PLATFORM
REVOLUTION

BONUS MATERIAL
The disruptive power of platforms is also transforming the lives of individuals in ways that would have been impossible a few years ago:

- Joe Fairless was a New York advertising executive who dabbled in real estate investing on the side. Teaching a real estate class on Skillshare, an education platform, introduced Joe to hundreds of eager young investors and helped him hone his speaking skills—enabling him to raise over a million dollars to launch his own investment firm and quit the ad business.

- Taran Matharu was a twenty-two-year-old business student living in London when he decided to write a book during the
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**FIGURE 1.2.** Some of the industry sectors currently being transformed by platform businesses, along with examples of platform companies working in those arenas.

Figure 1.2 also suggests the remarkable diversity of platform businesses. At a glance, there doesn’t seem to be much that companies like Twitter and General Electric, Xbox and TripAdvisor, Instagram and John Deere all have in common. Yet all are operating businesses that share the fundamental platform DNA—they all exist
platform business managers can do about them. But understanding value creation via positive network effects is the essential first step.

Gurley’s data showed that, by mid-2014, network effects were already beginning to drive Uber’s growth. When Travis Kalanick, CEO of Uber, sought seed funding in 2009, the size of the taxi and limousine market in Uber’s hometown of San Francisco was $120 million. Based on Uber’s own data, the market in 2014 appeared already to be three times as large and still growing. This threefold multiple would, all by itself, justify increasing Damodaran’s $5.9 billion valuation to the $17 billion value imputed by investors. Unaware of this insider information, Damodaran hadn’t adjusted his equations for network effects—as he graciously conceded in an elegant and well-reasoned response.

**DEMAND ECONOMIES OF SCALE**

The network effect represents a new economic phenomenon, driven by technological innovation. In the twentieth-century industrial era,
in which negative cross-side effects arise. Think about a platform that facilitates the sharing of digital media—music, text, images, videos, and the like. In most circumstances, a growing number of producers (music companies, for example) leads to positive benefits for consumers, but it can also lead to growing complexity and expense—for example, too many varying digital rights management forms to read and accept. When this happens, the cross-side effects flip from positive to negative, leading consumers to abandon the platform or at least reduce their usage. In a similar way, when the proliferation of messages from competing merchants on a platform site leads to unpleasant advertising clutter, the positive impact of expanding producer choice may be transformed into a negative cross-side effect that turns off consumers and damages the platform’s value.

We can foresee the arrival of growing pains at Uber as a result of increasing negative cross-side effects. If Uber attracts too many drivers relative to the number of riders, driver downtimes will go up; if Uber attracts too many riders relative to drivers, rider wait times will go up (see Figure 2.2, in which the resulting feedback loops have been inserted).

FIGURE 2.2. David Sacks’s napkin sketch of Uber, with negative feedback loops inserted.
petitor. As you can see, Amazon has by far outstripped Walmart in the number and variety of APIs provided.

The power of modularity is one of the reasons that the personal computer industry grew so quickly in the 1990s. The key components of PC systems were central processing units (CPUs) that provided the computation, graphical processing units (GPUs) that created rich images on the screen, random access memory (RAM) that provided working storage, and a spinning hard drive (HD) that provided large amounts of long-term storage. Each of these subsystems communi-

**FIGURE 3.1.** Amazon has far more remixes or “mashups” of APIs than Walmart. These span payments, e-commerce, cloud services, messaging, task allocation, and more. While Walmart optimizes logistics, Amazon also allows third parties to build value on its modular services. Source: Evans and Basole using ProgrammableWeb data. Reprinted by permission.
operators made solving the problem practically impossible. Chris DeWolfe, cofounder of Myspace, recalled the company’s flawed thinking in a 2011 interview: “We tried to create every feature in the world and said, ‘O.K., we can do it, why should we [open up to] let a third party do it?’ We should have picked 5 to 10 key features that we totally focused on and let other people innovate on everything else.”

