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## Management Review

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# Dethroning an Established Platform

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What can you do when a competitor has already established a leading platform? Learn from Apple's iPhone, Google's Gmail and Facebook — and how they overtook earlier market leaders.

BY FERNANDO F. SUAREZ AND JACQUELINE KIRTLEY

THE NEWEST ERA of the Information Age could very well be called the Age of Platforms, given the explosion of markets defined by platform competition. Increasing numbers of companies big and small, whether providing hardware devices, traditional software or software in the cloud, are attempting to become platform masters by releasing application programming interfaces that allow others to build software and hardware products or complementary services on top of their technology offerings. Platform competition is expanding into many markets and can be found today in a variety of industries and on different scales: from the nearly universal platforms of the Internet, credit cards and the telephone to newer Internet-enabled platforms such as Facebook, Skype, Google Maps and PayPal.

During the last decade, several key elements that constitute a “platform theory” have emerged.<sup>1</sup> These are now being taught in business schools and discussed by technology managers across the globe. But the



## THE LEADING QUESTION

How can companies successfully challenge dominant platform players in technology markets?

## FINDINGS

Challengers should take the following actions:

- ▶ Target an under-served segment of the overall customer base.
- ▶ Leverage adjacent platforms to boost demand.
- ▶ Differentiate their product to meet emerging needs.
- ▶ Expand the universe of potential partners by simplifying the business model for partners.

**Facebook, which overtook incumbent social networks MySpace and Friendster, initially aimed at Harvard University students. Facebook's early expansion took advantage of close links at specific colleges as the social network became available to students at an increasingly long list of schools.**

**ABOUT THE RESEARCH**

As part of an ongoing research project into the evolution of the smartphone industry involving substantial data collection at the industry, company and device level, we turned our focus to the dynamics of platform dominance. We conducted semi-structured interviews at several software companies that were early developers for the iPhone in order to explore the drivers to adoption during the platform's earliest days, which in this case we defined as the first six months of the App Store. Our interviewees represented a variety of roles, including founding entrepreneur/CEO, cross-platform software engineer, former Apple developer turned app architect, and Web and app development consultant.

The story that unfolded from these interviews, while consistent with existing platform theory in several aspects, also seemed to diverge from it in important ways. From this observation, we delved deeper into the existing literature on platform competition, looking for specific examples of platform companies that have successfully dethroned established competitors. We found interesting patterns that, if confirmed by future studies, could point toward the elements of a successful strategy for dethroning platform leaders.

existing theory does not fully explain the rise of some key players, such as Apple's iPhone, that have entered their industries relatively late and have succeeded in dethroning powerful incumbent platforms. The experiences of these "platform dethroners" offer several important lessons for companies entering or competing in platform markets. (See "About the Research.")

**Some Key Elements of Platform Theory**

A platform is a good or system providing a technological architecture that allows different types of users and complementary business partners (often called "complementors") to connect and benefit from the platform's base functionality. For example, a game console is a platform for users to socialize and play using software (games) developed by a myriad of companies. The challenge for a new game console is that software developers don't want to create games for a console unless there are enough console owners that can use the games — and players don't want to buy a console unless there are enough games to play on it. At its most basic level, platform theory, for both pioneering platforms and challengers to existing markets, is largely about how to deal with this Catch-22 problem.

**Attracting Users.** Key to the success of platforms are network externalities, or the degree to which a platform's attractiveness grows with the "installed base" or number of consumers using it.<sup>2</sup> For a social network, that means that the more people who are currently part of the network, the more other people want to join. The size of the installed base becomes a key factor in the demand for a product or service, often more important than price or quality. Building a large installed base can seem like an insurmountable obstacle for platform challengers. Therefore, platform sponsors that enter a new market space try to build their installed base as quickly as possible. Platform theory proposes that to achieve this goal, platform companies can use subsidies to incentivize users to join, differentiate through technology features or enter the industry early enough to draw in users before competition increases.

