Special Feature Article

Early EV Investment Miscalculations, Relief from the Return of ICEs
Chinese Automakers Drive New Waves of Development and Cost Innovation

A growing number of companies in the automobile component industry are rethinking the way they structure their businesses. Behind this shift are the successive revisions to EV strategies by original equipment manufacturers (OEMs). As development programs are canceled or postponed, component suppliers that have invested ahead of demand in engineers and production facilities based on anticipated future mass production are increasingly facing the risk of being unable to recover those investments. At the same time, the renewed demand for hybrid vehicles (HVs) and internal combustion engines (ICEs) is not necessarily a headwind for suppliers. It offers an opportunity to leverage technologies they have cultivated over many years, as well as existing production assets. However, a return to HVs and ICEs does not mean reverting to traditional business models. Chinese EV manufacturers and other emerging players are using artificial intelligence (AI) and digital technologies to shorten development cycles while simultaneously driving down costs. Going forward, suppliers will be required not only to adapt to diverse powertrain technologies but also to transform the very processes that underpin development and production.

When the Planned Customer Disappears

Changes in OEM product plans are bringing to light the risks associated with the upfront investments long made by automobile component suppliers, risks that have often remained beneath the surface.

One of the most challenging areas is advance development undertaken in anticipation of future vehicle programs even before a mass-production contract is secured. Waiting until an OEM issues formal requirements is often too late to meet the development schedule for next-generation vehicles. As a result, suppliers have traditionally worked closely with OEMs from the early planning stages, aligning specifications and committing engineering resources and personnel at their own risk in anticipation of future adoption.

One major electronic components manufacturer had been developing components for Honda's next-generation vehicles, anticipating the company's shift toward electrification and higher-voltage architectures. However, the vehicle program that had been expected to enter mass production was ultimately canceled. A company executive recalled, “We had finalized the design long ago, but overnight we lost the program we were counting on.”

If a development schedule is merely postponed, there remains a possibility that the product will eventually be adopted. The situation is very different, however, when the project itself is canceled. In such cases, investments already made in engineering hours, development effort, and equipment can become difficult to recover. “Naturally, we are

seeking compensation," the executive said.

In situations like these, it becomes critical to review development assets one by one and determine how much of them can be redirected to other applications. Core technologies with broad applicability may be deployed to other OEMs or different products, whereas highly customized components developed to meet the requirements of a specific customer often offer limited opportunities for reuse. Discussions with OEMs over how development costs and losses should be shared are therefore unavoidable.

How to Capitalize on the Return of Demand

In contrast to the losses stemming from the reassessment of EV development programs, many automobile component suppliers are taking a positive view of the renewed demand for HVs and ICEs.

A symbolic example is Honda Motor Co., Ltd.'s decision to discontinue the development and production of certain models within its next-generation EV "Zero Series" for North America and revise its policy of moving away from internal combustion engines. With the outlook for EV demand becoming increasingly uncertain, the need to continue making massive investments based solely on electrification has diminished, creating new opportunities to utilize existing plants and production lines.

Hiroshi Otsuka, President & CEO of Musashi Seimitsu Industry Co., Ltd., believes Honda Motor Co., Ltd.'s change in direction will allow the company to utilize existing facilities and production lines through a shift toward HVs, thereby securing near-term earnings. "The challenge is how quickly we can respond," he said.

That said, it is difficult to rely solely on the return of HV demand as a driver of future growth. As OEMs themselves broaden their powertrain options, suppliers must also reduce the risks associated with concentrating their business around a single technology.

One approach is to diversify their customer base. H-ONE CO., LTD. is pursuing expanded business with other automakers, stating that it aims to "reduce dependence on any one customer while transitioning to a more profitable business structure." Yorozu Corporation has likewise positioned business with Toyota Motor Corporation as its second major pillar.

The shift from EVs back toward HVs is more than a change in technology strategy. For component suppliers, it also represents an opportunity to restructure their business models by reexamining what technologies they possess, which OEMs they serve, and how they generate profits.

The fact that India's Samvardhana Motherson International Limited has recently acquired a series of Japanese component suppliers involved in internal combustion engine-related businesses is not unrelated to these developments. The group is believed to be seeking both to acquire ICE-related technologies and to broaden its customer base beyond traditional keiretsu affiliations.

At a ceremony marking the addition of Motherson Yutaka Giken Co. Limited to the group earlier this year, a senior executive visiting Japan emphasized, “We want to help the company move beyond traditional group affiliations and diversify its customer base.”

A Gap That Cannot Be Closed by Price Alone

The return to HVs and ICEs, which allows suppliers to leverage their existing technologies, may provide a temporary tailwind for the automobile component industry. Beyond that, however, a different form of competition awaits. It is the challenge posed by “China Speed” and “China Cost,” the competitive strengths wielded by Chinese EV manufacturers and emerging technology companies.

Chinese players are not only incorporating AI into vehicle development processes but are also advancing virtual development using cloud-based environments to validate designs and performance before physical prototypes are built. By conducting multiple development processes simultaneously in digital space, they are significantly shortening development lead times.

By contrast, conventional development often relies on evaluating actual vehicles or physical devices after they have been completed. When problems are discovered at that stage, designs must be revised and prototypes rebuilt for further testing. As such rework accumulates, both development time and costs increase.