Facebook didn’t make the same mistake. Like Myspace, it was initially closed to outside innovators. It opened to dot-com users in 2006. This helped Facebook begin a slow climb toward competitiveness with Myspace. The trend is reflected in Figure 7.1, which shows the average daily reach of the two platforms in terms of percentage of Internet users during 2006 and early 2007, when Myspace was still king.

When Facebook launched Facebook Platform to help developers create apps in May 2007, the big shift began. An ecosystem of partners willing to extend the capabilities of Facebook quickly took root. By November 2007, there were 7,000 outside applications on the site. Recognizing how this flood of new apps was enhancing its rival’s appeal, Myspace responded by opening to developers in February 2008. But the tide had already turned, as

shown in Figure 7.2. Facebook overtook Myspace in April 2008, and today it enjoys unquestioned supremacy in the social networking space.

Had Myspace opened itself earlier to contributions from a wider community of outside developers—especially those who had world-class technology for specific functions that Myspace wanted to build out, such as classified advertising, an effective spam filter, and user-friendly communication tools—they might have had a more robust product offering. Perhaps today Myspace and Facebook would still be competing on an almost equal footing.

At first glance, then, it would appear that Myspace’s problems arose from precisely the opposite direction as Wikipedia’s: the collaborative encyclopedia is struggling with the consequences of too much openness, while Myspace foundered as a result of too little. That’s true to some extent—but the story is more complicated than that. Along some other important dimensions, Myspace was actually too open.

For example, Myspace’s self-serve advertising feature created an all-too-accessible pathway for a significant amount of inappropriate content, including pornography available to platform users of any age.
influence over the daily operations of the platform. But, in general, the
sponsor has greater legal and economic control over the platform and
therefore a larger measure of power over its long-term strategy.

In some cases, both the platform manager and the platform
sponsor can be either a single company or a group of companies—
with further implications for issues of control and openness.10

Figure 7.3 illustrates four models for managing and sponsoring
platforms. In some cases, a single firm both manages and sponsors
the platform. We call this the proprietary model. For example, the
hardware, software, and underlying technical standards for the Mac-
intosh operating system and mobile iOS are all controlled by Apple.

Sometimes a group of firms manages the platform while one

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| **MANY FIRMS**      | Joint Venture Model | Shared Model |
|                     | *Examples:*        | *Examples:* |
|                     | CareerBuilder      | Android open source |
|                     | Orbitz             | Linux |
|                     | Visa (prior to 2007)| DVD |
|                     |                     | UPC bar code |
|                     |                     | RFID inventory control |
|                     |                     | standards |

**FIGURE 7.3.** Four models for managing and sponsoring platforms. Adapted from
“Opening Platforms: How, When and Why,” by Thomas Eisenmann, Geoffrey Parker, and
Marshall Van Alstyne.
Reporting Standards promulgated by the International Accounting Standards Board, a private organization based in London. We believe this trend will continue and that governments must rethink what they choose to regulate and what kinds of regulation private entities can provide more efficiently. One purpose of this chapter will be to suggest the circumstances in which regulators should consider intervention in platform markets and those in which platforms might best govern themselves.

**REGULATORY ISSUES RAISED BY THE GROWTH OF PLATFORM BUSINESSES**

Let’s consider some of the most significant regulatory issues that have come to the fore as a result of the rise of platform businesses over the last two decades.
Adjacent platforms. Platforms that serve similar or overlapping user bases.

Application programming interface (API). A standardized set of routines, protocols, and tools for building software applications that makes it easy for an outside programmer to write code that will connect seamlessly with the platform infrastructure.

Brand effects. The power of a highly positive brand image to attract consumers and lead to rapid growth of a business. Not to be confused with network effects.

Convex growth. See Metcalfe’s law.

Core developers. Programmers and designers who create the core platform functions that provide value to platform participants. These developers are generally employed by the platform managers—the brand names that are familiar to users, such as Apple, Samsung, Airbnb, Uber, and many others. Their main job is to get the platform into user hands and to deliver value through tools and rules that make the core interaction easy and mutually satisfying.

