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OPEN BANKING: HOW PLATFORMS AND THE API ECONOMY CHANGE COMPETITION IN FINANCIAL SERVICES

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3.1 INTRODUCTION

In recent years, UK and European regulators have declared that a lack of competition within the retail banking sector has had a negative impact on consumers, and they have deemed the oligopolistic nature of competition in the banking sectors as problematic. In the United Kingdom, acknowledging that unnecessary obstacles deterred retail banking customers from switching providers, the British government's Financial Conduct Authority launched the Current Account Switching Service in 2013 to make it easier and faster to switch providers, including all direct debits and standing orders for consumers and small and medium-sized enterprises (SMEs). However, given the current structure of the industry, comparing relevant products and services remained challenging for customers. Thus, to put more pressure on the older and larger banks (which account for the majority of the retail banking market) to work harder for customers, another regulator, the Competition and Markets Authority (CMA), set out to produce further regulation that would introduce more "openness" in the sector and help "unbundle" or "separate" banking services to create a more level playing field. Open banking regulation was published in 2015 as a framework for the introduction

of open application programming interfaces (APIs) in banking in order to drive the implementation of open banking in the United Kingdom. It coincided with the 2015 Revised Payment Services Directive (PSD2) of the European Commission, which has the same purpose. Since then, open banking regulation has been replicated in other parts of the world—Australia, Brazil, Canada, and Singapore, to name a few—to boost innovation in the financial sectors in these countries.

Generally, the key aims of open banking regulation are to further integrate and support a more efficient payments market, as well as promote competition in an environment where new players are emerging. To fulfill this goal, EU and UK regulations enabled third-party payment institutions to access consumer bank accounts, which are held mostly by incumbent banks. To do this, the law required all banks to create interfaces (such as open APIs) through which trusted third parties can automatically connect to customers' bank accounts and access their transaction data as well as initiate payments, upon completion of a three-step process for customer consent.

At its very core, financial services is an information business, and so changing not only the way information is communicated but also the type of data that is being shared between participants in the market could lead to a drastic change in the competitive dynamics and market structure. Fundamentally, open banking does exactly that: it provides a new framework for sharing financial data in a systematic, transparent, and secure way. Such data-sharing activity not only reduces the barriers to entry for new participants but also allows for novel and innovative products to be introduced for the benefit of consumers who gradually gain more control of their data. While this is an attractive proposition, open banking frameworks constitute a challenge for incumbent banking institutions and traditional business models that are based mostly on a vertically integrated arrangement for value creation.

The recent wave of digitalization in the banking industry and the application of new technologies across the broader spectrum of financial services—from payments and accounts to lending and wealth management—have led to the emergence of new entrants (such as *fintechs* and *challenger banks*) that have managed to claim some of the market share from established banks. As competition intensifies, incumbent firms are gradually reconsidering their position in the market and value proposition to customers. In this context, incumbent institutions can either choose to embrace change and be open to collaboration using the opportunities that technology offers by interacting with the greater ecosystem of market participants and other service providers, or defend their position by focusing their efforts on developing competitive solutions for all customer and product segments, limiting access to their systems and platforms.

The introduction of PSD2 in the European Union as well as the Open Banking initiative in the United Kingdom has left little room for traditional banks to follow the defensive route, and thus many have been considering ways to embrace the new regulations and remain competitive. As indicated above, a key technology that has been instrumental in this context (from both a strategic and a regulatory perspective) is APIs. APIs have proved to be one of the safest ways to share financial data securely and in a standardized way. They have been tried and tested in many industries and contexts and thus offer a good way to cross organizational boundaries and develop ecosystems for innovation and value creation. In this chapter we consider how the introduction of APIs and open banking will affect banks' organizational structure and competitive position in the market, how platform business models play a role in this context, and how banks can develop a platform-based strategy to deal with digital transformation in the shifting environment of increased data sharing.

