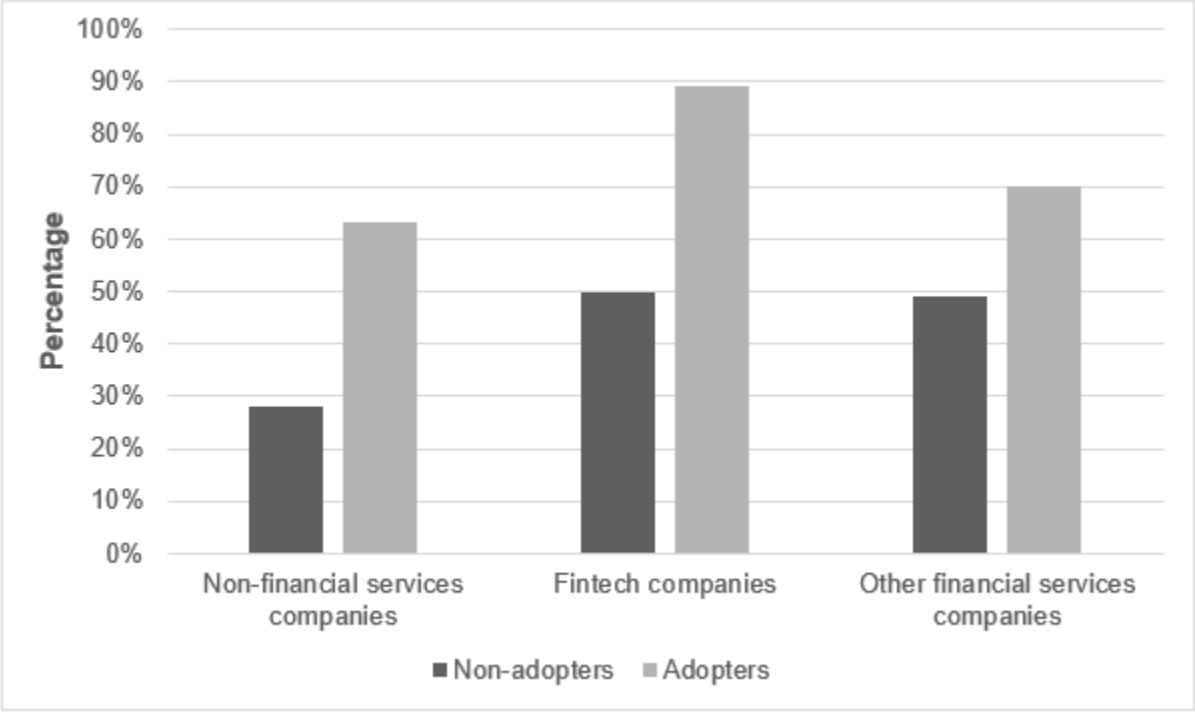
Co-operating with fintechs building on top of the traditional banking framework could potentially create a much more valuable ecosystem for customers. But it might also threaten the bank financially, at least in the short term, cutting into its market share and financial returns. And there were (always) the matters of security and privacy to consider. Could both objectives be realized—higher value for customers and the preservation of JPMC's business success?

EXHIBIT 1: SELECT REASONS FOR USING INCUMBENT FINANCIAL INSTITUTIONS, 2017–2019



Source: Adapted from EY [Ernst & Young], *Global Fintech Adoption Index 2019*, 2019, accessed September 23, 2020, https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf.

EXHIBIT 2: PREFERENCES FOR SHARING BANKING DATA, BY FINTECH ADOPTERS AND NON-ADOPTERS



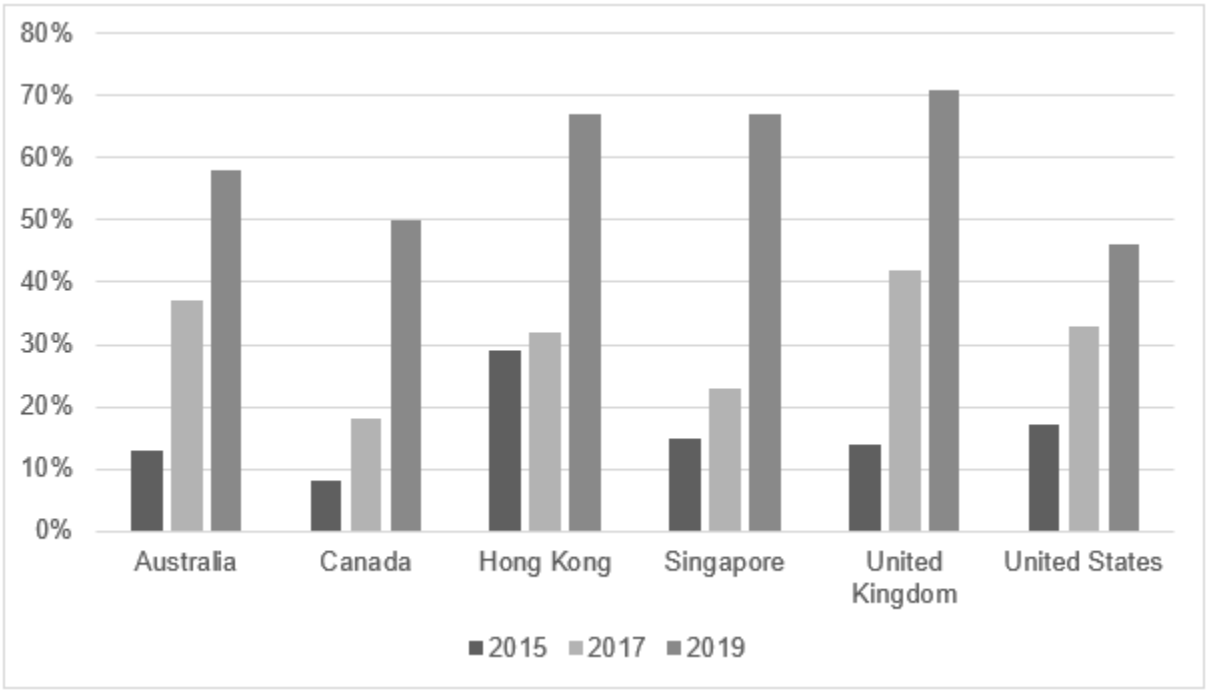
Note: The bars in this chart show the percentage of respondents who either 'agree' or 'strongly agree' that they would be comfortable if their main bank securely shared their financial data with other organizations.
Source: EY [Ernst & Young], *Global Fintech Adoption Index 2019*, 2019, accessed September 23, 2020, https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf.