Core interaction. The single most important form of activity that takes place on a platform—the exchange of value that attracts most users to the platform in the first place. Therefore, platform design generally starts with the design of the core interaction. The core interaction involves three key components: the participants, the value unit, and the filter. All three must be clearly identified and carefully designed to make the core interaction as easy, attractive, and valuable to users as possible.

Cross-side effects. In a two-sided market, network effects created by the impact of user from one side of the market on users from the other side of the market—for example, the effects that consumers have on producers and the effects that producers have on consumers. Cross-side effects can be positive or negative, depending on the design of the system and the rules put in place.

Curation. The process by which a platform filters, controls, and limits the access of users to the platform, the activities they participate in, and the connections they form with other users. When the quality of a platform
is effectively curated, users find it easy to make matches that produce significant value for them; when curation is nonexistent or poorly handled, users find it difficult to identify potentially valuable matches amid a flood of worthless matches.

**Curation of participants.** See Trust.

**Data aggregators.** Outside developers that enhance the matching function of the platform by adding data from multiple sources. Under license from the platform management, they “vacuum up” data about platform users and the interactions they engage in, which they generally resell to other companies for purposes such as advertising placement. The platform that is the source of the data shares a portion of the profits generated.

**Enhanced access.** The provision of tools that enable a producer to stand out above the crowd and be noticed on a two-sided platform, despite an abundance of rival producers and the resulting intense competition to attract consumer attention. Platforms that charge producers fees for better-targeted messages, more attractive presentations, or interactions with particularly valuable users are using enhanced access as a monetization technique.

**Envelopment.** The process by which one platform effectively absorbs the functions—and often the user base—of an adjacent platform.

**Excess inertia.** The power of network effects to slow or prevent the adoption of new, perhaps better, technologies. When one or a few platforms are able to dominate a particular market because of the power of network effects, they may choose to resist beneficial innovations in order to protect themselves from the costs of change and other disruptive effects.

**Feedback loop.** In platforms, any pattern of interactions that serves to create a constant stream of self-reinforcing activity. In the typical feedback loop, a flow of value units is delivered to the participant which generates a response from him or her. If the units are relevant and interesting, the user will be drawn to the platform repeatedly, generating a further flow of value units and prompting more interactions. Effective feedback loops help to swell the network, increase value creation, and enhance network effects.

**Filter.** An algorithmic, software-based tool used by the platform to enable the exchange of appropriate units of information between users. A well-designed filter ensures that platform users receive only units of information that are relevant and valuable to them; a poorly-designed filter (or no filter at all) means users may be flooded with units of infor-
mation they find irrelevant and valueless, driving them to abandon the platform.

**Frictionless entry.** The ability of users to quickly and easily join a platform and begin participating in the value creation that the platform facilitates. Frictionless entry is a key factor in enabling a platform to grow rapidly.

**Linear value chain.** See Pipeline.

**Liquidity.** A state in which there are a minimum number of producers and consumers in a platform marketplace and a high level of interactions taking place. When liquidity is achieved, interaction failure is minimized, and the intent of users to interact is consistently satisfied within a reasonable period of time. Achieving liquidity is the first and most important milestone in the life cycle of a platform.

**Market aggregation.** The process whereby platforms provide centralized markets to serve widely dispersed individuals and organizations. Market aggregation provides information and power to platform users who formerly engaged in interactions in a haphazard fashion, often without access to reliable or up-to-date market data.

**Matching quality.** The accuracy of the search algorithm and the intuitiveness of the navigation tools offered to users as they seek other users with whom they can engage in value-creating interactions. Matching quality is critical to delivering value and stimulating the long-term growth and success of a platform. It is achieved through excellence in product or service curation.

**Metcalfe’s law.** A principle formulated by Robert Metcalfe which states that the value of a network grows nonlinearly as the number of users of the network increases, making more connections among users possible (a type of growth also known as convex growth). Specifically, Metcalfe’s law posits that the value of a network with \( n \) connected users is proportional to the square of the number of users \( (n^2) \).

**Multihoming.** The phenomenon of users engaging in similar types of interaction on more than one platform. A freelance professional who presents his credentials on two or more service marketing platforms, a music fan who downloads, stores, and shares tunes on more than one music site, and a driver who solicits rides through both Uber and Lyft all illustrate the phenomenon of multihoming. Platform businesses seek to discourage multihoming, since it facilitates switching—the abandonment by users of one platform in favor of another.

