CHAPTER 1

Platform Essentials on Outcome Economies

We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society.

— Klaus Schwab, executive chairman, World Economic Forum [1]

The fourth industrial revolution is about platforms and exponential technologies, which interact to reorganise entire ecosystems made up of companies, citizens, and public institutions. Overall, customers always seem to appreciate the same, frictionless experiences at convenient prices. This is what platforms do best but that is only the surface. Letting the reality of network effects emerge through technology, they shift the foundations of entire industries from outputs to outcome economies, and deeply transform the way users perceive value and demand for services. However, the transformation to outcome economies is a more complex endeavour for financial services because of regulatory constraints, and the biological unveiling of core information asymmetries. The latter shadow the generation and perception of value across human interactions, as well as on digital. This recognition is the starting point for revisiting platform theory in the context of banking and financial markets, and investigating the sustainable evolution of prevailing business models to harvest higher business value.

1.1 INTRODUCTION

The **first industrial revolution** started in Great Britain around the 1770s with the adoption of mechanised spinning, which was made possible by high rates of growth in steam power and iron production. The term "industrial revolution" was coined by the French envoy Louis-Guillaume Otto in a 1799 letter announcing that France had entered the race to industrialise. It marked a major turning point in the history of humanity and labour since *homo sapiens* started domesticating animals and plants. It affected almost every aspect of human life, laying the groundwork for the emergence of capitalism. According to Landes [2], the standard of living for the general population began to increase consistently for the first time in history, opening an era of progressive per-capita economic growth. At that time, industries were machine- and labour-intensive, servicing a growing population of consumers in multiple countries in a very linear fashion: from producers to consumers. A recession followed the economic boom in 1830s, when the market for energy-enabled innovations matured. Neither the increasing popularity of locomotives and steamships, nor the appearance of the electrical telegraph were powerful enough conditions to justify high rates of economic expansion.

One century after the industrial revolution started, rapid economic growth surged again in the 1870s. The late 1800s were characterised by rapid standardisation of production processes, identified as the **second industrial revolution** or the "technological revolution". Widespread deployment of electrical grids and new steel-making processes allowed the mass production of consumer goods. Serial manufacturing of machine tools and their interchangeable parts further streamlined production processes with the orchestration of more effective assembly lines. The enormous expansion of rail and telegraph lines allowed an unprecedented movement of people. The epicentres were in the United States, Germany, Great Britain, France, Japan, and Italy. Social tensions and financial turmoil were not absent, such as the Wall Street Crash in 1929. The First World War was followed by the devastating Second World War, leading to a new world order.

Almost two centuries after the industrial revolution began, a third phase of exceptional growth started around the 1960s. **The third industrial revolution** originated with the mass adoption of computers and digital record-keeping. This "computing revolution" is epitomised by the shift from mechanical and analogue electronic technology to digital electronics, which transformed not only production techniques but also business processes. The invention of the first transistor at Bell Labs in 1947 was followed by a relentless rate of growth in computing power. According to Moore's law, coined in 1965, the number of transistors in a dense integrated circuit will have doubled every year for a decade. Moore's empirical predictions, then revised to doubling every two years in 1975, seemed accurate for many decades until around 2010, when the semiconductor advance started slowing below the predicted pace. However, the advent of the internet laid the groundwork for a new paradigm shift. By 2016, half

of the world's population was connected, and cloud computing made data increasingly accessible.

In the late 1990s, Austrian-born business writer Peter Drucker, who advised top corporations in post-war America, said that "culture eats strategy for breakfast". Drucker never meant to say that strategy is unimportant, rather, that an empowering culture is the most powerful enabler to organisational success. A few years later, venture-capitalist Marc Andreessen wrote that "software is eating the world" in an article in the *Wall Street Journal* [3]. Andreessen was witnessing, then participating in, the exponential growth of American companies like Google, Apple, and Amazon, soon followed by Facebook, Twitter, and the Chinese Tencent and Alibaba. Yet, winners-take-all success is not just about "software" but novel forms of personal and business interactions, and alternative ways of working and collaborating, which "digital platforms" enable at an unprecedented pace through exponential technologies. Currently, a new breed of entrepreneurs is orchestrating digital platforms to challenge traditional industries. They connect individuals and organisations on mobile technology so that they can interact in ways not otherwise possible, launching non-linear increases in utility and value across borderless communities of providers and consumers. They revolutionise the way industrial products and services are conceived, designed, produced, and distributed.

Klaus Schwab, executive chairman of the World Economic Forum, named this new phase of extensive transformation the **fourth industrial revolution** [1]. This is largely a "data revolution", underpinned by internet ubiquity and scale deployment of artificial intelligence. The data revolution overlaps with the last stages of the computing revolution, as the fifth generation of wireless technology (5G) becomes mainstream and quantum computing matures. However, there is a key difference between the third and the fourth revolutions that sets the latter apart. Essentially, traditional businesses are being progressively transformed inside-out in a significant shift of business focus from outputs to outcomes. Exponential technologies are putting platform economics on steroids to excel on outcome economies, using all means to make the fourth revolution a **platform revolution**.

Currently, the most valuable firms on the planet are platforms. The total market capitalisation of the five largest US stocks accounted for nearly 20% of the S&P 500 index at the beginning of 2021 (Figure 1.1), and they are all platforms (i.e., Apple, Microsoft, Alphabet, Amazon, and Facebook). Similarly, Alibaba and Tencent are the most valuable companies in Asia.

It is now clear that "platforms are eating the world".

1.2 PLATFORMS AND ECOSYSTEMS

Platforms are not at all a modern phenomenon, although digital technology is forcing a winner-takes-all advantage. The telephone network is one such example.

