

The Essence of Open Innovation: From the Perspective of Value Creation

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Figure 1 JR West's Special Rapid Service train.
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Figure 2 Segway personal transporter.
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1. Introduction

After gaining approximately 30 years of hands-on experience in technology development at private companies, I transitioned to academia in 2022 where I am now engaged in research and education in business administration, particularly in the field of innovation management. In this article, I will explore the concept of Open Innovation (OI), which has been attracting significant attention in recent years, from the perspective of both my professional and academic backgrounds.

The term “Open Innovation” itself is now widely recognized. However, in the actual business field concerns persist such as “it’s difficult to produce results” and “how should we actually proceed?”. I faced the same challenges during my time as a corporate manager of the R&D division, but after moving to academia, I discovered that a wealth of systematic knowledge has been accumulated regarding the determinants of success or failure of OI. In this article, drawing on this knowledge, I will outline the essential elements for guiding OI toward success.

2. What Is Innovation?

Before discussing OI, it is important to note that innovation is not the same as “technological innovation.” As an engineer myself, I have long valued technology. However, in the context of management studies, innovation refers not simply to new technologies or inventions themselves, but to outcomes that bring value to society by combining existing elements.

When explaining this, I often cite the example of JR West’s Special Rapid Service “Shinkaisoku” (Figure 1). The Shinkaisoku combines existing train cars with existing tracks originally intended for freight and limited-express trains, yet it created significant value by connecting Kyoto and Osaka in under 30 minutes. It is a classic example of “not a technological innovation, but an innovation.”

On the other hand, in the same field of mobility, the Segway (Figure 2) achieved a technological innovation—a two-wheeled self-balancing mechanism using a six-axis accelerometer—but this technology was not accepted by society as having sufficient value and did not achieve widespread adoption. This contrast illustrates that innovation and technological innovation do not necessarily coincide.

So, what exactly is the “value” referred to here? In business administration “value” in principle is assumed to be economic in nature – that is, measurable in monetary terms (profit). No matter how much customers may praise a product, it cannot be considered to have economic value unless they pay an additional price for it. Some may find this way of thinking unsettling, but it is not a matter of right or wrong. We must understand that modern capitalism operates according to these rules. Therefore, innovation is the creation of economic value and its starting point does not necessarily have to be technology.

3. Open Innovation (OI)

3-1. Concept

OI is an approach that intentionally connects internal and external resources to generate innovations that would be difficult to achieve within a single company alone. Henry Chesbrough proposed this concept in 2003 and laid the groundwork for its systematization^[1]. According to Chesbrough’s analysis and observations, the spread of OI is attributed to a combination of social factors such as the decline in the cost of accessing information due to the proliferation of the internet, the increasing sophistication, complexity, and modularization of products, intensifying competition involving emerging economies and rising labor mobility (Figure 3).

The fundamental concept of OI is to first define the value to be realized, achieve it quickly through OI, and secure first-mover advantage. The resulting profits are then shared with partners. OI is not about “jointly exploring the unknown,” but rather the idea of “defining the value to be created and collaborating with external parties to realize it early.” The majority of successful cases are based on this concept.

However, actually implementing OI presents numerous challenges. The most common obstacles are organizational culture and internal psychological resistance. It is often said that companies that have succeeded through their own efforts tend to have a culture that unconsciously shuns external technologies (the “NIH syndrome”: Not Invented Here). Furthermore, we cannot overlook the

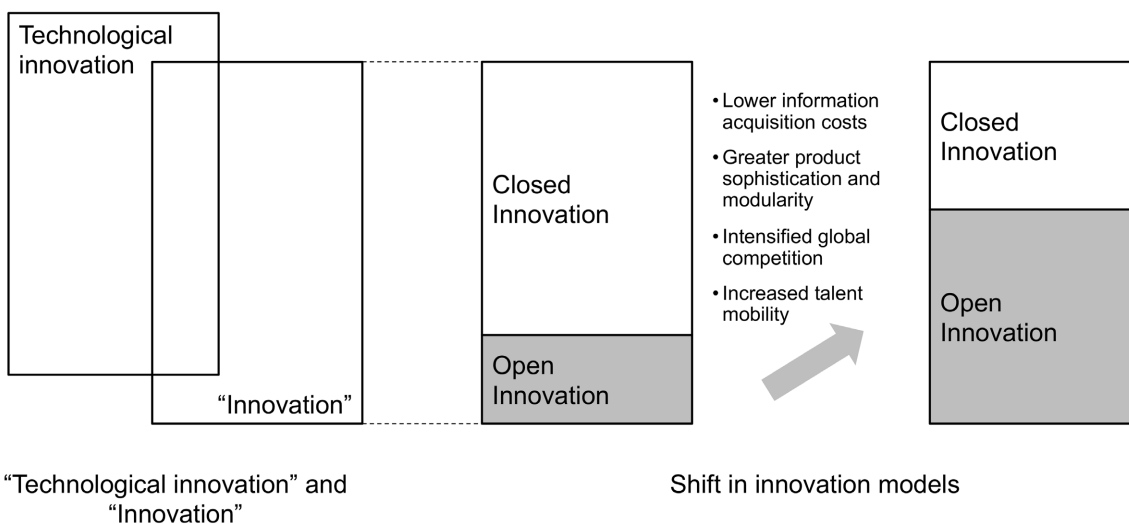


Figure 3 Technological advancement, innovation, and open innovation.

fact that employees are prone to harboring anxieties such as, “Will OI take away my job?” or “Will relying on external parties undermine our company’s R&D capabilities?” Simply paying lip service to these issues is insufficient; it is considered essential to change the corporate culture itself under top-level leadership and intentionally establish mechanisms – ranging from product development processes to performance evaluation criteria – that align with this new culture^[2].

