

AUTOMOTIVE ENGINEERING SERVICE PROVIDERS

HOW TO TACKLE THE PROFITABILITY CHALLENGE



MARKET SITUATION

In 2016-2017, the automotive industry invested more than €113 billion in research and development (R&D) globally. In terms of geographies, Europe received the biggest share of spend, with €53 billion, trailed closely by Asia (€42 billion), and with the Americas a distant third (€18 billion). The automotive technology shift towards electrification, connected services, autonomous driving, and shared vehicles is driving R&D, and some of the current profit warnings of large automotive players can be attributed to the heavy investments in technology. In addition, tighter regulations have placed considerable pressure on the “bread and butter” business of automotive engineering, such as powertrain calibration, testing, and homologation. Consequently, many programs have been delayed. With original equipment manufacturers’ internal engineering capacity inflexible and strained to capacity, R&D outsourcing is becoming an increasingly important way to execute technology programs in a timely manner, while managing the workload of the internal engineering resources.

In the outsourced engineering market, specialized engineering services providers (ESPs) have built up massive competences and capacity to support their clients’ needs.

Based on market trends, the ESPs should be thriving. Instead, our analysis shows that while revenues are increasing (by between 3 percent and 5 percent annually), profit margins at many ESPs are declining. Why?

In the current automotive engineering market, engineering service providers ought to be thriving. But in fact, their profitability has been left wanting.

BUSINESS MODELS AND PATTERNS

In 2015, one of the ESP market's predominant business models, "body leasing" – essentially renting out qualified engineers and technicians to OEMs that make them an integral part of their program staff on-site – has taken a serious hit in Germany, one of the key automotive ESP markets. Works councils in many OEM and supplier organizations have protested the increasing number of short-term leased engineers (who are paid well below the average of the in-house staff), and German law (including the Arbeitnehmer-Überlassungsgesetz) is forcing OEMs to manage external engineering capacity carefully in order to avoid having to add the leased engineers to their permanent workforce.

While body-leasing ESP companies have found ways to mitigate these challenges (such as renting project office space on their own near clients, limiting the contact points to their clients to "representatives", and rotating staff more frequently), this has opened up the market for emerging competitors in lower-cost countries as the "lock-in" effect of the ESPs has weakened.

In order to avoid the pure-play "hourly rate" competition, many body-leasing companies have tried to build up know-how and competence in order to take over more responsibilities and challenge more specialized engineering service companies.

Two other ESP business models, turnkey developers (such as the large players Bertrandt, EDAG, IAV, and Ricardo) and their smaller counterparts, component design and construction companies, have suffered in consequence from the push of body-leasing companies into their home turf, increasing competitive pressure and lowering average prices.

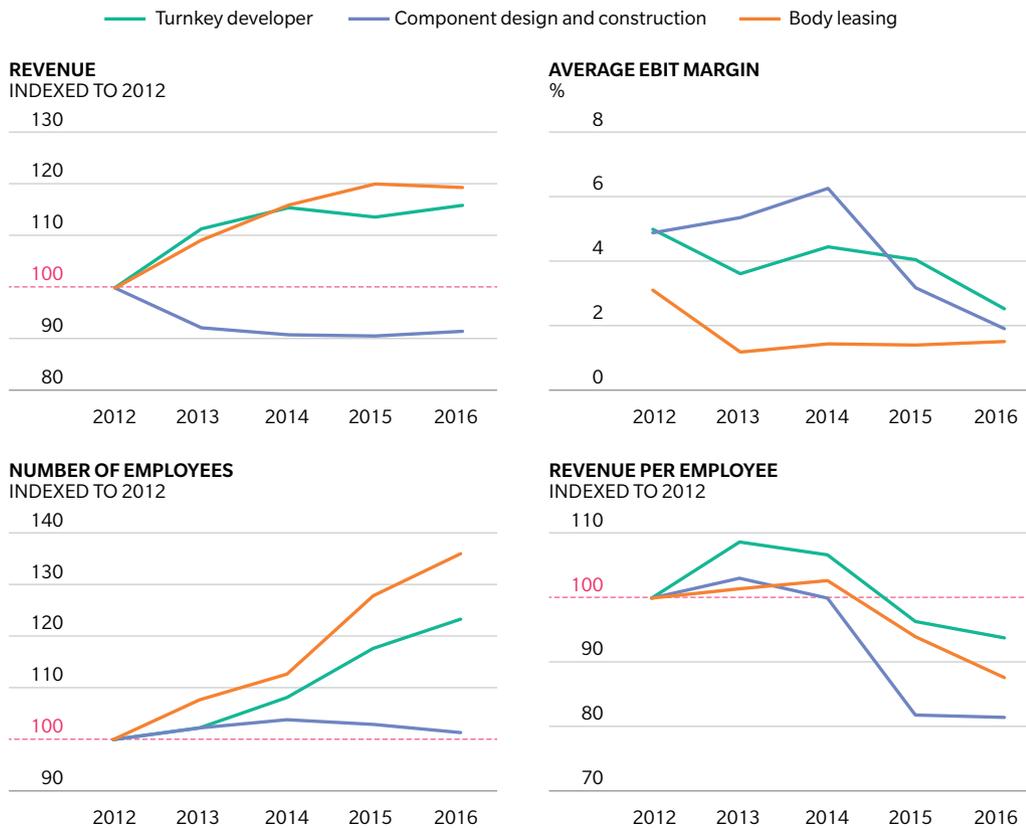
When we look at the financial situation of the three segments, we can see that there are remarkable differences between the different segments' performance. While both turnkey developers and body-leasing companies have grown strongly, the smaller component design and construction specialists have struggled.