**Attracting Complementors.** Platform theory began with research into platforms of manufactured goods (such as automotive platforms) and then of traditional software products. These early studies

stressed the role of complementors — external companies or entrepreneurs that build products and services to run on a platform, thus increasing the platform's attractiveness. Most platform companies understood the importance of complementors and devoted significant resources to supporting their complementor network even from the beginning. For instance, every major game console to launch in the United States in the last decade has done so with a game produced under license from the National Football League, usually the latest *Madden NFL* by Electronic Arts, ready to play. Since the installed base of the platform defines a complementary product's potential market, complementors are naturally attracted to those platforms with the largest installed base. Platform sponsors place great emphasis on providing technological support for their complementor network in such forms as software tools, technical training and documentation, technical support and conferences.<sup>3</sup>

**Leaving Competing Platforms Behind.** Platform theory has also offered a couple of specific strategies that platform sponsors can use to out-compete rival platforms. One, technological superiority, simply means using a better technology than the competitors to provide features or functionality that does not yet exist in rival platforms. For example, Skype's proprietary voice-over-Internet protocol, known in technical circles simply as "Skype protocol," gave the company an important early quality advantage over competing VoIP providers that used the more common session initiation protocol. A platform can also bundle the functionality of another, typically smaller and financially weaker, platform, thus making the latter virtually irrelevant to the market. Platform theory calls this "platform envelopment."<sup>4</sup> For instance, when Microsoft added Internet Explorer for free to its Windows operating system, Netscape Navigator found itself virtually irrelevant to Windows users, who no longer needed to download Navigator software to surf the Web.

**Four Lessons From Successful Platform Dethroners**

Envelopment is a well-known method for latecomers to dethrone a platform. But it's not the only way. Here are four additional strategies drawn from the

ways platform latecomers such as Apple and Google have succeeded.

**1. Find a distinctive and underserved segment of users.** If users are attracted to platforms with a large installed base due to the power of network effects, how can platform challengers that start with a very small or nonexistent installed base persuade users to join their nascent platforms? Some do it by questioning a key assumption behind the meaning of a “large installed base” — and working smart to capitalize on the opportunity this creates. The theory of network effects largely assumes that all users of an installed base are equal, in the sense that one additional user generates the same value for the rest of the users in the network, irrespective of who the new user is or where that user is located. What matters is the increase in the size of the network.

However, the total number of users may not matter as much as the number of users with similar needs and interests. Customers who are senior citizens, for instance, may be less concerned with how many users are on a platform than they are with how many other senior users there are; they may gain little from the many teenagers in the network. In a way, this resembles a traditional market segmentation story, but a key difference is the fact that users in a platform market are connected by their use of a shared technology that allows them to benefit from network effects. This means that a newcomer platform sponsor that focuses on a specific group of users can use the power of network effects to get traction for its new platform within that group of users, even though its user base may continue to be very small relative to the overall installed base of users. The lesson here is that a new entrant to the market can gain significant traction by focusing on a user group that is distinctive and underserved by the dominant company. The trick is to offer a platform that is so customized to that particular segment that it produces a tightknit network that feeds on itself and grows.

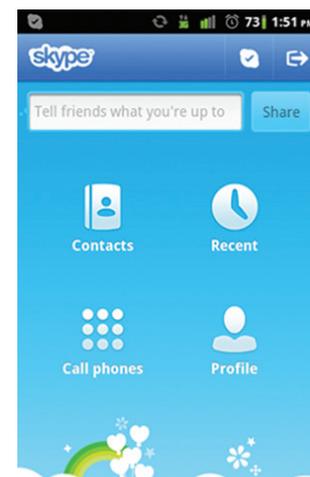
Apple did this by focusing on the consumer, not the business, market with the original iPhone. Smartphones were sophisticated, expensive high-end products, so handset makers had initially targeted business customers when designing and selling their smartphones. However, Apple pro-

duced a high-end device positioned for the consumer market rather than for business. When introducing the iPhone, Apple’s then-CEO Steve Jobs described it not as a communications and productivity device but as “the best iPod we’ve ever made.”<sup>5</sup> The first iPhones did not include standard business applications like Microsoft Exchange Server for push e-mail, calendar and contact synchronization. At launch, AT&T did not even allow corporate accounts for iPhone contracts.

By focusing on the consumer market, Apple sidestepped direct competition with longstanding business tool platforms BlackBerry (which at the time held a 70% share of corporate smartphone purchases<sup>6</sup>), Windows Mobile and Symbian. By exploiting a then-underserved market space — consumers interested in smartphones — Apple was able to grow its user base rapidly, despite having a much smaller overall customer base at the outset.