3.2 OPEN APIs IN BANKING

An API is a technology that allows two computer applications to talk to each other over a network using a common language that they both understand.¹ APIs are scalable, secure, and standardized and thus can be reused in different settings with very low development costs. David Berlind, editor in chief of ProgrammableWeb.com, once described them as “electrical sockets that have predictable patterns of openings”² into which other applications that match those patterns can “plug in” and consume them in the same way electrical devices consume electricity. This systematic way of sharing data can make it easier for teams across an organization to collaborate and access information when and however they need it, thus helping to interconnect services and business processes, improve employee productivity, and even create better omnichannel experiences for customers.³ Similarly, APIs can be used to expose business assets such as information, a service, or a product to external audiences, hence reaching beyond the boundaries of the firm. Such *external* APIs can provide further integration with company partners and allow third parties to consume organizational data that can create cross-selling and upselling opportunities down the line.

While APIs in banking are not new, they have been restricted to mostly *internal* or *closed* uses in order to unlock data resources across the organization and to try to break data silos using data in new applications and systems. However, the most innovative and game-changing use of APIs has been their *open* implementation that establishes simplified and standardized connections beyond the boundaries of a single firm. In financial services, such use of APIs is commonly seen in card networks (such as VISA and Mastercard) in order to integrate infrastructures with selected e-commerce partners, leading to more functionality and better customer experiences. The recent emergence of open banking regulatory frameworks

around the world—and especially in geographies such as the United Kingdom, the European Union, and Australia—is steering the adoption of open APIs in banking beyond the voluntary phase and toward a requirement. Depending on the jurisdiction and open banking implementation in each country, APIs can be used to communicate account and transactional data but also initiate payments and create accounts. The more “open” the APIs, the higher the potential of radical transformation in the industry.

APIs can be conceptualized in four main ways. First, APIs can be understood as an *integration technology* that allows for interoperability and modularity in systems.⁴ Their main benefit is that they “enable interfaces, services, and applications to connect seamlessly with one another, making digital content accessible” between a wide range of independent applications.⁵ API technology provides a customary interface (based on a set of agreed-upon standards) and a layer of abstraction that reduces complexity and allows API-consuming systems to “plug-and-play” without the need to know the specifics of the API provider’s systems.⁶ Second, APIs are *boundary resources* for innovation and become “the software tools and [embedded] regulations that serve as the interface for the arm’s-length relationship between the platform owner and the application developer.”⁷ In this context, organizations can share a core functionality based on a software platform and provide external developers an opportunity to produce modules that interoperate with it,⁸ thus adding more value for consumers on the platform. This premise holds important implications for the platform business models discussed below. Third, APIs can moderate and record economic activity (through their documentation of terms and conditions and service-level agreements) and thus act as *contracts* between economic agents in an ecosystem. In economic theory, contracts are a big part of the negotiation costs involved in transactions and have an effect on the organizational structure and production process.⁹ Waiving such costs

with a simple and scalable technology can be revolutionary for the organization of the firm and its economic activity. Finally, as API usage is distinct and can be logged and managed, APIs can be seen as *products* that can be priced, sold, and developed based on the demands of their users.¹⁰

Open banking regulatory frameworks, such as PSD2 in the European Union and Open Banking in the United Kingdom, which demand data openness (often through the means of open APIs), offer a unique opportunity to experiment with new business model ideas such as platforms in banking. Using APIs, new banks can enter the market much more easily, as being able to connect to customer data at incumbent banks offers these new entrants an opportunity to switch customers over by showing how much better they can analyze customer data to offer more customized services such as money management tools. Given that these new entrants typically start with a limited number of products—for example, a current and/or a savings account—many have followed a platform business model, letting customers obtain financial services from multiple fintech providers by connecting them on a digital platform, typically in the form of a mobile application. Thus, the first business-to-customer financial platforms, also known as *financial marketplaces*, were born as direct competition to the offerings of traditional banks. This move, which has been coined as “banking as a platform,” describes the premises upon which banks can adopt a platform strategy model and change the rules of competition.