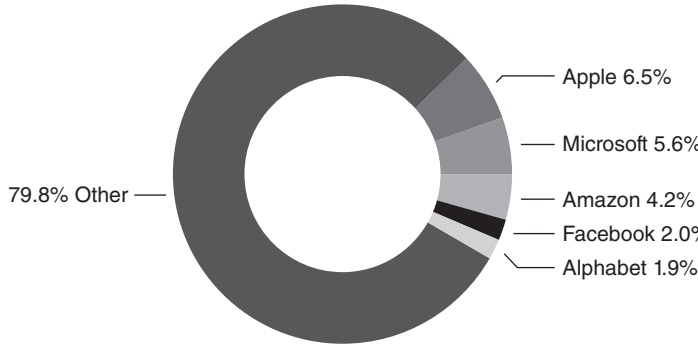

FIGURE 1.1 Composition of the S&P 500, early 2020

Alexander Graham Bell patented the first telephone device in 1876 to transmit vocal or other sounds "telegraphically" for the conduct of business and trade. He founded American Bell Telephone in 1885 to operate local networks. He rebranded it American Telephone & Telegraph (AT&T) in 1899 to operate long-distance services to run the US monopoly on telecom operations in the early 1900s. Initially, telephones were leased in pairs to subscribers, who had to arrange with telegraph contractors to deploy a line between them (e.g., one phone for their home, and one for their shop). Users who wanted to speak to different stores and suppliers would set up multiple pairs of telephones until switchboards were introduced. As the telephone system grew, its value extended beyond the initial one-sided dimension to create a multi-sided platform, enabling billions of people to talk around the world. Clearly, while telephone networks were connecting only individual pairs of users, or small clusters, exponential value could not be generated. However, as more users started to onboard, more people wanted to connect to a telephone line for very different purposes ranging from residential use to long-distance business calls. Adding users did not add value linearly but scaled the telephone platform exponentially (Figure 1.2).

Microsoft DOS is a more recent platform example, which well describes the traits of the computing revolution. In 1980, IBM was planning to introduce a personal computer (PC) for business use. Bill Gates, at the time a 25-year-old talented programmer, was commissioned for less than one million dollars in fees and engineering work to build the MS-DOS operating system. Microsoft, which Gates co-founded with Paul Allen in 1975, was granted the right to bundle DOS with a suite of programmes running on the IBM PC. As reported by the *Wall Street Journal* in 1986, there were no additional fees or royalties but the exclusive right to license other manufacturers. Trading away the basic operating system to IBM, yet retaining the licensing right, allowed Bill Gates to create a platform for a fast-growing hardware and software industry centred on IBM compatibility. Microsoft leveraged the MS-DOS platform standard in the 1990s, bundling the operating system with Office. Allowing the Microsoft Software Development Kit (SDK) to be accessed – at no cost – by third-party developers ignited

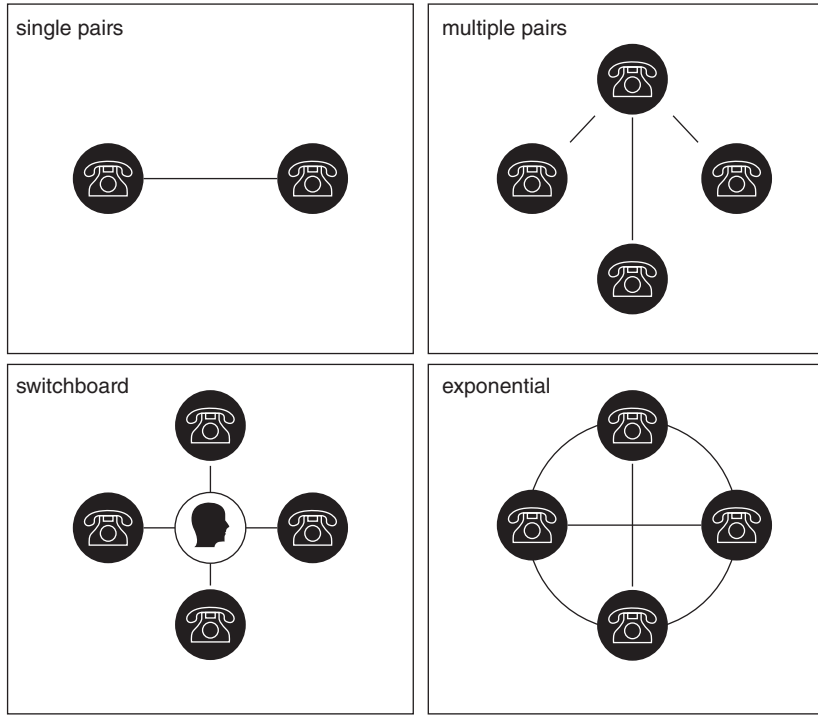

FIGURE 1.2 Telephone networks

positive network effects across the programmers' ecosystem, which resulted in an impressive proliferation of applications for DOS and Windows.

Today's digital platforms are asset-light venues or technical solutions that generate value by facilitating interactions among participants without taking part in the transactions themselves, or the generation of products and services exchanged. Typically, their open infrastructure and governance rules are designed to allow high levels of participation, driving positive network effects to grow. As data is becoming increasingly open and free, digital platforms are positioned to benefit even further. They create unique value propositions for final users by opening traditional value chains, innovating the way value is exchanged, and expanding their attractiveness with the orchestration of entire ecosystems.

So then, what is the difference between a value chain, a platform, and an ecosystem, and how do they intersect and re-engineer the value chains? Porter [4] defined the value chain as a set of output-oriented activities that a firm, operating in a specific industry, performs linearly in order to deliver valuable products (i.e., goods or services). Porter's definition has proven particularly useful to describe the linked chain of activities performed in the physical world by traditional companies. However,

although examples of value chains can be found in the digital world, the dematerialisation of products and services accelerates the transformation of value engineering towards new forms of interactions, that open up the binary buyer-seller and producer-distributor relationships to multi-sided interactions. Norman and Ramirez [5] introduced the concept of the value constellation, in which value is generated by the positive exchanges and interactions between the nodes of a network made up of relatively autonomous units (e.g., firms, consumers, media, or regulators) that can be managed independently but operate together or compete under a common set of rules (i.e., governance). Ecosystems are composed of multiple stakeholders' nodes that are connected through single or interpretable networks that digital platforms reveal or allow to orchestrate anew.