Before Apple tried this, Facebook had used a similar approach to dethrone then-incumbent social networks MySpace and Friendster. Facebook launched in February 2004, solely aimed at Harvard University students. At that time, two dominant platforms were already thought to own the social networking space: MySpace, with 1 million users, and Friendster, with more than 2 million users. By focusing its efforts on a tightknit college community, Facebook was able to attract half of the undergrads at Harvard University within the first month. Facebook’s early expansion continued, taking advantage of close links at specific colleges as the social network became available to students at an increasingly long list of schools. Expansion to high school networks was then followed by expansion to international schools, helping the platform reach more than 5.5 million users in less than two years. Only after gaining enough traction and growing its installed base with its initial school-centric strategy did Facebook open up registration so anyone could join, in September 2006, and then, in May 2007, it launched the Facebook Development Platform for complementors.<sup>7</sup>

**2. Leverage your existing platforms.** Some successful platform dethroners used what we call platform leveraging. Leveraging entails taking advantage of the fact that companies today may have



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multiple platforms. A dethroner can use another distinct platform it owns in order to gain traction for the new platform. Leveraging does not require bundling all the features of the other platform into the new one and does not nullify the other platform. Instead, platform dethroners carefully design the interfaces and functionality of the new platform in order to take advantage of their existing installed base and boost demand and attractiveness for both platforms. (This differs from platform envelopment, in which platform A swallows and nullifies platform B by bundling into A the same functionality offered by platform B. It also differs from a platform complementor relationship in that here both platforms are owned by one company.)

Apple increased the attractiveness of the iPhone by leveraging its installed base of iTunes, a platform in itself and already, when Apple launched the iPhone, the largest music retailer in the U.S. Consumers used an iTunes account to manage their iPhone from a computer and purchase applications as well as music. Apple also leveraged its award-winning design aesthetic for the iPhone's icons, graphics and physical form, maintaining a design consistency and common user experience with the iPod and other Apple products. Apple didn't just match the outside; smartphone software began to act, and interface, like computer software. For instance, iPhone's Visual Voicemail interface was based on an e-mail user experience rather than old-fashioned telephone voice mail. Instead of calling in to a linear playback system, users view an inbox-like list of who called, when and the duration of the message; then they can review, delete or respond to messages in any order they want.

Microsoft, Apple's oldest rival, took a similar page from the strategy playbook when it launched its Kinect sensor device in 2010 as Kinect for the Xbox 360, leveraging its existing Xbox game console platform. During its first 60 days on sale, Kinect sold 8 million units, causing Guinness World Records to declare it the "fastest-selling consumer electronics device." But by giving Kinect an identity as a separate platform — rather than launching it just as a feature of Xbox — Microsoft set itself up to be able to continue leveraging multiple platforms in the future. Keeping the Kinect distinct from Xbox allows Kinect to be not just a device for controller-free gaming but a platform for controller-free computing. Several

months later, Microsoft released a free Kinect for Windows software development kit to leverage the large installed base of Windows users and complementors. Windows developers can now build software for the PC that uses Kinect as an input device instead of a mouse or keyboard.

**3. Differentiate based on emerging needs.** Differentiation by producing a product or service superior to those of competitors has been a cornerstone of competitive strategy for many years. Proponents of "blue ocean strategy"<sup>8</sup> have further argued that a differentiated product need not be better across the board and that companies can differentiate by focusing on only a few attributes highly valued by target customers while de-emphasizing other attributes less crucial to them. Platform theory has also highlighted the importance of technology-based differentiation in the competitiveness of a platform.

Successful platform dethroners have often managed to achieve a powerful type of differentiation by focusing not necessarily on what customers value today but on what the platform dethroner does better than competitors that could drive demand tomorrow. By focusing primarily on the overlap of the platform company's existing capabilities and a careful analysis and understanding of the trends on the target users' side, a platform dethroner can enter the market with a novel platform that appeals to a growing group of customers and that cannot be easily imitated by competitors.

