

Front End Loading in new product development

**“Formation of market advantage technology
that overcomes the bounded awareness”**

— Visualisation and Quantitative Risk Assessment—

Shigemi Ochiai, Ph.D.
Jonquil Consulting Inc.

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Product development and financial indicators

Under the impact of the new coronavirus, the global economy has begun to shrink, and the field of product development is about to undergo a significant change. It might be because, in a social environment that has changed entirely due to the new coronavirus's impact, it is not possible to meet customer needs unless we produce products that have elements of surprise in one after another. Still, the real reason could probably be due to the management structure of the companies themselves.

Since many companies are enforcing quarterly settlement of accounts, they are obliged to publish their Return on Assets (ROA) and Return on Equity (ROE) to shareholders every three months, even under the impact of the New Coronavirus. Those are the financial measure of how effectively their total assets are being used to generate profits. In other words, it is a way of judging the efficiency of a company's profitability using visualised figures that show how much profit it has been able to secure using shareholders' equity in just three months. Therefore, those with high ROA and ROE are evaluated as attractive to shareholders. However, in mostly an oversupply situation, which had already started, not only because of the new coronavirus's impact, is it possible to form a divine mechanism that quickly complete product manufacturing that attracts customers and makes significant profits? For example, products such as smartphones require technological advances day by day, such as creating a database of large volumes of data in the palm of your hand, sending and receiving them, installing various applications, and traffic of information around the world. In particular, the IT components that form these products' basis are being on development upon feeling as if they were treading on thin ice. In the past, each performance was comprised of one-to-one component-parts. Still, in the current situation where downsizing and performance pursuing the limit are forced, the development becomes such that a single component can be covered several abilities. It is expected that this development status and the follow-up to the quarterly US-style financial results mentioned earlier will continue even more intensity in the future.

Formation of market advantage technology that overcomes the bounded awareness

For proceeding with product development in such an unprecedentedly harsh

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environment, it may be fair to say that it is challenging to increase product value and achieve the company's own goals simply by adopting a front-end loading system. Even in less demanding situations, humans create "Bounded awareness" in their decision-making processes. Dan Lovallo, Daniel Kahneman at Harvard University's Department of Psychology explain it in their book "Delusion of Success: How Optimism Undermines Executives Decisions". When "Bounded awareness" is created, people find it difficult to view, use or communicate information, even if it is relevant, readily available and recognisable. They accept what is presented to them without going against the situation. They also state that most people are often unaware of how "Bounded awareness" is created, and failure to recognise these barriers can lead to a terrible situation.

As the short-term timelines will continue to be the fate of companies in the future and to overcome developers' conscious barriers and facilitate rapid decision-making, it will be essential to practice Front-End-Loading at more sophisticated product development. To put this into practice, it is not enough to go through the procedure done in the past with the Front-End-Loading system, which is to consider "Identify the level of difficulty, the risks associated with it and measure to avoid them" at the beginning of the product development process.

So, what kind of method is there? First, we need to restructure the technology portfolio to bring market advantage, thereby raising developers' creative awareness and overcoming their "Bounded awareness". Second, it is that introducing "The new creation through the formation of market advantage technology and the synergistic effects" for practicing irreversible product development, based on method securing market dominance and the development schedule. Those two things would surmount "bounded awareness" and practice product development that ensures a competitive advantage.