Shapilov and Burelli [6] observe that platforms and ecosystems are not the same. They can coexist, or not, inside a business model with four permutations that correspond to four different value propositions, which are here re-edited (Figure 1.3).

- **Single value chains.** Value is generated by stand-alone interactions between buyers and sellers, without any further connection between consumers or through the business relationships of the sellers. For example, book shops are neither platforms nor ecosystems as clients interact with the resellers and cannot access deeper levels of the traditional value chain (e.g., book authors or publishers). Brick-and-mortar retail banking is another example of value chains centred on the sale quantifications of pre-selected financial products intermediated with the clientele.
- **Digital value chains.** Value is generated by enabling specific transaction types between two parties, regardless of the nature of the underlying exchange. E-commerce websites are platforms that channel the interactions between a panoply of sellers and buyers within the specific constraints of intermediated relationships. Amazon users can find the wanted products on a personalised shelf, and further research without the intermediation of a physical, thus limited, marketplace. Similarly, Allfunds is a platform enabling a cost-efficient distribution of financial products and related services. Self-directed professional users can scout and access a catalogue of investment opportunities without the need of further intermediaries. Digital value chains are still product-centric. As such, fully digital robo-advisors are still product-centric value chains as they focus on model portfolios with limited capability to personalise client journeys. Financial assets are largely commoditised (i.e., model portfolios), while only liabilities (i.e., goals) can generate true personalisation in the advisory relationship. This explains robo-advisors' limited capability to generate value on platform economies: they can neither contextualise into adjacent ecosystems, nor can they generate financial consciousness, as discussed in the rest of the book.
- **Bundled value chains.** Value is generated through the informal orchestration of ecosystem interactions filtered by priorities, which can be accessed by final users through traditional engagement models. For example, a private equity firm coordinates the aggregation of a variety of management capabilities and business competences supplied by internal experts or specialised contributors.

They all concur to add value to the acquired firm, which benefits from the dedicated coordination of capital resources and human skills. The private equity firm builds specialised ecosystems, aggregating into a bundled offer otherwise separated from value chains, but it is not a platform.

- **Digital ecosystem platforms and value constellations.** Value is generated by allowing the participants of an ecosystem to interact through different and complementary contributions, which are facilitated by sharing data and insights about user preferences and needs. Value shifts from outputs to engagement outcomes, thanks to hyper-personalised experiences. While value-chain outputs are fairly homogeneous, outcomes are all different because they are a function of hyper-personalisation. For example, social media platforms are highly non-linear businesses. They attract an impressive number of participants, and lock their interactions inside win-win situations, exhibiting moderate or high levels of openness in the form and content of their exchange. Wealth management platforms are turning into holistic financial planning offers that hyper-personalise the investment relationship, and allow value to be generated as a function of the transparent interaction between professional and non-professional parties, instead of being sourced from the distribution of highly commoditised financial products. Digital ecosystem platforms are user-centric.

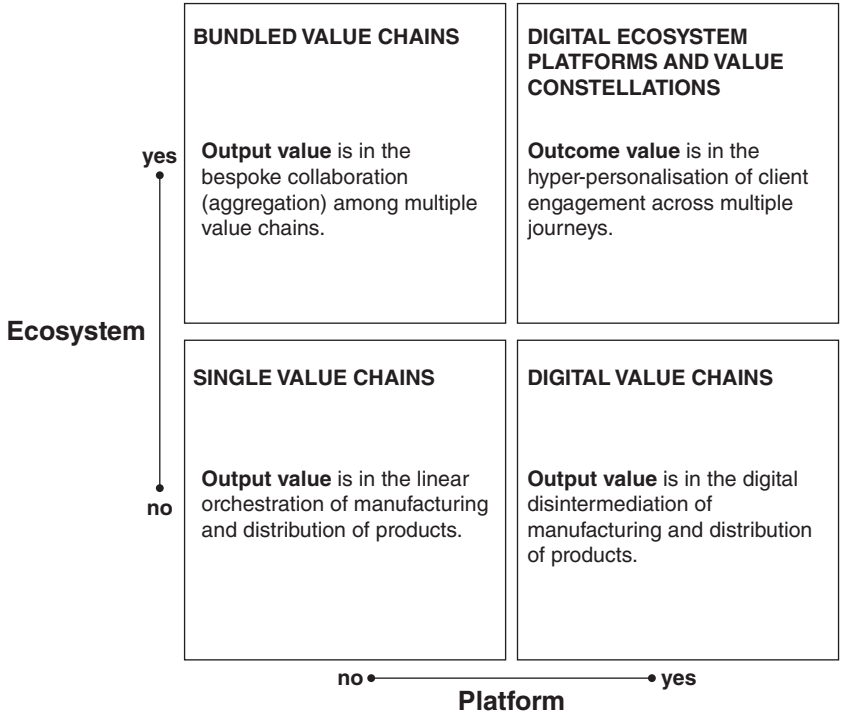

FIGURE 1.3 Value permutations between platforms and ecosystems

Digital ecosystem platforms exponentially leverage positive network effects between participants of large networks. Not only can they transform business relationships inside out of existing ecosystems (e.g., Uber re-engineering the taxi industry). They can also generate their own ecosystems letting new views emerge about economic reality (e.g., Facebook affecting the way people define their own self-identity in a continuous tension between physical and digital life). The real, and somehow discomforting, prowess of the fourth industrial revolution is that digital platforms are gaining the ability to learn a deeper understanding of human reality (e.g., social media interactions). This happens at the aggregate level of the ecosystem, as well as the hyper-personalised component of each user.