Before discussing how platform business models can be used in banking specifically, we discuss what platforms are, how they function, and why they have disrupted more and more industries in the past couple of decades.

3.3 THE ECONOMICS AND STRATEGY OF PLATFORMS

Platform firms such as Google, Amazon, Facebook, and Apple have managed to disrupt their respective industries and

outperform their incumbent rivals with their unprecedented growth and economic efficiency. The success of such ventures is driven by a business model that moves away from the traditional vertical integration of the firm (also known as the *pipeline business model*) and introduces a flatter, more inclusive, and innovation-centric approach to economic activity and value creation.¹¹ Platform businesses often use technology to “connect people, organisations and resources in an interactive ecosystem in which amazing amounts of value can be created and exchanged.”¹² This organizational formation can facilitate value-creating interactions among consumers (demand side) and external producers (supply side) and produce a *multisided market*.¹³ While the idea of *platform business models* has existed for years, the recently developed *digital platforms* have the advantage of being “editable” and “reprogrammable,”¹⁴ which could make them more agile and responsive to incorporating complementary modules from third-party developers in order to extend functionality. This makes them more scalable and cheaper to run but also allows them to leverage the large amounts of data that are captured while at work.

Successful platforms usually develop a core value proposition or infrastructure in the form of a product, service, or technology on which a large number of firms can build complementary products, services, or technologies, thus creating a loosely assembled business ecosystem for innovation.¹⁵ Two key functions that platform leaders aim to deliver are (1) *bringing together disparate resources* and know-how from different firms, and (2) *matching and connecting users with producers* of products or services (see figure 3.1).

Firms such as Apple, Google, Microsoft, and Linux in the tech sector, but also Airbnb, Uber, eBay, YouTube, Facebook, VISA, and Mastercard in other sectors, have been using these two principles to build successful digital platforms and take advantage of an entire ecosystem of suppliers and users. There are two economic theories at play that give platforms

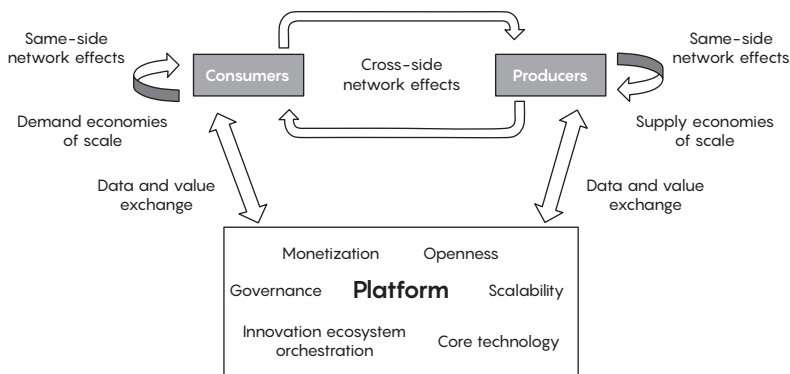


FIGURE 3.1

Platform business model: transaction costs and network externalities.

an advantage over traditional “pipeline” business strategies: *transaction costs theory* and *network effects*. Transaction costs are the search costs, coordination costs, negotiation costs, and information asymmetry costs an organization faces while making choices about its production process. Organizations that struggle to address these costs face the “make or buy” question, in which they must either turn to the market or become more integrated¹⁶ to satisfy their production needs. A platform strategy can potentially be better than a hierarchy or a pure market transaction because it can further reduce the searching, matching, negotiation, and contract costs as well as lower information asymmetries (moral hazard) that are a potential risk to both consumers and suppliers. As a result, a platform business model is mostly about “selling reductions in transaction costs,”¹⁷ as it does not, for example, own any of the cabs or hire any of the drivers.