The iPhone's differentiation at launch was not based on the traditional differentiation parameters of the smartphone industry (larger QWERTY keyboard, number of bands and frequencies, better antenna/voice quality, etc.). Instead, Apple focused on taking advantage of its unique strengths in user interface, styling and branding, placing a low priority on those parameters outside Apple's strengths. By using a multitouch display, accelerometers and proximity and light sensors, Apple unveiled a totally new interface for smartphones while adding functionality within a streamlined, one-button design. However, the device used off-the-shelf technology for traditional wireless functions that were considered key by established players. For example, the original iPhone's antenna was a standard part with very low signal strength through the device's stylish metal

case — which meant the original iPhone wasn't very good as a phone; one *PC Magazine* article, for example, referred to it as “Great i, Lousy Phone.”<sup>9</sup>

Google offers another example of differentiating based on emerging needs. When Google entered the webmail market on April 1, 2004, with an invitation-only strategy, the webmail market already had a number of dominant players. Hotmail and Yahoo!, firmly entrenched market incumbents, had perfected and implemented most of the key features of a good Web-based e-mail program. How could Google differentiate Gmail? The company did it in part by focusing on what Google had that neither Yahoo! nor Hotmail could easily replicate: arguably the largest network of server farms on earth. This allowed Google to blow its competitors out of the water in storage by offering 1GB of storage capacity to each new Gmail user — 500 times more space than top incumbent Hotmail offered. As digital storage requirements continued to increase, Google's approach resulted in a huge initial advantage over its competitors.

**4. Simplify the business model for complementors.** When it comes to securing the allegiance of complementors, platform theory has placed the emphasis on the technical aspects of the platform architecture and its corresponding interfaces. Platform companies woo complementors by offering technical support, by working alongside them to define and clarify standards or by investing a priori in the platform technology as a show of commitment. For example, in their 2002 *MIT Sloan Management Review* article “The Elements of Platform Leadership,” Michael Cusumano and Annabelle Gawer enumerated how platform leaders such as Intel support and work closely with complementors.<sup>10</sup> Intel has gone so far as to send its own engineers to work with the R&D staff at promising complementor companies to build up the platform's ecosystem.<sup>11</sup>

Providing technical support to complementors is important. However, platform dethroners often do more than help complementors with their technology: They help potential partners create viable business models and show them an easy path to revenues and profitability. Such a strategy expands the number of complementors not only because a



Microsoft leveraged its existing Xbox game console platform when it launched its Kinect sensor device in 2010 as Kinect for the Xbox 360.

company is able to persuade complementors to join its platform but also because complementors can now clearly see revenue and profit in the platform dethroner's ecosystem. In the case of the iPhone, the segment of the network that Apple targeted included a kind of consumer that app entrepreneurs, the complementors, had not been able to reach easily before. The people buzzing about the iPhone for months before its release were not the smartphone business buyers or the bleeding-edge technophiles but, as one app entrepreneur we interviewed described them, “creative, successful, not necessarily young ... ready-to-try-style early adopters.” People who would camp out in front of a store to buy the iPhone were the kind of people who would spend money on an application that helped them pick out a bottle of wine or use their phone to check in to their favorite social networking site.

By targeting consumers, the iPhone opened the door to new app content that business users wouldn't, or couldn't, have paid for. Many smartphones, especially BlackBerry phones, were supplied by a user's company, which also paid the phone bill. No employee wants to explain to the company accounting department why he or she downloaded a wine-buying app called Drync or what client account should be billed for his or her RunKeeper exercise app. By turning the focus of its smartphone user base away from business, Apple opened the door for personal, even frivolous apps. The consumer market may not have as great a willingness to pay for a specific application as the business market, but it does have a much larger appetite for the little things. Simple apps requiring less capital and resources to develop meant money could be made at a low sales price or that an app could be built just for fun. In December 2008, six

months after the App Store opened, 63% of the 9,961 apps that had been launched in the App Store were built by individual developers, and more than half of those were available for free.<sup>12</sup>

Consistent with the opportunity it was giving to small and individual complementors, Apple made it as easy as possible for them to enter the industry by lowering both technological and financial barriers to building apps for the iPhone platform. An individual could join the iPhone developer community for \$99 per year, receiving access to all of the software necessary to build an app. Other smartphone platforms required expensive software developer packages. Developers for Windows Mobile apps, for instance, needed to purchase a copy of Microsoft's general development tools (Visual Studio), which at the time could cost as much as \$1,000 per user for the Professional version. Then they would need to download a separate Windows Mobile SDK and a Developers' Toolkit. According to one early individual iPhone developer we interviewed, "It was easy for geeks to just build for iPhone. The hard part was owning a Mac ... Instead, [for Windows Mobile developers] it starts to sound like work."