On one hand, exponential technologies allow the reality of network structures to emerge for platforms to engage with it. The transparent emergence of "deep" reality also allows technology to catch the real forces at play within economic, political, and social ecosystems, since the network is completely exposed. Therefore, new internal ethical considerations and external regulatory requirements must step in to maintain a fair and common level playing field. On the other hand, exponential technologies also allow platforms to design "new" views on reality. In this case, unknown opportunities can arise to potentially free new ecosystem value to be shared (i.e., a positive impact on reality, such as financial inclusion), or exploit the network by deforming views of reality (i.e., a negative impact on reality, such as fake news).

This book addresses these ecosystem tensions by anchoring platform strategies in financial services to the theory and principles of Financial Market Transparency (FMT), as presented in Sironi [7]. This work addresses the emergence of consequentialist ethics inside the network effects of banking and non-banking ecosystems, enforcing regulatory transparency on incentives, costs, and consequences of financial intermediation.

1.3 INNOVATING FROM OUTPUT TO OUTCOME ECONOMIES

The intersection between platform economics and exponential technologies is accelerating the transformation of industrial and economic systems from traditional output economies to digital-oriented outcome economies. The way goods and services are conceived, designed, produced, and distributed on outcome economies abandons the shore of incremental changes in the efficiency of distribution channels, and leads to an effective redesign of traditional value chains and ecosystem interactions around holistic user experiences and engagement.

Output economies correspond to industries configured in the form of linear value chains. They connect makers of raw material to assemblers of final products through manufacturers, finally distributing goods to final consumers through multiple channels (Figure 1.4). Established business models allow manufacturers and consumers to trade in products that deliver certain results. For example, BMW wants

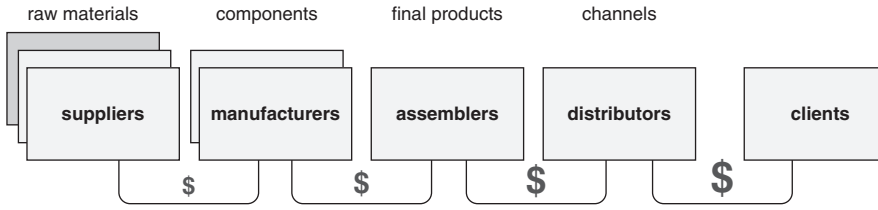

FIGURE 1.4 Linear business

to organise its production plan to sell 100,000 units of the new 7 Series car within one year. BMW starts by designing the new vehicle, prototyping the product, organising the production line with the work of specialised suppliers and assembling the final goods. The new cars are then distributed to licensed dealers internationally, where consumer demand meets BMW high-quality supply. In this example, the core challenge of the German carmaker is about "selling 100,000 private vehicles in the year ahead". The business focus is about discrete sales figures or quantities.

Usually, added value is accumulated at every step of the process in an incremental fashion, augmenting the final costs borne by consumers. These linear value chains are then optimised by means of manufacturing and logistic decisions based on analytics.

Outcome economies, instead, correspond to business decisions that focus on a deeper understanding of users' needs, and are based on imagining alternative and personalised ways to achieve the desired results. Typically, platform models allow producers and consumers to share, through non-linear interactions, "value units" that do not necessarily correspond to products (Figure 1.5). These non-linearities permit network effects to increase almost exponentially. In essence, outcome economies trade in the results themselves, which take the form of users' experiences. For example, the strategic mission of ShareNow is to mobilise users by deploying a fleet of Smart, Mercedes-Benz, BMW, and Mini cars with a one-way point-to-point car rental. The aim is to allow a large number of Berlin citizens to commute point-to-point in a given year. Compared to traditional business models, the core challenge shifts from tracking the production units of cars to enabling the highest number of people to travel. The value chain of the automotive industry disintegrates, and the interaction of all actors with regard to final users is reorganised to focus on perceived benefits along their journeys.

Typically, digital platforms operating in outcome economies are asset-light and exhibit huge revenue potential but cannot succeed without a deeper and instantaneous understanding of customer needs and preferences that traditional businesses do not have. Customers' engagement is to be re-thought by infusing artificial intelligence and data analytics to create seamless experiences that win user trust. It is essential to hyper-personalise and hyper-contextualise user interactions at convenient prices. Building a platform or joining an ecosystem becomes essential to stay relevant in any industry and keep up with the speed of innovation.

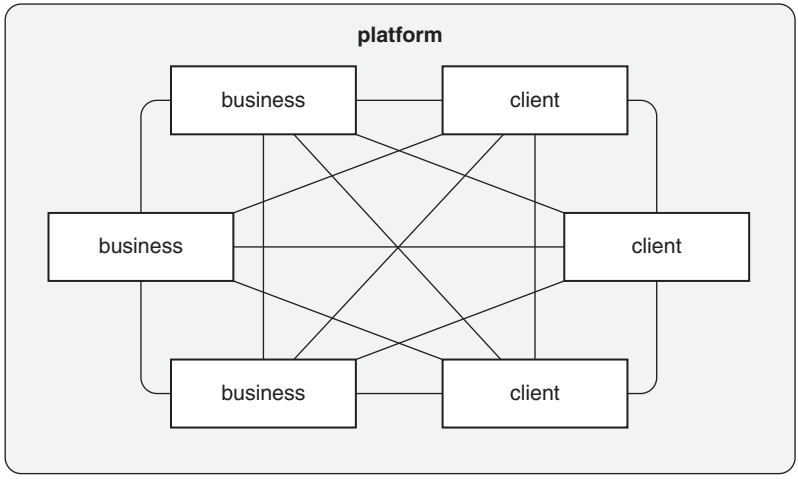

FIGURE 1.5 Non-linear business

Reinventing an industry from outputs to outcomes is complex. It requires the adoption of unconventional innovation strategies that pull traditional business architectures and organisations inside-out. Thinking in a linear fashion and thinking in platforms are opposites, and the history of Apple is one example. Once there was a time when Steve Jobs thought in a linear fashion. There was a second time when he was thinking in platforms, making Apple the first ever trillion dollar company in 2019.

