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Four Essential Capabilities for Successful Platform Development

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We know what established platforms do to remain successful, but what could aspiring platform firms do to become successful? Based on a three-year longitudinal study, we identify four essential capabilities required for successful platform development.

The world's most valuable public companies today are built on digital platforms. Platforms have become the dominant business model in a growing number of industries. However, with every successful platform, there are numerous failed attempts that do not make the headline. Most existing studies are based on snapshots of successful platforms in established industries, but with only limited attention to the early stages of platform formation and development when the key players and the market boundaries are still unclear. This is largely the result of methodological challenges in identifying and then tracking a platform before it takes full shape. As a consequence, we still know surprisingly little about how platforms emerge and what essential capabilities they need to become successful.

Based on our three-year study of the nascent *tele-rehabilitation through gaming* industry, we followed the emergence and development of a platform from its inception. The key findings has been published in [Platform development: Emerging Insights From a Nascent Industry](#) in the *Journal of Management*.[i] Our research identified four essential capabilities and illustrated how a platform firm integrated selected roles to deploy these capabilities by altering its boundary during different stages of platform formation and development.

Platform Emergence in Nascent Industries

The success of a platform depends not only on the leadership of the platform firm, but also the support of its complementors and the effective coordination between them. Yet it is often unfeasible to visualize these elements accurately before that platform has emerged. An established platform and its ecosystem are relatively stable, but an emerging platform in a nascent industry can experience constant change, as the platform firm and its complementors explore new value creation activities and new ways to coordinate them. This significantly limits our ability to understand how platforms actually emerge and then evolve in nascent industries, as well as the ability of entrepreneurs to draw on the experience of already successful platforms.

Our research is based on the emergence of a new platform in the nascent *tele-rehabilitation through gaming* industry, which is enabled by the concurrent advances in rehabilitation therapy knowledge and action game technologies. Long-term clinical treatment of victims of strokes and other debilitating afflictions can be exceedingly expensive. Using specially designed action games for rehabilitation offers improved clinical results at lower costs compared with traditional approaches. This nascent industry has attracted great interest from a broad range of potential beneficiaries.

The Four Essential Capabilities for Successful Platform Development

The success of a firm depends on its abilities to sense opportunities (and threats) and reconfigure its business model and resource base to seize these opportunities.[ii] For a platform firm, the process involves a wide variety of capabilities and activities that pertain to creating the core component of the platform, coordinating its complements, growing the market, and capturing value by doing so. Our research identified four essential capabilities that are vital for successful platform development (see Figure 1).

Figure 1: Four essential capabilities for successful platform development
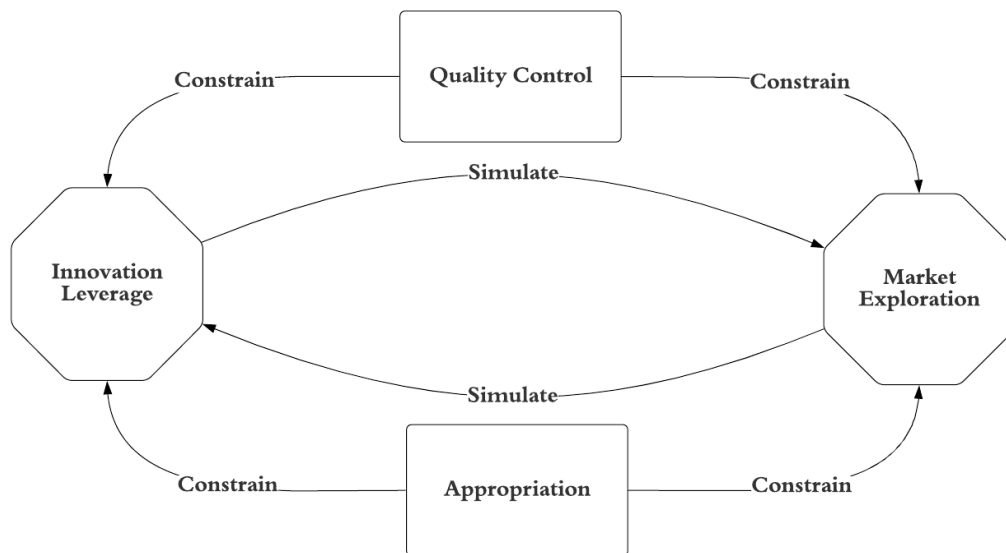
Innovation leverage (i.e., *the ability to identify and develop the core component to be shared with complementors to produce innovation outputs*) is usually the starting point for platform emergence. Then innovation leverage and **market exploration** (i.e., *the ability to explore different market routes to expand demand*) will ensure that the platform continues to attract users and complementors, thereby generating more innovation outputs and more market demand for those outputs, aiming to trigger the so-called network effect. Two other essential capabilities, **quality control** (i.e., *the ability to manage the quality of all innovation outputs*) and **appropriation** (i.e., *the ability to profit from innovation outputs and reward complementors accordingly*) create functional mechanisms to constrain the growth of innovation output and market demand for the long-term health of the platform ecosystem. These two capabilities may temporarily discourage some complementors and users, but they help foster innovation outputs of higher quality, thereby driving platform development further by instilling confidence in both complementors and users.

The effective deployment of these four capabilities requires the platform firm to alter its boundary and integrate selected roles within the ecosystem at different stages of platform development. Our research (please see Text Box for a summary) demonstrates that this entrepreneur initially focused on therapy knowledge development before launching a start-up as a *game publisher* and *therapy knowledge provider*. In collaboration with others, she then set up a *middleware designer firm* and a separate *game studio* to develop the game engine and a series of prototype games.