**Network effects.** The impact that the number of users of a platform has on
the value created for each user. “Positive network effects” refers to the ability of a large, well-managed platform community to produce significant value for each user of the platform. “Negative network effects” refers to the possibility that the growth in numbers of a poorly managed platform community can reduce the value produced for each user.

**Pipeline.** The structure of a traditional (non-platform) business, in which a firm first designs a product or service, then manufactures the product and offers it for sale or puts in place a system to deliver the service. Finally, a customer shows up and purchases the product or service. This step-by-step arrangement for creating and transferring value can be viewed as a kind of pipeline, with producers at one end and consumers at the other. Also known as a **linear value chain**.

**Platform.** A business based on enabling value-creating interactions between external producers and consumers. The platform provides an open, participative infrastructure for these interactions and sets governance conditions for them. The platform’s overarching purpose: to consummate matches among users and facilitate the exchange of goods, services, or social currency, thereby enabling value creation for all participants.

**Platform envelopment.** The process whereby one platform effectively absorbs the functions—and the user base—of an adjacent platform.

**Price effects.** The power of extremely low prices for goods or services to (temporarily) attract consumers and lead to rapid growth of a business. Not to be confused with network effects.

**Product or service curation.** See Matching quality.

**Re-intermediation.** The process whereby platforms introduce new kinds of middlemen into markets. Typically, re-intermediation involves replacing non-scalable and inefficient agent intermediaries with online, often automated tools and systems that offer valuable new goods and services to participants on both sides of the platform.

**Same-side effects.** In a two-sided market, network effects created by the impact of users from one side of the market on other users from the same side of the market—for example, the effects that consumers have on other consumers and the effects that producers have on other producers. Same-side effects can be positive or negative, depending on the design of the system and the rules put in place.

**Sharing economy.** The growing sector of the economy in which products, services, and resources are shared among people and organizations rather than having their availability limited to one proprietor. Often
facilitated by platform businesses, sharing economy systems have the potential to unlock hidden or untapped sources of value and to reduce waste.

**Side switching.** The phenomenon of platform users from one side of the platform joining the opposite side—for example, when those who consume goods or services produced on the platform begin to produce goods and services for others to consume. On some platforms, users engage in side switching easily and repeatedly.

**Spreadable value unit.** See Value unit.

**Supply economies of scale.** Economic advantages driven by production efficiencies, which reduce the unit cost of creating a product or service as the quantities produced increase. These supply economies of scale can give the largest company in an industrial economy a cost advantage that is extremely difficult for competitors to overcome.

**Switching.** The abandonment by users of one platform in favor of another.

**Switching costs.** The costs incurred by users when they abandon one platform in favor of another. These may be financial costs (for example, cancellation fees) or costs in terms of time, effort, and inconvenience (for example, the need to move information files from one platform to another).

**Trust.** The degree to which users of a platform feel comfortable with the level of risk associated with engaging in interactions on the platform. Trust is achieved through excellent curation of participants in the platform.

**Value unit.** The most basic item of value that may be exchanged by users on a platform—for example, a photo on Instagram, a video on YouTube, a craft product on Etsy, or a freelance project on Upwork. When a value unit is spreadable, it can be easily distributed by users both on and off the platform, thereby helping to fuel viral growth.

**Viral growth.** A pull-based process that encourages users to spread the word about the platform to other potential users. When users themselves encourage others to join the network, the network becomes the driver of its own growth.

**Virality.** The tendency of an idea or brand to be circulated rapidly and widely from one Internet user to another. Virality can attract people to a network, but network effects keep them there. Virality is about stimulating growth among people off-platform, while network effects are about increasing value among people on-platform.
Winner-take-all market. A market in which specific forces conspire to encourage users to gravitate toward one platform and to abandon others. The four forces that most often characterize winner-take-all markets are supply economies of scale, strong network effects, high multihoming or switching costs, and lack of niche specialization.