1.4 LINEAR AND NON-LINEAR THINKING

Apple Macintosh has always been recognised for good quality and design since the first version appeared in 1984. Yet Macintosh lagged for many years behind its competitors running on MS-DOS. The success of Microsoft derived from the higher degree of openness of its operating system, encouraging an ever-increasing number of complementors to significantly extend what users could do with their PC. In essence, MS-DOS was built as an open development platform, fostering a high innovation cycle to meet consumer demand, while Macintosh was designed as a good quality "closed" product that reduced its appeal to a niche of users. The hardware was more expensive and not scalable, due to the lack of DOS compatibility. Third-party software producers had to pay for programming languages and databases to build Mac-compatible applications.

The beginning of a new era of design thinking started with the launch of iTunes in 2000, and its Windows-compatible version in 2003. Basically, Apple embraced platform principles and learned how to take linear businesses to the next level of

outcome economies, starting with the music industry. The music industry used to assemble content from artists and distribute their product through retail shops. The business model was very linear and inflexible. Feeding music to iPods using iTunes software removed value chain inefficiencies. Listeners could start connecting directly to producers and artists, while Apple orchestrated the match-making filtering for preferred music content. The music industry focus shifted from the linear distribution of content to the coolness of the Apple experience, in a clear demonstration of the prowess of outcome economies. The positive network effect kicked in to do the rest.

Putting clients to the forefront and centre is a necessary precondition but not enough to allow monetisation. Cupertino's turnkey ability resulted from keeping control of essential financial chokepoints, closing the platform where it made sense. Music content could be loaded on iPods by iTunes only, which was also available on PCs. This feature channelled the aggregation of buy-sell activity onto the Apple marketplace. Instead, MP3 players were source-agnostic, which reduced competitors' capability to retain value. The design excellence of the iPod generated feedback loops among users of the new gadgets, which propelled positive network effects for the use of the iTunes software. When the first iPhone hit the market in 2007, iOS was configured as an open development platform. Apple extended its marketplace to feature an App Store. Initially, the transaction platform featured only 500 apps. As of 2020, the store was hosting more than 2 billion apps, making it the most valuable mobile platform in the world. While in 2019 Apple owned less than 15% compared to Android's 85% of market share in the global mobile handsets industry, its App Store harvested almost 80% more revenues than Google Play, according to research company SensorTower.

Essentially, Apple iOS was born as a development platform to attract an ecosystem of interested developers worldwide. They were all allowed to interact with final users through the Apple App Store only. The Apple Store is a transaction platform, on which over one million of third-party complementors showcase their innovative apps, increasing the value of the iPhone. Apple would have never been able to innovate that much, and so fast, by owning all of the IP related to each new app, or by overly restricting the way they were created and distributed (Figure 1.6).

1.5 PLATFORM TYPES

As the history of Cupertino reveals, there are two major types of digital platforms: development and transaction platforms. The first are more technically focused, with regard to the interactions among users and contributors. The second are more business-oriented, with regard to the onboarding of final consumers.

Development platforms are technological workspaces and frameworks shared by ecosystems of developers to create new complementary products or services. The higher the utility of the complements, the more useful and valuable is the platform for all existing and prospective participants, and the stronger become the positive

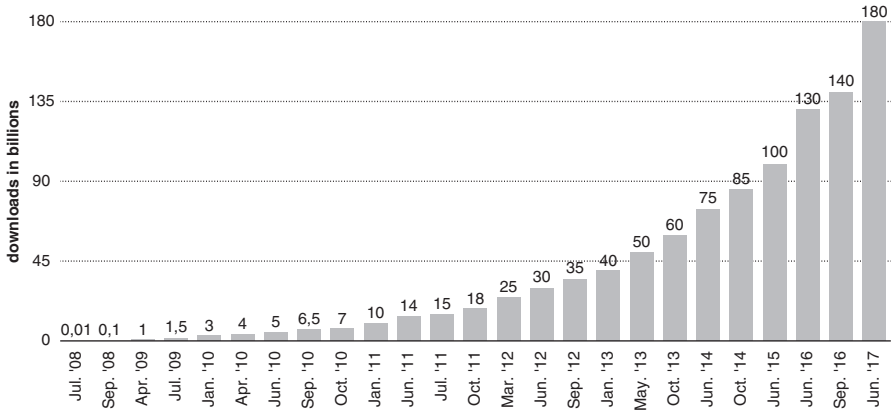

FIGURE 1.6 Cumulative number of apps downloaded from Apple App Store, 2008–2017 (in billions)

network effects. Value is generated by facilitating and streamlining development tasks. Typically, users access an underlying product and leverage a software-development framework. For example, Apple iOS is a development platform granting app developers a framework to create their solutions and let clients download them through the Apple Store, available on consumers' iPhones. Similarly, a high number of software complementors can innovate by leveraging on MS-DOS compatibility, and let clients install their solutions on personal computers. In the context of this book, Banking-as-a-Service models are development platforms.

Transaction platforms allow users and producers to connect and share information, to trade goods, or to orchestrate services. Marketplaces are venues allowing match-making between buyers and sellers, like Amazon and Airbnb. Social media networks are platforms on which users interact directly to share pieces of information as "value units", such as Facebook and Twitter. Instead, data platforms allow users to interact indirectly by crowdsourcing information on specific topics like rating restaurants on TripAdvisor. Transaction value is identified in the frictionless enablement of buy-sell intentions or content sharing. Clearly, value grows with the number of participants, and the number of successful and positive interactions. The most prominent social networks (e.g., Facebook, Instagram, and LinkedIn) were born as transaction platforms on which the sharable value units are pictures, thoughts, or personal comments. Users can be consumers as well as producers of value units, and they are rewarded by other users who put their "like" or reshare content with their network of friends. Instant gratification is the currency used to reward user interactions. In the context of this book, Banking-as-a-Platform models are transaction platforms.

