

INSIGHTS

AUTOMOTIVE, AEROSPACE & INDUSTRIALS GROUP

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Organizational Challenges Confronting Automotive Suppliers

Why Systems Haven't Been the Solution for Suppliers

Over the past decade, automotive vehicle manufacturers (VMs) have increasingly adopted a strategy of outsourcing an entire vehicle system to a single supplier. This supplier then assumes responsibility for designing, engineering and building an integrated system to functional specifications defined by the VMs. In addition, the systems provider is responsible for managing the entire extended supply chain for their given system. Most system providers typically manage programs for multiple VMs across a broad range of vehicle platforms and geographies.

VMs have embraced the creation and expansion of the systems provider role for several reasons. First, it supports their strategy of focusing on vehicle design and marketing, and increasing their participation in the

downstream value chain. Second, increasing technological complexity and more stringent regulatory requirements have made systems design and development more scale and expertise sensitive. Consequently, base development costs and engineering resources for new products must be shared across multiple VMs to be economically viable. Third, outsourcing

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Overview

Over the past decade, many automotive suppliers have made significant investments to develop the capabilities to design, engineer and manufacture complete vehicle systems. Assuming development responsibility for an entire system enables these suppliers to provide new features, reduce costs and resolve packaging conflicts by integrating functionality across component subsystems. In turn, VMs have encouraged this trend toward outsourcing entire vehicle systems to enable them to develop new products more efficiently and focus on marketing to the consumer.

Despite its apparent advantages, few suppliers have been able to generate adequate returns on the investments they have made in pursuit of this strategy. This Insights examines the root causes of this performance shortfall.

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entire systems enables the VMs to move a significant portion of their cost base away from captive internal operations to companies that, because they are subjected to market forces, are perceived to be more efficient and effective.

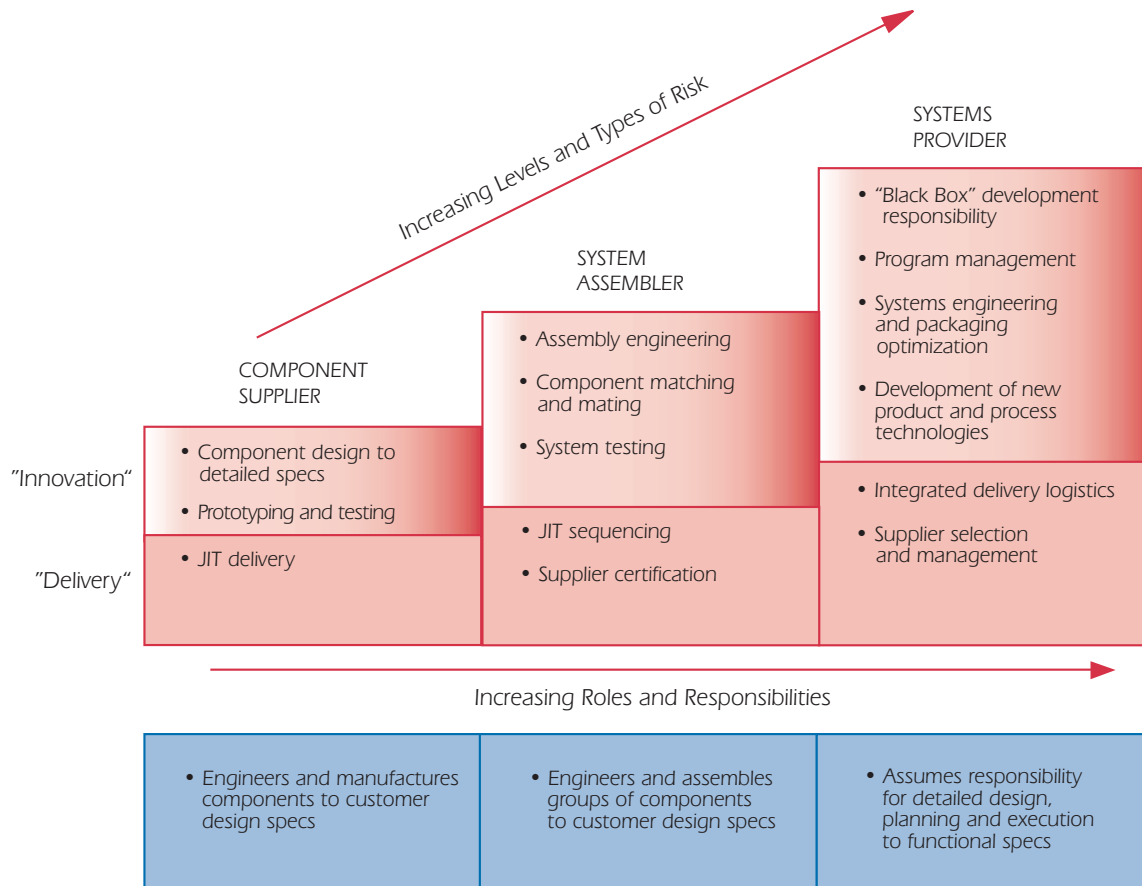
In turn, many suppliers have embraced the opportunity to take on the systems provider role (see Exhibit 1). Assuming