But all three segments share the same problem: Revenue per employee has been decreasing, and profitability has converged towards an EBIT margin of between 2 percent

Consolidation, tiered structures, offshoring, and the "search for the niche" are common reactions among engineering service providers.

and 3 percent, a level that may be common for body-leasing companies but represents a strong decline for the turnkey developers and component specialists.

Exhibit 1: Engineering Services: Industry Dynamics
 Variance evident between different business archetypes



Note: Based on data available for a sample of 30 key players. Data for 2017 still not fully available, but with similar trend
Sources: Amadeus, S&S Capital IQ, Automobil Produktion, Automobil-Industrie, Oliver Wyman analyses

In reaction to this challenge and to the developing needs of the big ESP clients, a number of patterns are changing the landscape of the ESP industry:

1. TIER STRUCTURES

Increasingly, ESPs are developing a tiered structure that is very similar to the one found in the automotive supplier world. A “general contractor” ESP, most often a turnkey integrator, may take over the complete responsibility for a program, as for example the development of a vehicle derivative, including its preparation for the industrialization. The general contractor will then outsource work to sub-contractors that design components, run simulations, and provide testing services. While this team approach allows ESPs to serve bigger and broader projects (in keeping with OEM customer demand), it also requires a completely different set of competences, especially on the general contractor’s side.

2. SEARCH FOR THE NICHE

Smaller ESPs risk becoming marginalized, caught between the large integrator ESPs on the one side and the large-scale low-cost body-leasing competitors on the other. They increasingly try to build up specialized know-how, competencies, and assets focused on specific niches of the ESP market. For example, they may develop specific testing/validation competencies and assets in emissions testing, (currently being a hot topic in the industry) or may focus on other selected areas, such as vehicle transmissions or exhaust systems. Special segments such as off-highway vehicles, motorcycles, and motorsports may be another option for differentiation. However, the sustainability of the differentiation often depends on the OEMs, which promote competition by “qualifying” several smaller ESPs for the same program – and then keep most of the valuable know-how in-house.

3. NEW CLIENTS

Automotive suppliers are taking over more responsibilities from the OEMs they serve, given the need for OEMs to concentrate on the new technologies and competences resulting from automotive megatrends. This opens up a new customer group for ESPs, as many automotive suppliers lack the requisite systems and integration capabilities in the short term. While some suppliers (such as Bosch, Schaeffler, and Continental) have gone so far as to build up ESP business models on their own – thereby actually increasing the competitive pressures in the market – many other suppliers have become an important customer group for ESPs.

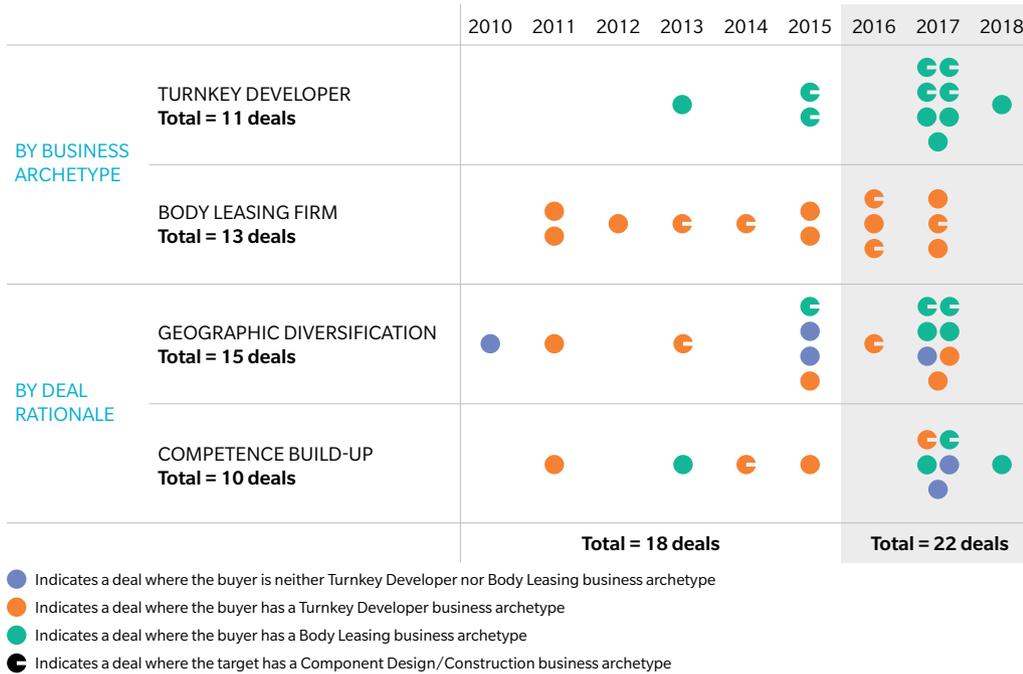
4. M&A

We have analyzed the M&A activity in the sector and found out that not only are many turnkey players investing in smaller specialist capabilities, but that body-leasing companies are also following an increased value-add strategy by acquiring more differentiated business models. In addition, some large corporations increasingly have shown interest in investing in specialized ESPs to complement their capability set and acquire technology know-how in innovative areas such as e-mobility and alternative materials.