In addition to the above, *network externalities* or *network effects* describe how the increasing number of network adopters can have an impact on the benefits (or utility) that each user enjoys on a platform.¹⁸ Network effects can be found

in almost any platform and can make a real difference in the value that users gain. In financial services, this is mostly apparent in payment systems and financial telecommunication infrastructures such as SWIFT, where the more banks that use the network, the more value everyone gets by being able to transmit payment instructions to an increasing number of counterparts. The presence of such *direct* network effects is well documented in the literature.¹⁹ Similarly, *indirect* network effects can exist when value for one side of the network increases as usage goes up on the other side of the network—for example, you get more value from your VISA card when more merchants accept it as a means of payment. Considering the above, the platform leader will need to moderate platform openness by applying filters and by controlling and limiting the access of users on the platform and potentially even their activities and connections.²⁰ This process, known as *platform curation*, will safeguard the level of quality of service that platform users enjoy and will uphold the two factors that make a platform valuable: the maintenance of low transaction costs and nurturing of positive network effects. In this context, *data feedback loops*²¹ from consumers on the quality and usability of the various offerings will help distinguish between good and bad services and eventually discontinue or discourage those that have mostly negative ratings. Data and the various metrics one can produce around key interactions and performance are used routinely in digital platforms and can have important spillover effects that influence even the pricing of services.

3.4 PLATFORM COMPETITION IN BANKING

The rise of platform business models in banking offered by new entrants (e.g., Atom, Monzo, N26, Starling in the European Union / United Kingdom) forces banks to revisit their role as financial intermediaries and prepare to become re-intermediaries by providing “online automated tools and systems that offer

valuable new goods and services to participants on [all] sides of the platform.”²² Platform competition in the sector means that the leanest and most attractive experience for both developers (a new “breed” of client) and wholesale and retail customers will prevail. Therefore, banks will need to cultivate and manage growth on all sides of their platforms while keeping and investing in some core applications central to their value proposition, such as basic account products, national payments, and information enrichment. The formation of such an ecosystem may help keep transaction costs low and maximize the benefits of network effects and data feedback loops.

In order to realize value in this new way, however, banks will need to reconsider several elements of their structures and business models. Their legacy IT infrastructures, built over several decades as new products were added to their portfolios, may stand in the way, requiring massive IT overhauls before a platform infrastructure can be built. Second, their hierarchical organizational structures may hinder the creation of customer-centric bundles of products and services across the organization. Finally, their organizational cultures, which have treated data security and data analysis as mutually exclusive priorities, will need to be adjusted to offer both.

In an environment where open data drives flatter rents and lower prices, the ability to engage customers with better experiences through more valuable applications may act as a counterincentive to move to a different platform. The more opportunities there are to create value for customers on a particular platform, the less inclined customers will be to leave, thus creating a customer “lock-in effect.” In this context, openness can be managed in order to maximize positive network externalities and win more customers.²³ For example, banks should be able to match customers’ demands with respective services and user experiences that cannot be found in other platforms. Failing to do so will decrease consumer confidence in the particular bank. To avoid such frustration,

platform banks need to use customer data more effectively to track preferences and engage their clients with products they are likely to use. This is of particular significance in financial services, where consumers can be price-sensitive and likely to move once a better opportunity appears (e.g., better interest rates for individual savings accounts or deposits and mortgages). While banking customers may often exhibit a degree of “stickiness” and inertia due to information asymmetries, introducing more transparency and openness in the market will encourage movement and eventually change the pace of the competition.

In addition, banks will need to make sure that the quality of external services (e.g., fintech offerings) provided on their platforms is adequate to maintain customers’ loyalty. Poor quality or unreliable services will damage the reputation of both the bank and the respective fintech. As platform owners, the banks will need to absorb any transaction costs from the various fintech interactions and take responsibility for the reliability and security of the service. This is similar to the fundamental responsibilities of platform owners who broker transaction costs and charge a premium for the matching between the demand side and the supply side. Banks will thus have a new role of “re-intermediation,” which essentially will be to not only facilitate transactions but also provide trust between the two sides of the market—for example, the fintechs and end customers. This is similar to how iTunes can guarantee the quality of products for those who purchase music from its platform and how Uber can guarantee the quality of its transportation services through its app.