The appropriate planning of firm boundaries improves the odds of deploying the desired capabilities and developing successful platforms. Contrary to the popular view that the platform firm shrinks its boundary inwards in order to free up opportunities and attract increased support from

complementors, our research shows that, sometimes, the platform firm also expands its boundary outwards and deploys new capabilities to fill critical gaps in the ecosystem.

Leadership Insights

Our findings offer a processual view of a business venture in a nascent industrial setting that deployed four essential capabilities for its platform development. It highlights three insights for other business leaders and entrepreneurs who are interested in developing their own platforms.

First, although all four capabilities are essential for platform development, their sequence and timing of deployment can vary for different platforms. For instance, some social media platforms (e.g., Facebook and TikTok) initially focused on innovation leverage and market exploration to achieve rapid growth while relying primarily on funding from investors to sustain and expand their operations. Profit and reward for their investors and the complementors only came later, and even today, they still struggle with the capability (or genuine desire) of quality control (e.g., fake news; the protection of minors). Further, the ongoing government interventions in this sector indicate that some social media giants, although enormous in size and highly profitable, have not yet successfully deployed all their essential capabilities so as to sustain and further develop their platforms. In our study of the *tele-rehabilitation through gaming* sector, meeting the required quality standards is a prerequisite to enter the highly regulated healthcare market, hence the early deployment of quality control capability.

Secondly, the ability of the platform firm to both strategically accelerate and decelerate the pace of platform development is equally important. Innovation leverage and market exploration can stimulate each other, as increases in users will attract more complementors and vice versa. However, the importance of decelerating platform development through appropriation and quality control is often overlooked. These capabilities are essential for the long-term health of the platform ecosystem. Social media platforms' inability of appropriation and quality control has induced government interventions around the world. Earlier this year, the Australian government introduced a law that enables news companies to negotiate as a bloc with Facebook and Google for content appearing in their news feeds and search results, forcing these platforms to better appropriate their complementors. Facebook has also been accused of putting profit before people and destabilizing democracy, highlighting the critical role of quality control for the long-term future of that platform. Such interventions have also happened in certain sharing economy platforms (e.g. Uber and Airbnb).

Third, platform firms are usually expected to shrink their firm boundaries inwards over time and focus only on core activities while leaving other opportunities to complementors. However, our research suggests that the boundary decisions of platform firms should be capability driven, as sometimes they need to expand their boundaries outwards to deploy critical capabilities. For instance, through a series of acquisitions (e.g., NabeWise, Localmind, Accomable, Luxury Retreats International, and Tilt), Airbnb has integrated new services, including city guide, location-specific information, accessible travel, villa rental, and social payments to create new segments (i.e., market exploration), provide better services (i.e., quality control), add more product categories (i.e., innovation leverage), and enable more payment options (i.e., appropriation), and thus further enhance its core hospitality platform.

Our research illustrates platform emergence and development as a process, through which platform firms deploy four essential capabilities to accelerate and decelerate platform development. Platform firms do not always focus only on their core innovation assets or on constant rapid growth. Business leaders and entrepreneurs need to know when to accelerate and decelerate to ensure the long-term health of both the platforms and their wider ecosystems.

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Text box – An Illustrative Case Study

Our case study became a pioneer in the UK's nascent *tele-rehabilitation through gaming* industry. Based on comprehensive data gathered from interviews, field observations, and archival evidence over a three-year period, we illustrate the emergence and development of a platform ecosystem in four stages.

- *Stage I: Research (pre-business)*: the academic entrepreneur focused on studying and categorizing therapy knowledge for tele-rehabilitation through action games, prior to the formation of the platform.
- *Stage II: Business Formation*: the platform firm was founded as a game publisher and therapy knowledge provider. As a publisher, it started to deploy the capabilities of **market exploration** and **appropriation**, to identify profitable routes to market for such products.
- *Stage III: Platform Emergence*: two affiliated firms (i.e., a middleware designer and a game studio that develop the game engine and some prototype games respectively) were founded with collaborators. The platform started to emerge, as the firm deploys the capability of **innovation leverage** by successfully integrating its therapy knowledge into the game engine.
- *Stage IV: Platform Development*: the platform grows as other game studios join the ecosystem to develop tele-rehabilitation games using its game engine. Meanwhile, the platform starts to deploy the capability of **quality control** to ensure all games meet minimum standards, and it continued to deploy the capability of **appropriation** with a set of agreed-upon revenue models to incentivize qualified complementors to work with the platform firm.

Overall, our results show how the entrepreneur defines and refines its firm boundaries by integrating selected roles in the industry (i.e., as therapy knowledge provider, publisher, middleware designer, and game studio) at different stages, thereby enabling it to deploy the four essential capabilities required to facilitate platform formation and development.

i X. H. Shi, F. Li, and P. Chumnumpan (2021). Platform Development: Emerging Insights from a Nascent Industry. *Journal of Management*, 47(8):2037-2073. doi:10.1177/0149206320929428.

ii D. Teece, M. Peteraf, S. Leih (2016) Dynamic capabilities and organizational agility. *California Management Review*, 58 (4): 13-35; D.J. Teece, G. Pisano, A. Shuen (1997) Dynamic capabilities and strategic management. *Strategic Management Journal*, 18 (7):509-533