Hybrid platforms are also emerging as a combination of development and transaction types, which evolve in a continuous search to generate more differentiated value for all participants, expanding network effects and granting higher economic

opportunities. Hybrid types combine better and faster development of technical innovation with higher convenience and frictionless interaction among all participants. Blending a development platform into a transaction type, or vice versa, can take different levels of integration. For example, Facebook was born as a transaction platform to connect people to advertisers. Thereafter, Facebook exposed its APIs on a development platform to fast-track the external development of new features that could make user experiences more compelling and Facebook more competitive. Hybrid platforms will also represent the most valuable space in the platformisation journey of financial institutions.

1.6 ABOUT PLATFORMS AND INNOVATION THEORY

Both linear and non-linear businesses have to address innovation with technology. Development and transaction platforms just do it differently, especially on digital. Using new technology is not necessarily the same as fostering innovation.

Technology can be defined as any process by which a firm transforms information and data, human labour or economic capital into products or services of greater value. Therefore, digital advice, instant messaging, GPS location could all be defined as technology in the economy of this book. Technology is a process which evolves over time, both inside and outside individual firms. The introduction of new technology modifies the way firms operate or customers access services and products.

Innovation, instead, can be defined as any change in the use of technology which is often reflected in new business models. Such a change can be disruptive or sustaining. **Sustaining innovation** refers to improvements in product performance, being of an incremental nature or more radical, that improves the quality of firms' offer, fends off competition or increases commercial margins, by operating either on lower costs or on higher prices. **Disruptive innovation**, instead, might well result in worse product performance, at least in the near term. Such revolutionary products are usually cheaper, simpler, or more convenient to use and appeal to new customers or create new needs in the clientele. Disruption is not a one day to the next event, and its economic advantages are truly measurable only after the disruptive inflection point, when new technology offers a path ahead to generate further improvements (i.e., further sustaining innovation). That means a path towards higher and more sustainable margins. Typically, linear businesses face two challenges in their lifetime: (1) decide how much investment needs to be dedicated to sustaining innovation; and (2) recognise that disruptive innovation can be the ultimate cause of their failure, although such innovation might seem to be uneconomical in the near term. Financial services are not excluded from this classic dilemma: "How do sustaining and disruptive innovation interact to shape the future of industries?"

This question is central to Clayton M. Christensen's work on the theory of innovation [8–10], which well describes the existential competition in many linear industries. Christensen's insightful representation of the interaction between disruptive and

sustaining innovation (re-edited in Figure 1.7), defines an ideal relationship between industries and products across time and economic performance. There seems to be a fixed amount of innovation that a regular customer can absorb in any linear industry, hence a capped amount of money that clients are willing to pay to receive better products or services. That means the incremental value of innovation is asymptotic to consumers' perception of value.

Clearly, not all investors are equally constrained due to different preferences or spending capability. With regard to banking, this permits wealth management offers across segments to be tiered: retail, affluent, high net worth (HNW), and ultra-high net worth (UHNW). Markets or segments tend to saturate as time goes by, industries evolve, technology changes so does investors' behaviour: no further innovation can lead to higher business value. This is exactly when disruptive innovation has the highest chance of succeeding. Missing the timing by being too early might cause new offers to go unnoticed by consumers because, initially, disruptive solutions are often seen as a phenomenon confined to less-appealing low-margin clienteles (e.g., retailers) or distant markets (e.g., emerging economies). Yet, disruptive innovation can downshift the product paradigm across markets and segments, so that customers start favouring new solutions and embrace new offers. Established players might have no time to adjust their traditional workflows or business models. Market leaders might become laggards and new entrants gain momentum, climbing the hall of fame of successful brands (e.g., Apple vs. Nokia). However, new entrants have to reignite the cycle of sustaining innovation to stay relevant and strengthen their business margins by improving once very simple disruptive products. It is worth noting, modern innovation cycles seem to be shorter than ever as digital technology deploys new business models much faster, and grows them exponentially, as in the case of platforms.

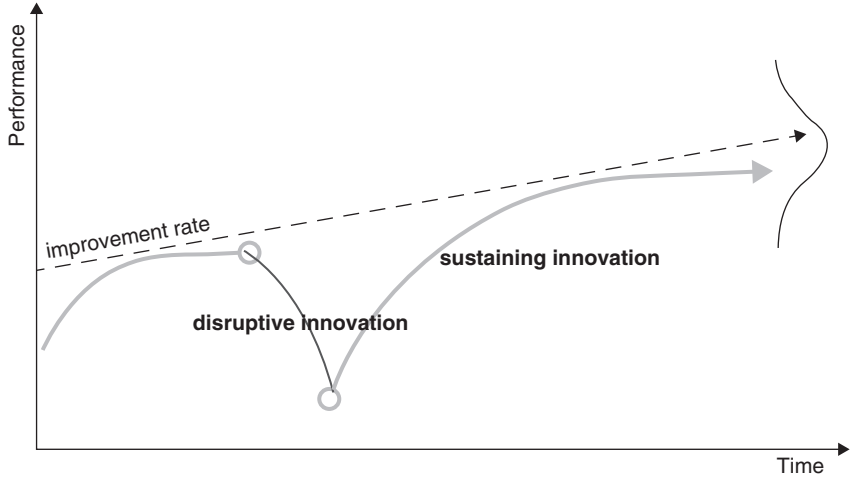

FIGURE 1.7 Disruptive and sustaining innovation in linear businesses

The success factor of disruptive offers does not lie in new products per se, but in their capability to capture client interest as they are ready and motivated. Clients do not perceive more added value in maintaining established consumption habits, or they are unable to consume further due to financial constraints. The timing of disruptive innovation against clients' readiness is of critical importance. Disruption cannot kick in if consumers feel that existing products and services are still sufficiently valuable. Convincing customers about something new is typically expensive, and often does not reconcile well with low-margin lower-quality offerings.

Do platform businesses, which are outcome-oriented, face the same hurdles of linear businesses, which are product-centric, when it comes to the relationship between disruptive and sustaining innovation?