design and engineering responsibility for an entire vehicle system gives suppliers the opportunity to capture potential synergies that exist at the interface of component subsystems. For example, having complete design responsibility for the vehicle cockpit allows a supplier to rationalize switches, motors and wiring harnesses across the instrument panel,

entertainment and climate control systems, seating control systems, etc. Integrated design responsibility also enables the supplier to identify and correct potential packaging conflicts among subsystems much earlier in the development process. Furthermore, integrating functionality across multiple subsystems allows suppliers to

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EVOLUTION OF TIER 1 SUPPLIER STRATEGIES (EXHIBIT 1)



Source: Booz-Allen & Hamilton

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provide new features that enhance consumer value (e.g., anti-lock brakes). Finally, the systems provider strategy enables suppliers to expand the size and scope of their business, which, in turn, helps them leverage economies of scale in purchasing, manufacturing and overhead functions.

Meager Returns

As a result, many suppliers have made significant investments to develop or acquire the technical capabilities and global

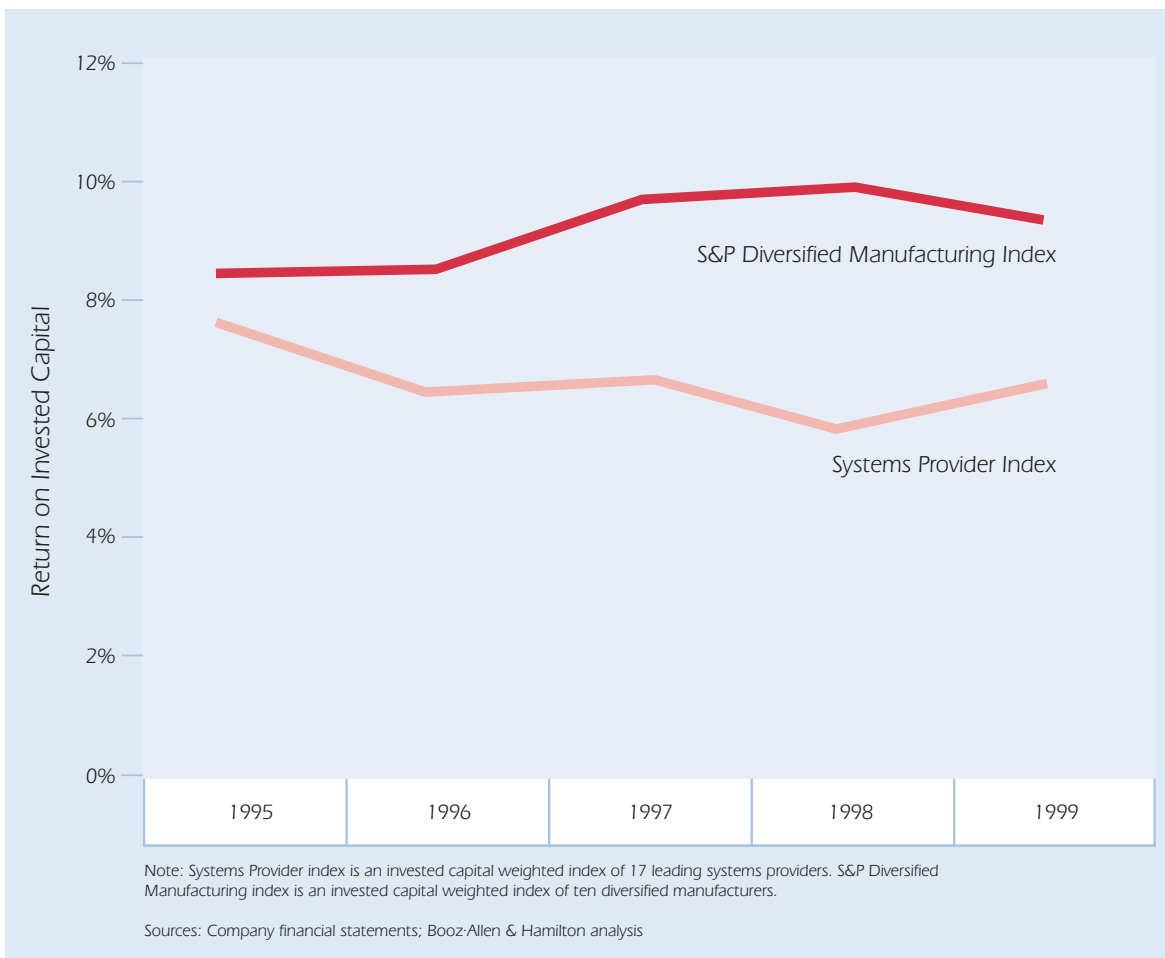
manufacturing footprint required to become a systems provider. However, to date, the returns on these investments have been far below the returns earned by diversified manufacturers as a whole (see Exhibit 2). Furthermore, the subpar returns generated by systems providers are especially troubling since the automotive industry has been producing and selling vehicles at a record pace in North America for the past several years. Given the inherent strategic advantages in being a