Keeping the platform open versus closed is another challenge to tackle. While having an open platform may create difficulties in monetizing the benefits, as it reduces the switching costs and so the possibility of locking customers in, a closed system may stifle innovation and lead to isolation. There are plenty of examples where firms ended up “on the wrong side

of history”—Nokia, Myspace, BlackBerry, and Apple’s Macintosh computer in the 1990s, to name a few—because they did not let outside innovators add complementary products and tried to do everything in-house with limited resources. A hybrid approach where platform owners invest their resources in a small number of core applications can be a healthier option to provide balance and guide competition. However, platform owners will still need to decide what their core competencies will be and what key features they should invest in before opening up the platform to external competition. In the case of traditional banks, this may lead to the discontinuation of several product lines that are no longer competitive.

3.5 EXTERNAL THREAT: BIG TECH

When considering platform competition within the banking industry, we need to take into account possible challengers that may emerge from different markets. Existing platforms that have “overlapping user bases and employ similar components”²⁴ can be notable contenders. In such a scenario, “platform envelopment” strategies could be deployed in order to pursue entry into a new market by expanding the functionality of one’s own platform to leverage communal user relationships and mutual components.

We currently observe this platform-as-a-bank strategy in the case of big technology platforms—for example, Facebook and Google moving toward the banking domain, taking advantage of their user bases, trusted brands, and existing functionalities to offer banking services. Some of these platforms already function at the fringes of the financial services sector. For example, Amazon already operates a payments service and a lending business to SMEs that sell products on its web page, thus enhancing further cross-side network effects and gaining business. Facebook recently incorporated peer-to-peer payments between Messenger accounts in the United States, then

obtained an e-money license in the Republic of Ireland to pave the way for Messenger payments in Europe.

The disruption in banking by big-tech platforms will be exacerbated by fintech start-ups that, frustrated by traditional banks' closed strategies, may view these global technology firms as go-to platforms for distributing their innovative services. Banks will need to compete with these existing firms and learn how to operate on a platform and ecosystem basis in order to remain competitive. It is possible that such competition will lead to a multiplatform bundle where multiple platforms sit on top of each other (vertical stacking) trying to explore inefficiencies in the existing banking system and extract value from customers. While this is expected to bring certain benefits to customers in the midterm, it will also rearrange the banking services' value chain and redistribute market share and profits in the sector. Depending on the market response, this may have an effect on the banks' pricing strategy and customer premiums.

3.6 CONCLUSIONS

Digitalization is changing the competitive landscape in a plethora of industries and for a wide range of firms from local start-ups to global conglomerates. These changes have the potential to make what we know about business strategy and competition obsolete. Open banking and PSD2 are regulatory attempts to transform the banking industry and bring it to the age of digitalization. However, as with other cases of disruption, the effectiveness of these attempts will depend on the response from customers, incumbents, and resourceful market entrants. The tricky issue in regulated markets like banking or health is that the sensitivity of the data to be shared may create cognitive blocks in customers, leading to slow uptake of innovative offerings in the market. In these cases, in addition to regulations to bring down entry barriers, governments

should also employ policies and programs to educate customers to leverage the new opportunities created in the market.