1.7 SHIFTING THE PERCEPTION OF VALUE

Two decades after the original publication of Christensen's article in 1995, the word "disruption" is facing an inflationary process and has lost much of its original meaning. The term has possibly been overused to justify any innovation produced in Silicon Valley or Shenzhen. This is why Christensen, Raynor, and McDonald [11] decided to reset the tone of the discussion and started updating innovation theory in the light of platform economies. In their work, Uber was epitomised as an example of sustaining innovation, not disruption, meaning that Uber delivered only an incremental improvement over the existing taxi industry. That sparked a lively debate. Losing "disruption status" can be a serious offence in the valley! Christensen et al. state:

> *Disruptive innovations originate in low-end or new-market footholds. Disruptive innovations are made possible because they get started in two types of markets that incumbents overlook. Low-end footholds exist because incumbents typically try to provide their most profitable and demanding customers with ever-improving products and services, and they pay less attention to less-demanding customers. In fact, incumbents' offerings often overshoot the performance requirements of the latter. This opens the door to a disrupter focused (at first) on providing those low-end customers with a "good enough" product. In the case of new-market footholds, disrupters create a market where none existed. Put simply, they find a way to turn non consumers into consumers … A disruptive innovation, by definition, starts from one of those two footholds. But Uber did not originate in either one.*

In their review of Christensen's article, Moazed and Johnson [12] suggest that Uber, founded in 2009 as on-demand limo services, was indeed an example of disruptive innovation. They claim that UberX was surprisingly ignored in the paper. UberX, which is the Uber service for the mass market launched in 2012, would resolve Uber's disruptive innovation puzzle, as it is a classic low-end market offering. Most likely,

whether Uber is an example of disruptive innovation or sustaining change is not the key issue of the tender, as Moazed and Johnson also seem to recognise. The point is that most of the theory of innovation is designed around the linear transformation of value chains, in which value (and costs) accrue progressively along the manufacturing process. Instead, what makes platform innovation different from output economies, is that value generated for all participants no longer follows a linear model. Monetisation can be decoupled from the products and services primarily rendered. As such, Facebook does not monetise directly on the value units generated by the billion-plus user-base. The "transactions" are virtually free between the parties: messages are posted and friends reward them by liking them. Instead, Facebook's monetisation model is about advertising, leveraging on data for third-party advertisers or complementors. Therefore, while disruptive innovation down-shifts a market or allows an industry to restart from a lower point, platform innovation resets whole industries to harvest value which was not previously attainable. Successful platforms tend to substantially change the user perception of value to motivate clients (Figure 1.8).

What truly matters is how user motivation accrues on three different value-based scenarios: linear down-shifts, linear up-shifts, and exponential resets.

- **Disruptive innovation (linear down-shift).** Clients fail to understand the value of existing offerings or can no longer access such value (e.g., inexpensive Apple iPods versus expensive Pioneer Hi-Fis, or low-cost robo-advisors versus expensive financial advice). In this scenario, they are willing to embrace new offers, although initially they might have a lower face value (quality) but higher intrinsic value (perception).

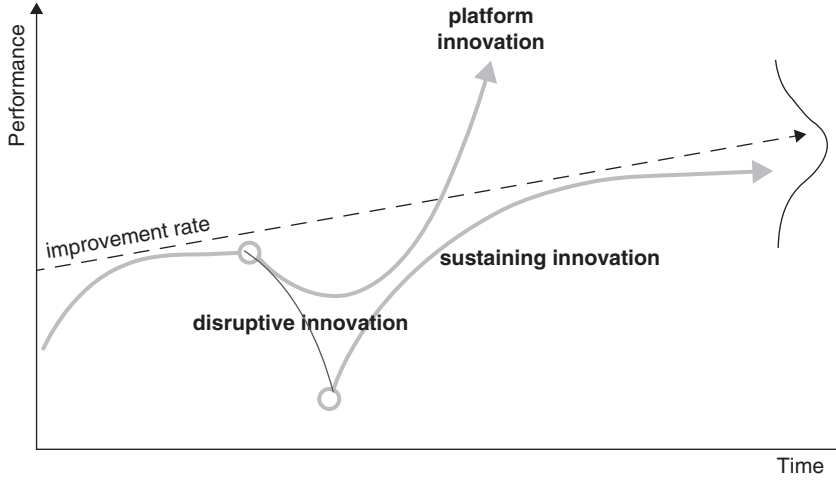

FIGURE 1.8 Disruptive and sustaining innovation in platform business

- **Sustaining innovation (linear up-shift).** Clients recognise that new products have incrementally higher value. In this scenario, they are willing to buy the products (e.g., Sony CD player versus Philips tape recorder, or financial brokerage versus holistic wealth management relationships) or upgrade to their newest versions (e.g., iPhone 12 versus iPhone 8).
- **Platform innovation (exponential reset).** Network effects motivate users (clients and producers) to interact on digital platforms. In this scenario, platforms orchestrate outcomes across entire ecosystems, instead of streamlining outputs on value chains (e.g., the whole commuting experience with UberX versus calling a yellow cab).

The common enablers in all innovation scenarios are the **changes in the generation and perception of value**. Therefore, researching how clients effectively perceive value is essential to identify the most effective techniques to digitise any industries.

1.8 BANKS AND FINTECH ON OUTCOME ECONOMIES

What are the main takeaways for financial services operating on platform economies?

Financial services are experiencing a near collapse of their traditional value chain, which is cornering the industry into unsustainable business models looking for hyper-scale. This often conflicts with the size of the jurisdictions in which they operate, the constraints imposed by regulations, and the low elasticity of demand in persistently low interest rate environments. Technology has been largely seen as an opportunity to march ahead of the progressive evaporation of revenues. Yet, is this sustainable?