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SYSTEMS PROVIDER CAPITAL EFFICIENCY (EXHIBIT 2)



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Potential Explanations

A frequently proffered view is that the dynamics of the auto supply market are inherently unfavorable. According to this theory, the investments made by systems providers are predicated on achieving a certain volume of business. Since VMs award their business in discrete, multi-year chunks, there is an intense rivalry among suppliers to win new programs at all costs. As one supplier executive describes it, "You can't make money on the programs you don't have." VMs recognize this situation and ruthlessly exploit their bargaining power to push costs onto suppliers while relentlessly attacking their pricing. VMs maintain this dynamic by carefully parceling out their business among several suppliers to avoid ever becoming overly reliant on any one supplier.

While we recognize the Hobbesian nature of the program bidding process, we do not think this fully explains the observed results. In our experience working with systems providers, we generally find many opportunities to improve their operating and financial performance. When taken together, these opportunities typically are sufficient to allow the supplier to earn a more than adequate return on their capital base. Therefore, we do not believe that the structure and dynamics of the automotive supply market necessarily preclude superior financial performance. The question then is why have

most systems providers been unable to systematically capture all of the value creation opportunities available to them? We believe the answer is that the systems provider strategy is inherently difficult to execute organizationally.

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Managing a Portfolio

Each systems provider is essentially a portfolio of current and future VM programs, each of which is a multi-year financial project. To generate superior financial returns, the supplier must manage this portfolio across multiple dimensions simultaneously. These include:

- Program—to enable teams to design and engineer customized applications that optimally meet the specific requirements of each program
- Technology or sub-system—to manage a shelf of standard part designs created with systems intent
- Supply type or source—to ensure an optimal supply network and maximal purchasing leverage
- Geography—to appropriately respond to local operational issues and sales opportunities

- Customer—to manage each relationship in a way that increases the odds of winning new business while artfully resisting the VMs' efforts to expropriate an unfair portion of the rents created by the above.

