

Front End Loading in new product development
“Transforming business models and business processes”
— Business model reorganisation and interlocking system —

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Interlocking Systems on Modules versus Integration

It is no secret that the concept of business models and processes has been gaining attention over the past 30 years as the Japanese manufacturing industry entered a period of stagnant growth with the collapse of the bubble economy that ended in the early 1990s. I shall say that the background to these is the attempt to create new added value by focusing on the business ideals or processes as the cause of the business slump.

The Interlocking System (Pure-Straight) is the system that explains "related functions" and "job functions" should be combined consistently for creating business value. And many companies now accept it as a matter of course. On the other hand, there is also a confrontational presentation of business development called "Modular type vs. Integrated type". The impression is that just matching the module's interface completes the modular type and the integrated type takes time and effort to repeat trial and error for the entire component configuration. Therefore, when building an interlocking system, the modular type should seem easier to be fit. However, it may be necessary to re-question the idea of confronting the modular and integrated types. There is also the view that the long-term viability of a product or business requires both of them. It can also be the concept of a cycle of product value creation and product configuration integration and its modularisation.

For example, if it is an entirely new product that does not exist in this world in terms of all product configurations, it is essential to start with integration. All product configurations are considered one, and "some sort of" structures are determined by trial and error. Once the evaluation of the product composition is decided in the market, that composition is considered a module. And, the division of labour between companies begins, with that module being the unit for outsourcing. As time goes by and the product value is gradually lost due to competition, they will re-examine the product composition again, think about an entirely new composition, and seek higher value creation. That means returning to the integration again.

Transforming business models and business processes

It is often said that changes in product composition are often discussed in connection with technological innovation. From steam locomotives to electric

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locomotives, from vacuum tubes to transistors, the product mix has changed dramatically, and the rise and fall of businesses and companies have accompanied it. However, the new technology shall be there to create new value, and it is not supposed to be aiming to use the technology itself. The phenomenon that technological innovation leads to a crisis in a company is caused by the difficulty in responding to changes in the product mix associated with technological innovation. In other words, it means that the company's existing processes cannot adapt to changes in the product mix.

Creating new value almost always involves a change in the product mix. Therefore, the scheme of a module will inevitably change. However, it does not eliminate the modular concept, and it just shifts to another modular scheme. In other words, if we interpret the change from one modular scheme to a new and different modular scheme as requiring process integration to increase the suitability and potential of the new module, the ability to integrate processes is inevitable to maintain competitiveness or value.

It is inappropriate to look at which type is easier to maintain the interlocking system. Instead, it is more appropriate to say that there must be a system of interlocking processes for modularisation to maintain business value rather than an arbitrary division between development and manufacturing. When reorganizing business models or processes to create new and higher value, we should consider constructing an interlocking system for that purpose.