NOTES

1. D. Jacobson, G. Brail, and D. Woods, *APIs: A Strategy Guide* (Beijing: O'Reilly, 2012).
2. D. Berlind, "What Is an API, Exactly?," ProgrammableWeb.com, December 3, 2015, <https://www.programmableweb.com/news/what-api-exactly/analysis/2015/12/03>.
3. S. Nijim and B. Pagano, *APIs for Dummies*, Apigee special edition (Hoboken, NJ: John Wiley & Sons, 2014).
4. R. Bodle, "Regimes of Sharing," *Information, Communication & Society* 14, no. 3 (2011): 320–337, doi:10.1080/1369118X.2010.542825; C. Y. Baldwin and K. B. Clark, *Design Rules: The Power of Modularity* (Cambridge, MA: MIT Press, 2000).
5. Bodle, "Regimes of Sharing," 325.
6. P. F. Cowhey, J. D. Aronson, and D. Abelson, *Transforming Global Information and Communication Markets: The Political Economy of Innovation* (Cambridge, MA: MIT Press, 2009).
7. A. Ghazawneh and O. Henfridsson, "Balancing Platform Control and External Contribution in Third-Party Development: The Boundary Resources Model," *Information Systems Journal* 23, no. 2 (2013): 173–192, quotation at 175.
8. A. Tiwana, B. Konsynski, and A. Bush, "Platform Evolution: Coevolution of Platform Architecture, Governance, and Environmental Dynamics," *Information Systems Research* 21 (2010): 685–687.
9. R. H. Coase, "The Nature of the Firm," *Economica* 4, no. 16 (1937): 386–405; O. Williamson, *Markets and Hierarchies* (New York: Free Press, 1975); S. J. Grossman and O. D. Hart, "The Costs and Benefits of Ownership: A Theory of Vertical and Lateral Integration," *Journal of Political Economy* 94, no. 4 (1986): 691–719.
10. Jacobson, Brail, and Woods, *APIs*.

11. A. Gawer, ed., *Platforms, Markets and Innovation* (Cheltenham, UK: Edward Elgar, 2009).
12. G. Parker, M. Van Alstyne, and S. Choudary, *Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You* (New York: Norton, 2016).
13. J. C. Rochet and J. Tirole, "Two-Sided Markets: A Progress Report," *RAND Journal of Economics* 37, no. 3 (2006): 645–667.
14. M. De Reuver, C. Sørensen, and R. Basole, "The Digital Platform: A Research Agenda," *Journal of Information Technology* 33, no. 2 (2018): 124–135.
15. A. Gawer and M. Cusumano, *Platform Leadership: How Intel, Microsoft and Cisco Drive Industry Innovation* (Boston: Harvard Business School Press, 2002).
16. Williamson, *Markets and Hierarchies*.
17. M. Munger, "Coase and the 'Sharing Economy,'" in *Forever Contemporary: The Economics of Ronald Coase*, ed. Cento Veljanovski (London: Institute for Economic Affairs, 2015), 187–208.
18. C. Shapiro and H. Varian, *Information Rules: A Strategic Guide to the Network Economy* (Boston: Harvard Business School Press, 1999); J. Farrell and G. Saloner, "Standardization, Compatibility, and Innovation," *RAND Journal of Economics* 16, no. 1 (1985): 70–83; S. Scott, J. Van Reenen, and M. Zachariadis, "The Long-Term Effect of Digital Innovation on Bank Performance: An Empirical Study of SWIFT Adoption in Financial Services," *Research Policy* 46, no. 5 (2017): 984–1004; N. Economides, "The Economics of Networks," *International Journal of Industrial Organization* 14, no. 6 (1996): 673–699; M. Zachariadis, "Diffusion and Use of Financial Telecommunication: An Empirical Analysis of SWIFT Adoption" (NET Institute Working Paper No. 11-10, October 2011).
19. Scott, Van Reenen, and Zachariadis, "The Long-Term Effect of Digital Innovation on Bank Performance"; Zachariadis, "Diffusion and Use of Financial Telecommunication."
20. Parker, Van Alstyne, and Choudary, *Platform Revolution*.

21. These data-related effects can be characterized as demand-side economies of scale, which are present when platforms are more valuable to their users (on any side of the network) as they scale their operations. C. Shapiro and H. Varian, *Information Rules: A Strategic Guide to the Network Economy* (Boston: Harvard Business School Press, 1999).
22. Parker, Van Alstyne, and Choudary, *Platform Revolution*, 71.
23. M. Van Alstyne, G. Parker, and S. Choudary, "Pipelines, Platforms, and the New Rules of Strategy," *Harvard Business Review*, April 2016, 54–60.
24. T. Eisenmann, G. Parker, and M. Van Alstyne, "Platform Envelopment," *Strategic Management Journal* 32, no. 12 (2011): 1270–1285, quotation at 1271.