3-2. Success Stories

P&G is frequently cited as a successful example of OI^[3]. Driven by a sense of crisis that in-house development alone would not enable the necessary growth, the company made a major shift toward introducing a systematic framework for incorporating external knowledge. A famous example is the development of potato chips printed with characters. When this product idea emerged, rather than starting to develop the printing technology in-house as it had done previously, P&G searched its global network for existing similar technologies. As a result, they discovered that inkjet technology was already in practical use at a small bakery in Italy. By adopting this technology, they were able to bring the product to market in about half the time it would have taken to develop it in-house. P&G’s approach was based on the idea that “While we have 7,500 engineers in-house, there are likely 200 engineers with similar expertise in each of their specialized fields worldwide. In other words, 1.5 million engineers could be potential partners. Let’s create a system that allows them to contribute.”

That said, this transition did not proceed smoothly from the outset. As mentioned earlier, organizational culture and psychological resistance were no exception at P&G and gaining internal buy-in was a major challenge. The key to success lay in designing the transformation including systems, evaluation criteria, and organizational structures from the top down, while acknowledging the existence of resistance. Specifically, the company introduced a performance evaluation system that treats innovations originating internally and externally equally, and deployed dozens of dedicated personnel whose mission was to connect with external partners. Furthermore, top management clearly set the goal of “50% of innovation coming from outside the company” and is said to have taken decisive action against managers who resisted this initiative.

In Japan, the example of Osaka Gas is well-known^[4]. The company established a dedicated OI department and standardized the process from identifying internal needs to external exploration and collaboration. To seek out partners, they actively disclosed information about their needs to the outside world. Although there was reportedly some internal resistance to publicly sharing the company’s challenges, senior management made the decision and drove the initiative forward. As a result, Osaka Gas established itself as a hub where information converges from various sources and achieved significant value creation (social implementation) that would have been impossible on their own.

3-3. Success Factors

OI is merely a means to an end, the starting point is clarifying the objectives: “What do we want to achieve?” and “Why are we implementing this?” Based

on that, it is considered necessary to combine the four elements – “culture”, “procedures”, “skills”, and “motivation” – in a way that suits the company’s specific context^[2]. Viewing the success stories of P&G and Osaka Gas from this perspective, it can be seen that in both cases, they first clarified their own challenges and the value they sought to realize. To address these through OI, they transformed their corporate culture and established systems under the leadership of top management.

4. Recent OI Research

A global OI boom began in the early 2000s and academic research advanced rapidly. Chesbrough, the proponent of OI, published a paper in 2024 summarizing OI research over the past 20 years^[5]. In it he points out the following limitations and challenges of OI:

- Dependence on specific individuals: At P&G, performance stagnated after the management team and their subordinates who had strongly promoted and successfully implemented OI left the company. This suggests that the success of OI may depend on the specific individuals in charge.
- The commoditization of OI: Following P&G’s success, many major consumer goods manufacturers shifted their focus to utilizing OI and as a result, OI ceased to be a source of competitive advantage in this industry. The strategy itself became commoditized.
- The Openness Paradox: A reverse U-shaped relationship has been observed between the degree of openness to the outside world and the outcomes of OI. Implementing OI requires costs associated with knowledge management and organizational operations. If openness is increased excessively, these costs can offset the benefits. It has been noted that this issue is particularly acute in small and medium-sized enterprises (SMEs).

These findings are highly instructive for practitioners involved in OI. By learning from the knowledge generalized by those who came before us, we should be able to reduce the likelihood of failure when embarking on new OI initiatives.

5. OI Pitfalls Commonly Encountered by Japanese Companies

Globally, there is a wealth of OI practice and academic research on success and failure factors is advancing. However, in the field at Japanese companies, it is not uncommon for OI initiatives to fail to deliver the expected results. So where do they stumble? NEDO’s “White Paper on Open Innovation, 3rd Edition”^[6] identifies the following as typical problems:

- Believing that simply engaging in OI will lead to innovation
- A lack of a clear objective regarding “what we want to achieve”

In other words, when initiatives are launched with an ambiguous understanding of “what value we want to create,” external collaboration becomes an end in itself and fails to lead to business results. OI is a means, not an end. It is essential to keep this in mind at all times.

Furthermore, in practice, even while claiming to be “open”, there is a tendency to be swayed by the mindset of “only our company should benefit.” As mentioned above, the foundation of OI lies in “rapidly creating value through collaboration with partners to stay ahead of competitors and sharing the results in a mutually agreeable manner.” Whether or not one can adopt this mindset is a critical factor that determines success or failure.

6. Conclusion

In this article, I redefined innovation not as “technological innovation” but as “value creation,” and clarified the essence of OI. What this finding indicates is that rather than focusing on external collaboration itself, it is crucial to first clarify “what kind of value we want to realize” and then establish the culture and systems necessary to achieve it under top-level leadership.

Most companies in their startup phase rarely have the resources to handle everything on their own so they must have collaborated with external partners in some form to create value and seize opportunities for growth. This is nothing less than the practice of OI. However, as companies grow, they often lean toward self-reliance and before they know it, they are caught up with and even overtaken by later entrants who are actively practicing OI. Perhaps what is needed now is an effort to relearn the accumulated knowledge of OI research while recapturing the OI spirit of the company’s early days when value creation moved at a rapid pace.

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