The "Plaid" Organization

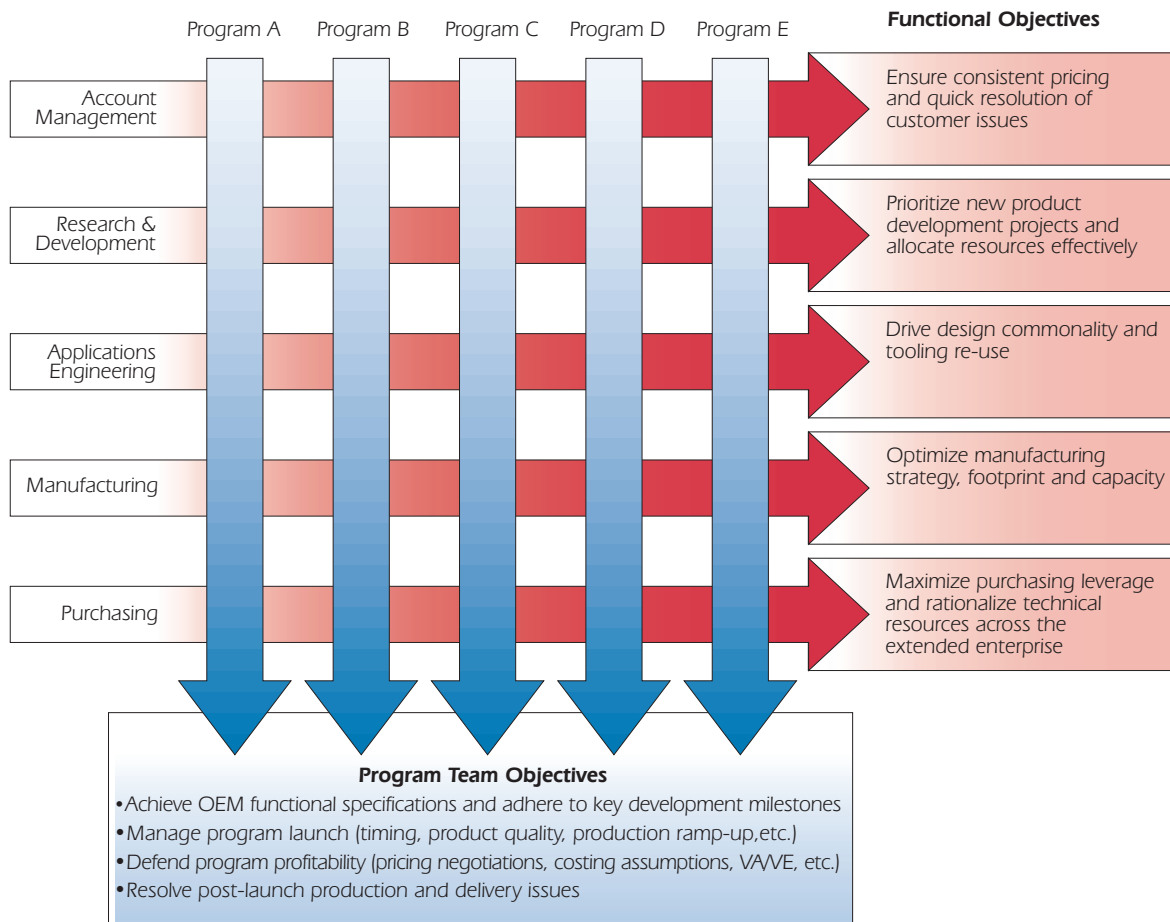
Managing a portfolio of VM programs simultaneously along these multiple dimensions is extremely difficult. Across the breadth of this portfolio, the firm must make thousands of decisions regarding product design, pricing, supplier selection, etc. Most of these decisions involve trade-offs among competing objectives. For example, custom engineering a part helps meet the specific functional requirements of the program, but makes it difficult to re-use existing parts and tooling. These trade-offs usually cannot be resolved according to an *a priori* decision rule; instead they must be managed on a case-by-case basis, based on circumstances that are specific to each situation.

Moreover, the information and knowledge required to reach a decision that is optimal for the firm as a whole often is dispersed across multiple functions and geographies. Creating an organizational model which enables the firm to integrate decisions across multiple boundaries and provides the flexibility to respond to differing circumstances is a significant challenge (see Exhibit 3).