More surprisingly, the geographical deal pattern seems to have changed. While near-shoring/ offshoring capacity has become a standard in the ESP industry now, proximity to customers is still an area that ESPs are investing heavily in. This means that not only are European ESPs building an on-site presence for new customers, such as in Asia, but that low-cost ESP players are also investing in greater visibility and presence near their European and American clients' sites.

Exhibit 2: Engineering Services: Mergers & Acquisitions

Stronger M&A activity in the last 2.5 years compared to the 2010–15 period



Sources: MergerMarket, Thomson Reuters Eikon, Press, Oliver Wyman analyses

While all these strategic patterns make sense from a technology, service, and geographical point of view, thus far they have not succeeded in breaking the downward spiral of profitability in the ESP market. Moreover, with programs and ESPs growing ever larger, so too are the economic risks. Our view is that ESPs will need to take a look at their operating model in order to reverse that trend and become truly attractive business models.

ESP OPERATIONAL EXCELLENCE

Profitability of an ESP will depend increasingly on its competence to run programs efficiently, with few surprises in time and quality, so as to meet high customer expectations. This will require access to top engineering talent, smart deployment of digitalization, and a best-in-class program management capability.

TALENT

The war for top engineering talent has been fierce for many years. OEMs, suppliers, and ESPs find themselves fighting over the same limited pool of young engineers, and more often than not the smaller ESPs struggle to offer the same compensation packages as their OEM and supplier counterparts.

We believe, however, that ESPs have not made full use of their natural competitive advantages. They potentially can offer engineering talent flatter hierarchies, more responsibility on the lower levels, and a more modern workplace and way of working than their clients, as well as more diverse projects and programs and the opportunity to grow. Thus, they should be industry leaders when it comes to modern engineering organization design and HR models. The ESPs that are willing to invest in this area will be able to build up a sustainable competitive advantage.

DIGITALIZATION

The cost-saving potential from near- and offshoring is no longer sufficient to build up a sustainable cost position in the ESP world. At the same time, ESP clients increasingly demand results and not time and material programs, paying a fixed price negotiated prior to the project execution.

The new requirements go beyond technical expertise – sustainable cost advantage comes from operational excellence based on analytics.

While many ESPs are trying to build up system, product, and component know-how, they should focus instead on their engineering program efficiency in order to understand what drives their business. For example, the virtualization of process steps can be a key differentiator, allowing them to offer a program at a lower cost. But to provide that capability will require that ESPs invest heavily in the field so as to remain competitive.

Moreover, we believe that a comprehensive analysis of use cases for smart data will unlock more potential along the complete ESP value chain – such as a best-in-class capacity management system, a real-time “program cockpit” that identifies the key drivers and trends of costs and delays, and a state-of-the-art product cost-management system allowing ESPs to actively consult their clients – might be better long-term investments than the latest powertrain-testing equipment, even if in the near term such equipment is in greater demand.

PROGRAM MANAGEMENT

Larger and more complex ESP programs require a different species of program managers supported by a sophisticated program management process. While this would appear to be obvious, only a few ESPs have fully implemented such capabilities. Again, there probably is a shortage of such people on the talent markets, which puts even greater pressure on ESPs to develop their own program management standards and procedures to run them more efficiently. In addition to the technical leaders, programs require also managers with strong commercial, organizational and managerial skills. Similarly, ESPs also need to broaden senior leadership to include, for example, a chief operating officer in order to balance and supplement the roles of CEO and the more technology-focused board members. It is important that the ESP itself reflects the importance of the commercial excellence to leverage know-how from within the organization and improve operations on an ongoing and continuous basis.

Implementing these aspects may require a larger transformation program for an ESP, but we believe it's worth the effort, as the resulting competitive advantages are likely to be more sustainable than other areas where ESPs typically to invest in (such as the latest testing equipment). As the ESP industry matures, operational excellence will become key to profitability.

CONCLUSION

While the current market environment should be very favorable for engineering service providers (ESPs) in the automotive industry, their profitability has declined, even as they have grown and taken over bigger pieces of work from clients.

We are observing a trend towards increased consolidation/ M&A in the market in order to build up required competences and capacity. However, we believe that ESPs will need to rethink their delivery model in order to reverse the movement towards declining profitability.

In our view, an operational excellence initiative based on talent acquisition, digitalization use cases, and stringent program management is key to creating a sustainable competitive advantage in the ESP market. This operational excellence needs to be rooted in a deep understanding of clients' needs and future technologies, and has to bring ESPs' work processes and systems to the next level.

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