Toshihiro Mibe, Director, President and Representative Executive Officer of Honda Motor Co., Ltd., has indicated that the company intends to “utilize external resources flexibly and strategically, including the cost competitiveness of China and India and the use of industry-standard components.” As OEMs themselves increasingly leverage external resources, component suppliers are being required to achieve even greater development speed and engineering efficiency.

Some companies are already moving quickly to adapt. TOYOTA BOSHOKU CORPORATION states that it is strengthening its development organization in China and significantly increasing staffing levels to keep pace with the speed of Chinese competitors. Eiji Kagohashi, Corporate Officer of TOKAI RIKA CO., LTD., also noted that the company would respond if customers seek greater flexibility in functional and durability requirements.

The challenge arises when prices are reduced without revisiting performance requirements. One executive at a component supplier explained, “If specifications and requirements themselves are fundamentally reconsidered, substantial cost reductions may be possible. Without such changes, however, it becomes extremely difficult.”

What suppliers are being asked to achieve is not simply across-the-board cost reductions. Rather, they must reassess specifications and requirements themselves while improving efficiency across the entire development process, from design and procurement to prototyping and evaluation, enabling them to achieve quality, cost competitiveness, and

speed simultaneously.

Tomio Ueno, President and Representative Director of Bando Chemical Industries, Ltd., commented: “Our immediate challenge is responding to Chinese manufacturers, whose development cycles are extremely fast. The question is how to accelerate supply speed while maintaining our strength in quality. We are working to shorten lead times for product evaluation by utilizing accumulated data and streamlining development and procurement processes.”

As OEM strategies shift more rapidly than ever before, the capabilities required of component suppliers are also changing. Technologies must be developed with sufficient versatility to serve multiple customers and applications. Companies need organizational structures that allow investments to be recovered through alternative projects even when development priorities change midstream. At the same time, they must shorten development lead times and reduce costs while maintaining quality. In other words, simply producing high-quality components according to customer specifications is no longer enough to address either investment risks or intensifying development competition.

The resurgence of demand for HVs and ICEs should not be viewed merely as a source of relief for component suppliers. Rather, it should be regarded as an opportunity to reassess existing approaches to development and customer relationships, and to prepare for the next phase of competition.

Development Capability, Not Powertrains, Will Determine Competitiveness

Atsushi Osanai, Professor at WASEDA Business School and an expert on the manufacturing industry, argues that these developments should not be viewed simply as a choice between HVs and EVs. “As automakers continue to revise their product plans, it is rational for suppliers to reduce their dependence on highly customized products designed for a single customer and increase technologies that can be deployed across multiple customers. Possessing technologies that can be applied to both HVs and EVs is also an effective way to respond to fluctuations in demand,” he says.

At the same time, he cautions that simply pursuing standardization and modularization is not the answer. “If Japanese companies lose their strength in collaborative engineering and fine-tuning, which has long been a source of their competitiveness, they risk creating a market that favors Chinese companies, which excel at modularization. The key is to distinguish between areas that should be standardized and those that require customization. This calls for an architectural approach that optimizes areas directly linked to customer value while standardizing everything else,” he explains.

Professor Osanai also notes that the renewed focus on HVs should not simply be interpreted as a revival of existing businesses. “Companies need to distinguish between HVs, which support current earnings, and EVs, which are expected to drive future growth,

and clearly define how the two will coexist during the transition period," he says. What he emphasizes most is that the focus of competition is shifting from products themselves to the systems and processes used to develop them.

"The fundamental change taking place today is not a debate over powertrain choices but competition in the development process itself. Chinese companies are using AI and digital twins to conduct validation before physical vehicles are built, dramatically shortening development cycles. This is not merely a difference in development methodology; it has the potential to transform business structures themselves," he says.

However, he does not believe Japanese companies should simply chase digitalization alone. "Japanese manufacturers possess strengths in quality assurance that consider risks before they become visible, as well as expertise in fine-tuning the user experience, the subtle characteristics that affect how people actually feel when using a product. These advantages cannot easily be replaced by validation conducted solely in virtual environments," he notes.

Regarding the market outlook, Professor Osanai expects consumers to increasingly split into two segments: those prioritizing cost performance and those seeking emotional value and a sense of ownership in their vehicles. "Improving price competitiveness through greater efficiency is important, but so is maintaining quality and emotional value. Striking the right balance between the two will be critical," he says.

These changes will also affect the relationship between OEMs and suppliers. According to Professor Osanai, suppliers must shift from a contract-manufacturing model, in which they produce high-quality components based on OEM specifications, to a "two-way integration model" in which they propose technologies by taking a broader view of the value of the entire vehicle.

As vehicles become increasingly complex, the future direction of technology and market demand is becoming more difficult to predict. "There is a limit to an OEM's ability to define the entire vehicle concept on its own, making suppliers' proposal capabilities increasingly important. If suppliers can develop versatile technologies on their own and deploy them across multiple OEMs, they will be able to participate in vehicle development from a more proactive position," he says.

Looking ahead, Professor Osanai concludes: "Rather than taking comfort in the increase in demand resulting from the reassessment of HVs, companies should seize this opportunity to transform the way development is conducted. The challenge is to accelerate development while preserving the quality and craftsmanship that have long been strengths of Japanese manufacturers. Whether they can successfully achieve that update will determine their competitiveness in the years ahead."