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KEY FUNCTIONS INVOLVED IN MANAGING THE PORTFOLIO OF PROGRAMS (EXHIBIT 3)



Source: Booz-Allen & Hamilton

The Measurement Challenge

Furthermore, the high degree of functional integration required by the systems provider strategy makes it difficult for firms to create effective performance measurement systems. In most instances, successfully capturing an opportunity to create value requires the contribution of several functional or geographical units. For example, at least four groups are involved in selling a new product to a VM: new product development to create the concept, account management to sell the concept to the customer, and engineering and finance to

defend the costing assumptions (and therefore the pricing) to the VM. Traditional performance management systems force executives to choose between two unattractive alternatives. On the one hand, basing performance measures on the firm's aggregate results removes potential barriers to cooperation, but also encourages free rider behavior. On the other hand, measuring each function's performance individually can motivate superior effort and creativity, but it also raises barriers to cross-functional cooperation. A potential solution to this conundrum is to create

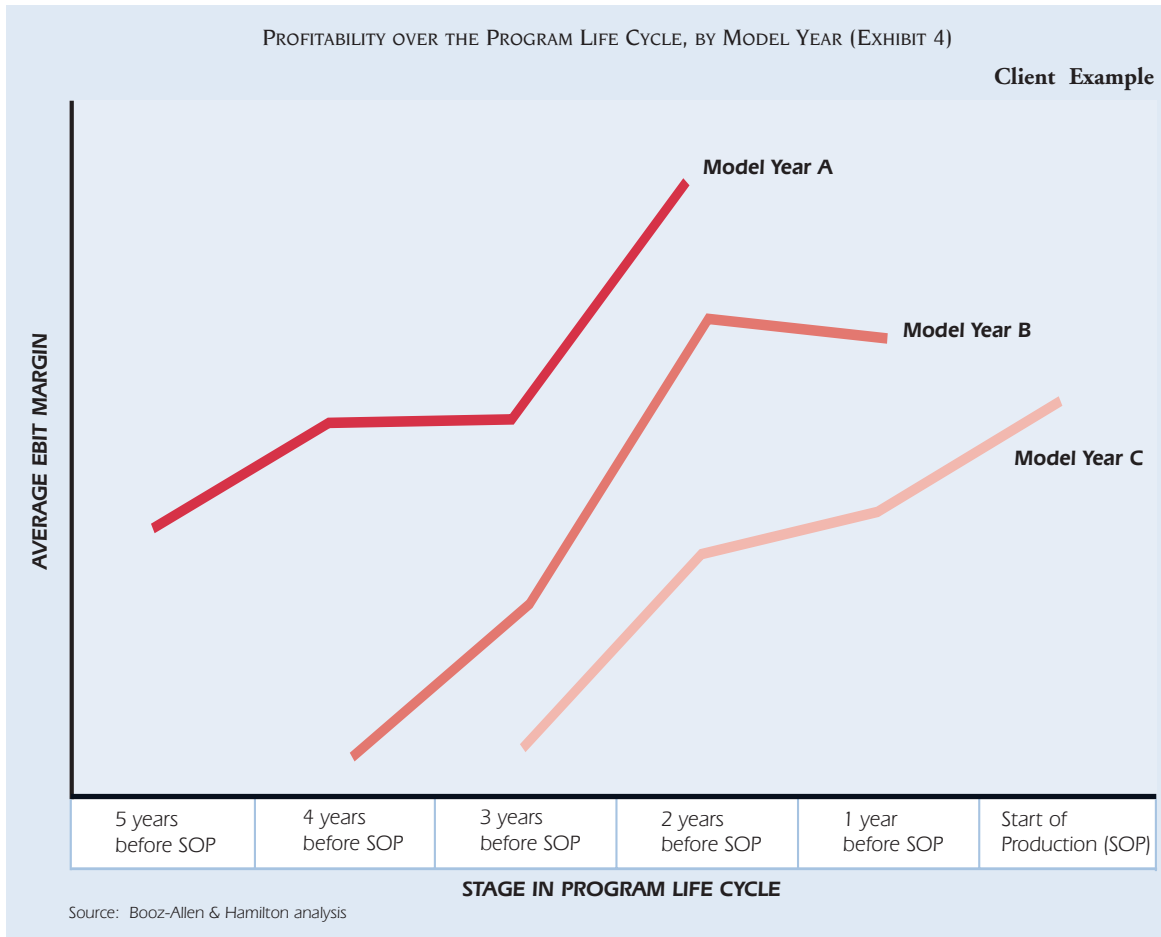
multiple, overlapping and integrated views of profitability for performance reporting and decision making. However, this often requires significant changes to information systems, and the P&L schema must be carefully designed to motivate the desired behaviors.