Key banking revenues are usually generated through linear business interactions among institutional counterparts (Figure 1.9). Most banking operations are organised as siloed distribution channels of financial products. They feature a set of manufacturers and a list of distributors working with branches, human agents, or digital interfaces. For example, asset managers trade stocks and bonds on capital markets to build investment portfolios. These funds are made available to banks, which

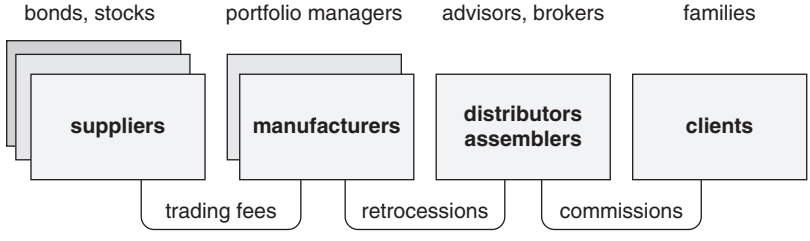

FIGURE 1.9 Distribution channels in banking and financial markets

"push" them to final clients through brokers or wealth management relationships. Professional intermediaries make money at every step of the process, collecting fees and commissions that cumulate to embedded costs borne by the final clients through financial transactions.

Notwithstanding the similarities to other industries, like music in the case of Apple, there are some relevant idiosyncrasies that make any attempts to change to outcome economies more complex. First, final clients do not consume banking products frequently: loans are often a "once in a lifetime" event, and investment decisions are not daily in most cases. This reduces the frequency of feedback loops needed to reinforce the perception of value and hinders the propagation of positive – and ethically balanced – network effects, no matter how good the users' experiences. Therefore, straight-through transaction platforms are harder to build in banking. Second, there seems to be a stickier price/demand relationship in banking compared to other industries. Not only are transaction costs not always transparent, but clients themselves have a hard time linking costs and value due to the biological unveiling of information asymmetries. As such, this limited capability to understand the final value of financial intermediation reduces the scalability of self-directed offers without access to offer-driven relationships that motivate users. Clients' difficulties and biases in their understanding of finance, particularly evident in wealth management and insurance, have resulted in the dependence on human relationships in the last mile of distribution channels that financial technology has a harder time to disintermediate than expected. This also explains why retail brokerage models that leverage the fear of missing out (FOMO) in up-trending capital markets tend to gain broader acceptance than robo-advisors' offer of digital wealth management. At least, until the markets falter. Ultimately, the race to zero prices through technology is a self-disrupting modality that will also put these firms out of business due to the lack of hyper-volumes, or alternative and less direct monetisation schemes.

As an example, Motif Investing was an innovative social trading platform, launched in 2010, to popularise thematic investing, empowering users to connect with trading ideas without the need for professional intermediaries. According to the CEO and founder Hardeep Walia [13], "We are the world's first investing platform made social. We want to take the discussions that are already happening offline and take them online. People like validation before making a purchasing decision. Our platform makes it possible to quickly and easily share actionable ideas with your personal and professional networks." Motif focused its efforts on letting advisors and investors build portfolios around specific thematics and economic trends, which could be shared across a community of platform participants made up of professional traders and retail investors. However, as the online brokerage industry headed to commission-free trading due to intense competition, while markets were largely trending up due to post-GFC central bank stimulus, the value-generating interactions on Motif Investing platform were not able to stand up against zero-free trading opportunities. Ultimately, Charles Schwab bought its technology in 2019, and clients were directed to other investing solutions. The lesson to take away from the downfall

of Motif Investing is that there is value in creating non-linear business models with innovative technology. However, until the platform operates inside output economies, there is not enough change in the perception of value among participants. Thematics are outputs disguised as outcomes, if not deeply anchored to transparent planning frameworks and goals-based investing principles. Similarly, robo-advisors are outputs disguised as outcomes, if not anchored to building financial awareness as opposed to investment automation.

This book addresses the delicacies of banking platform strategies by helping intermediaries to reset the definition of value with the aid of digital technology. This unlocks the development of financial propositions from outputs to outcomes inside transparent advisory relationships, anchored to goals. As such, Part III of the book will discuss how to re-engineer added-value industry segments to counter the race to zero prices.

1.9 CONCLUSIONS

Although platforms are not a recent phenomenon, digital technology is thrusting them forward to shape the fourth industrial revolution. Digital platforms generate value by facilitating interactions among participants without taking part in the transactions themselves, or the generation of products and services exchanged. They create unique value propositions for final users by opening traditional value chains, innovating the way value is exchanged, and expanding their attractiveness with the orchestration of entire ecosystems. This is about using data to transform linear businesses from their traditional output focus and letting them thrive inside outcome economies. The outcome-oriented engagement among platform core players generates positive network effects, which promote innovation and transactions for an exponential number of users and producers. Essentially, platforms transform users' perception of value, thus allowing innovative ways to monetise on user interactions.

TAKEAWAYS FOR BANKS AND FINTECH

This chapter addressed the following concepts:

- The platform revolution induces a progressive shift of traditional businesses from outputs to outcome economies.
- Inside output economies, linear businesses allow manufacturers and consumers to trade in products that deliver certain results (e.g., how many cars are sold in one year, or how many assets under management are collected for monetary funds).
- Inside outcome economies, non-linear businesses focus on a deeper understanding of user needs, and imagining alternative and personalised ways to achieve the desired results (e.g., how many commuters can go to work with car-sharing, or how many clients can achieve their personal, business, or financial goals).
- Added value is accumulated at every step of the process in linear workflows, augmenting the final costs borne by consumers. These value chains tend to be optimised by means of manufacturing and logistic decisions based on analytics.
- In platform economies, producers and consumers share "value units" that do not necessarily correspond to products. Non-linear value-generating interactions can trigger network effects, and increment ecosystem value almost exponentially.
- Banks and fintech face specific hurdles on outcome economies. Final clients do not consume banking products frequently (hindering the propagation of positive network effects). Also, banking exhibits stickier price/demand relationships that reduce the perception of value through the sole appraisal of convenience.
- The power of disruptive innovation is about a linear down-shift of consumption habits, while sustaining innovation enables a linear up-shift of value recognition. Instead, it is the substantial shift in user perception of value that allows platforms to exponentially reset entire industries.