EXHIBIT 3: COMPARISON OF FINTECH CATEGORIES, RANKED BY ADOPTION RATE FROM 2015 TO 2019

2015		2017		2019	
Category	Adoption Rate	Category	Adoption Rate	Category	Adoption Rate
1. Money Transfers/ Payments	18%	**1.** Money Transfers/Payments	50%	**1.** Money Transfers/Payments	75%
2. Savings & Investments	17%	**2.** Insurance	24%	**2.** Insurance	48%
3. Budgeting/Financial Planning	8%	**3.** Savings & Investments	20%	**3.** Savings & Investments	34%
4. Insurance	8%	**4.** Budgeting/Financial Planning	10%	**4.** Budgeting/Financial Planning	29%
5. Borrowing	6%	**5.** Borrowing	10%	**5.** Borrowing	27%

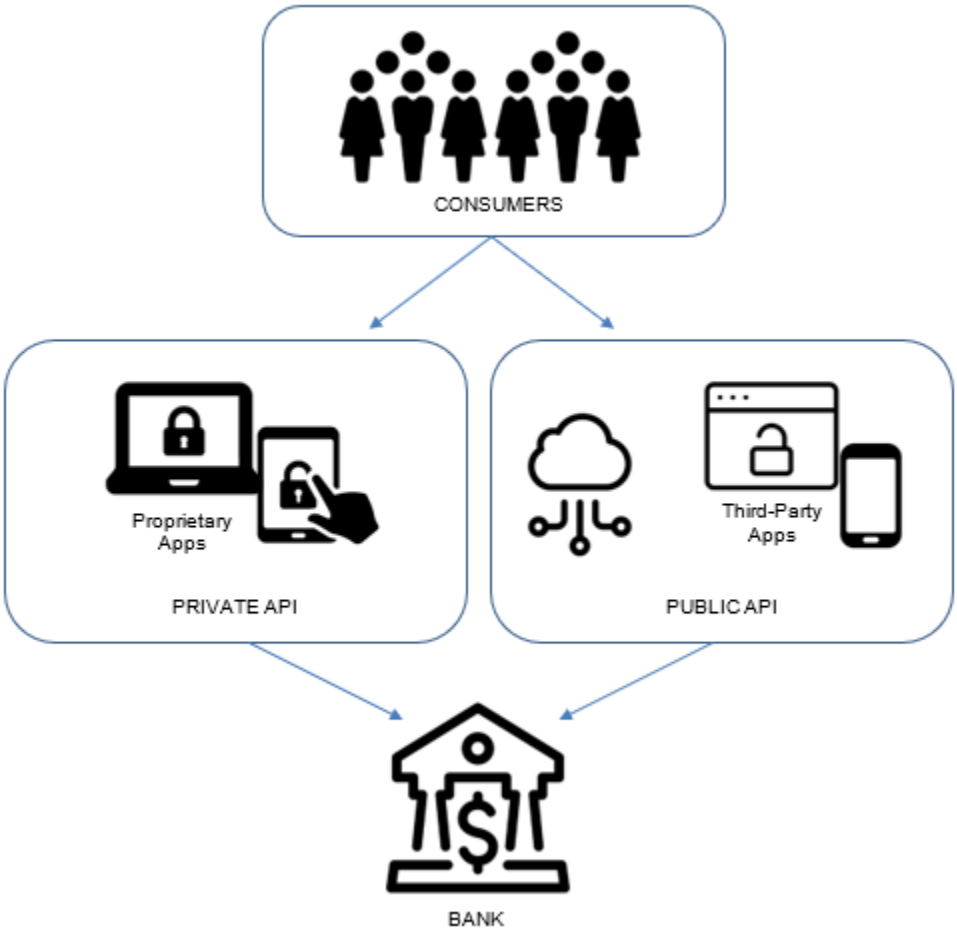
Source: EY [Ernst & Young], *Global Fintech Adoption Index 2019*, 2019, accessed September 23, 2020, https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf.

EXHIBIT 4: COMPARISON OF FINTECH ADOPTION IN SIX MARKETS, 2015–2019



Note: These figures show adoption rates per market for the six markets for which a comparison is available.
Source: EY [Ernst & Young], *Global Fintech Adoption Index 2019*, 2019, accessed September 23, 2020, https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf.

EXHIBIT 5: THE ROLE OF APIs IN FINANCIAL ECOSYSTEMS



Note: App = application; API = application programming interface.
Source: Created by the case author using icons by Gregor Cresnar, under Creative Commons licence CCBY, The Noun Project, accessed May 6, 2021, https://thenounproject.com/grega.cresnar.

ENDNOTES

[1] This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of JPMorgan Chase & Co. or any of its employees.
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