The Business Cycle

Finally, the problem of managing the firm's performance is compounded by the time horizons inherent in being a systems provider. While the dynamic of the program bidding process often forces systems

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providers to accept business which initially has low margins, there are usually a number of opportunities to improve program profitability post award (see Exhibit 4). For example, suppliers can up-sell content, charge for VM-driven design changes, limit prototyping and testing expenditures, etc. Due to their nature, the majority of these opportunities occur while the vehicle is still being designed and engineered; once the vehicle is in production, there typically is little the systems provider can do to improve the profitability of a program. Consequently, effectively managing the period between

award and launch is critical to the financial performance of the firm. However, most of the decisions made during this time period will not impact the firm's financial statements for two to three years. This makes it extremely difficult for management to reward good decisions and rectify bad ones in a timely fashion.

Legacy of the "Build-to-Print" Model

Many of the firms which have adopted the systems provider strategy have done so without fundamentally altering the organizational models they developed as build-to-print

component suppliers. As a result, they are ill-equipped to handle the complex organizational challenges that accompany their new strategy. For example, they tend to have relatively undeveloped processes for gathering, analyzing and distributing information. As a result, decisions are often made by functions or geographic units that lack an adequate understanding of the implications of their decisions on other parts of the business.

Furthermore, these companies typically organize authority and P&L responsibility along one or two dimensions of the business

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Many of the firms pursuing a systems provider strategy have business models that are ill-equipped to handle the complex organizational challenges that accompany this strategy.

(typically manufacturing and account management). These P&Ls often are constructed in such a way that decisions that are optimal for the firm as a whole can be detrimental to the reported performance of the decision maker. These poorly defined measures generate significant, internally focused conflict and negotiation. In addition, this system dampens the level of creativity and effort applied to managing those dimensions that are not deemed to be the primary axes of the business.

Finally, these companies usually rely on management control, measurement and reward systems which focus solely on current-year performance. In essence, they “promise long, but measure short.” This inhibits their ability to make decisions and accurately analyze business performance. Moreover, it can lead to pervasive gaming, such as sandbagging budgets and postponing opportunities once the caps on current-year bonus payments have been achieved.

The dissonance between the organizational complexity inherent to the systems provider strategy and the limitations of their management model inhibits many firms from realizing the potential benefits of this strategy. While senior management can occasionally intervene to ensure quality decision making, the issues that confront systems providers are generally too

numerous, detailed and fleeting to afford executives the time to systematically address all of them. Consequently, senior management intervention is rarely an adequate substitute for an ineffective organizational model.

No Simple Answers

In our experience, there are no simple answers to these organizational challenges. There are many organizational design levers that impact managerial behavior (structure, decision rights, measures, incentives, etc.). However, the design choices along each of these levers often involve trade-offs. For example, decentralizing authority to program teams enables them to optimize around program goals, but inhibits efforts to leverage common designs and materials. While these trade-offs can be mitigated by using all of the design levers in concert, the interaction effects among multiple levers must be carefully considered to avoid unintended consequences. This increases the scope and complexity of the design challenge.

Lasting Benefits

While there are no easy answers, the very difficulty of this challenge makes organizational design the top agenda item of CEOs. In our experience, fixing the organizational model can have a dramatic and immediate impact on financial performance. In addition, these improvements facilitate more

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rapid growth by improving the organization's ability to sense and react to changes in its environment. Since all systems providers face similar organizational challenges, creating a better organizational model

can confer real competitive advantage. Further, because it is difficult for competitors to observe and understand all of the subtleties of the design, this competitive advantage can be enduring.

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Steve Hedlund is a principal with Booz·Allen & Hamilton's Automotive, Aerospace and Industrials practice. He focuses on organization design and strategy-based transformation for automotive clients. Mr. Hedlund received a B.A. in Government from Dartmouth College and an MBA from The Tuck School. He can be reached in Cleveland at 216-696-1737 or hedlund_steve@bah.com.

Tom Pernsteiner is a Vice President with Booz·Allen & Hamilton's Automotive, Aerospace and Industrials practice. He works with clients in a variety of industries on strategy and performance improvement. Mr. Pernsteiner received a B.S. from Notre Dame University and an MBA from the University of Michigan. He can be reached in Cleveland at 216-696-1825 or pernstainer_thomas@bah.com.

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