The single model and sleek interface of the iPhone platform also made it significantly more attractive to complementors. Complementors developing for the iPhone needed to build only one version of their app, with one user interface and no concern that some handsets might have a different keyboard type or, potentially more problematic for a developer, that different phone models might use different microphone or camera technology. One developer we interviewed who worked on a voice-to-text app found that developing for other mobile platforms often ended up being very frustrating and time-consuming. For instance, while the Nokia N95 and N96 handsets looked almost the same to users, the technical differences were enough to make it more expensive for developers to support both models. In apps where thousands of lines of code are device-dependent, "almost the same" meant multiple person-weeks of developer time to adapt to each different smartphone model.

Writing the app was only the first step. Developers then needed to test that everything worked properly on the device. Apple made testing easy by letting developers load their newly written app di-

rectly onto the developer's own iPhone. For Symbian, BlackBerry and Windows Mobile complementors in 2007, testing could be done only through a simulated phone on the developer's computer. This could never emulate 100% of the device environment, and thus developers had to test their software in every potential handset model if they wanted to make sure it ran on the platform's entire installed base. In contrast, Apple developers could download their work right onto the iPhone they had in their hand and test their software — not only on the device but also live on the carrier's network.

Platform dethroners often go beyond the technology front to help and attract complementors. Facebook, for instance, opened its platform to developers in 2007, providing them for the first time with access to rich social data through its application programming interfaces and Facebook Query Language. Facebook decided to charge nothing to developers to let them use its platform, providing the interface for developers to charge their customers directly. The response was phenomenal. In three months, the number of third-party applications on the Facebook platform had reached 3,000, and a few months later the apps were responsible for more than one-third of Facebook traffic.<sup>13</sup>

Using its App Store, Apple did something similar to attract developers to the iPhone platform, although Apple charged developers for what it provided. Individual smartphone app developers typically had no experience working with supply chains and logistics, which can get complicated when telephone operators are involved. However, most app developers did have experience with iTunes as customers. So once an app was accepted into the App Store, Apple took care of everything. Developers did not need to worry about uptime or bandwidth on a download website because customers downloaded apps directly from Apple. Nor did developers need to worry about properly creating and managing user accounts, because Apple already required iTunes accounts for everyone with an iPhone. They did not need to worry about handling money or working with credit card agencies, because Apple took care of getting money from the user and giving the developers their agreed-upon percentage. The App Store even provided a limited amount of free marketing through "new" and "top"



**The single model and sleek interface of the iPhone platform made it significantly more attractive to app developers, who needed to build only one version of their app.**

lists that increased visibility and sales with no developer effort. In contrast, developers for other smartphone platforms had to get their apps approved by the telecom carrier, not just the platform owner, and then find their own distribution. Third-party app stores like Handango.com existed for other smartphone platforms, but stores operated by the platform sponsor itself either did not exist or were unknown to developers.

## Next Steps for Platform Dethroners

These recent experiences of platform companies that entered the market late and were still able to succeed and dethrone powerful incumbent platforms provide us with additional insights to enhance our understanding of platform markets. But they also point to the continuing challenges platform companies face in fast-changing technology markets. Our discussion has focused on how new entrants can dethrone dominant players; however, once successful, staying successful and fending off others who are trying to dethrone you can be a real challenge. Maintaining dominance requires constant attention to the needs of users and complementors so they remain motivated and faithful to the platform.

That challenge can be met in part by using the same strategies that allow an entrant to dethrone the previous dominant platform. For instance, Apple did well by leveraging the power of iTunes. With its already large user base in 2007, iTunes gave the iPhone an important boost early on. However, platform leveraging implies that iTunes is a separate platform that will continue to be nurtured and grown. This in turn means that other smartphone platforms, new or old, can also enjoy the benefits of linking to iTunes — and Android, Google's smartphone platform and Apple's main rival in this space, has done just that. Dethroning a dominant platform is difficult, but it is equally difficult to maintain the growth momentum vis-à-vis new challengers. Other entrants may have emerged or may be waiting in the wings to try their own play-book, out to dethrone the dethroner.

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