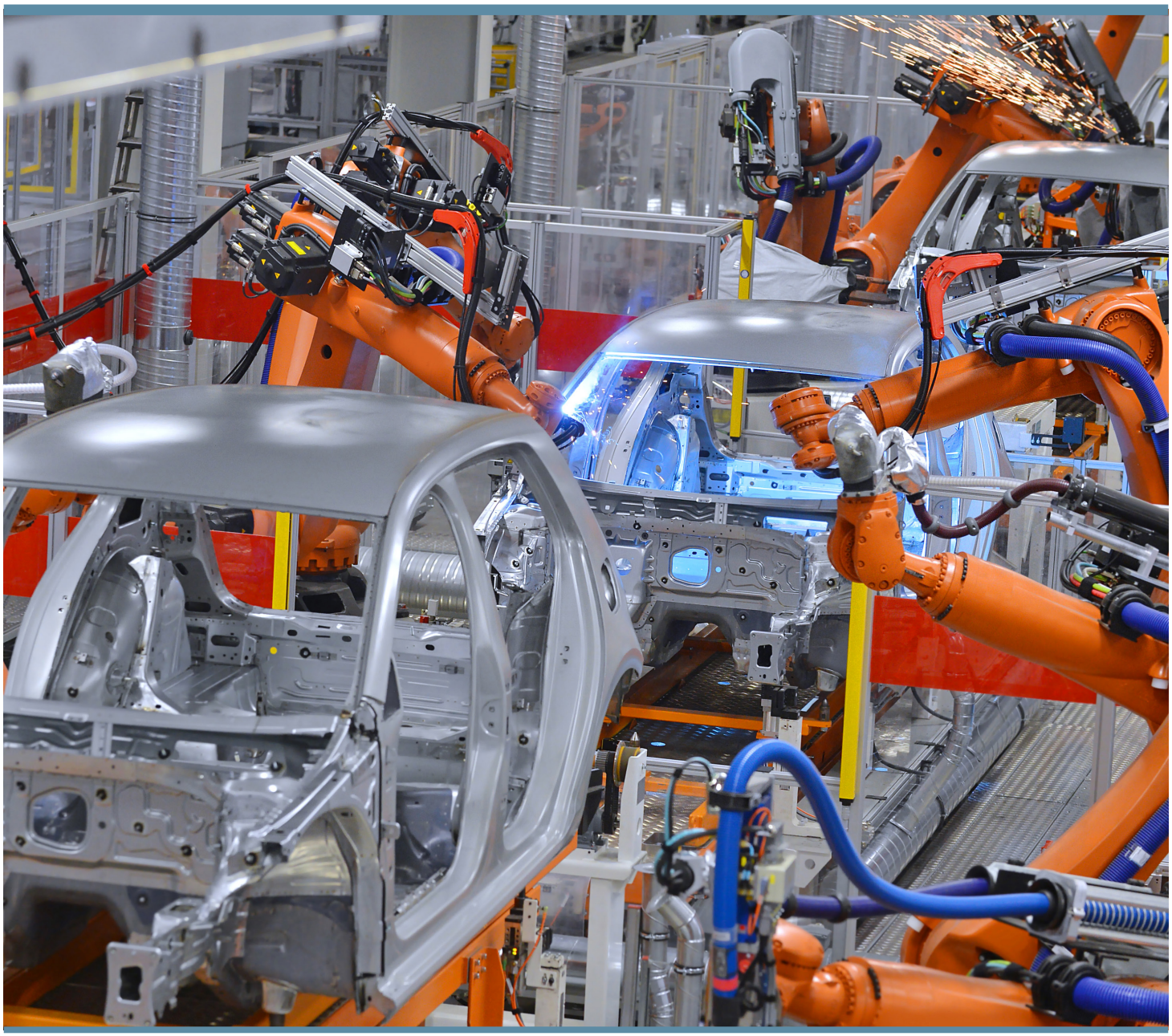
L.E.K.

Special Report

New Imperatives

Why Global Industrials Must Shift Strategic Priorities



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Introduction

At L.E.K. Consulting, one of the most important ways in which we can help our clients is to listen. Those of us on the Global Industrials team have been doing a lot of that lately. Clients have been talking to us about the enormous upheaval they are experiencing — whether they are in industrial equipment, chemicals, construction, automotive or agriculture — and they are seeking our advice on how to respond effectively to the changes in their world.

The following report grew out of those conversations. We pooled our collective intelligence to identify a set of global trends that are shaping the industrials sector, as well as the challenges and opportunities to which they have given rise. We then approached senior executives at organizations around the world to get their perspective on these trends and understand their strategies — both current and planned — for addressing them.

Our partners, managing directors and senior staff members held in-depth discussions with CEOs and other executives at more than 15 companies across a wide range of industrials sectors. These conversations confirmed the global trends facing industrial organizations. But we also learned a thing or two about how companies are responding — and those responses have been incorporated into our insights throughout this report.

This report is not meant to dictate a right or wrong approach to grappling with the challenges facing industrial organizations. Rather, it is designed to get readers thinking deeply about how and whether these approaches might work in their own companies, or how they might adapt such approaches.

We welcome your perspectives on those activities that you feel should be strategic priorities for industrial organizations. Feel free to contact us at industrials@lek.com.

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Executive summary

Industrial businesses are facing strong headwinds that are forcing them to reduce costs, re-examine their business models, build new capabilities and deal with new technologies.

Global economic growth has slowed, primarily due to the slowdown in China, which is experiencing overcapacity in manufacturing and a concurrent shift to the consumer and service sectors. Growth remains sluggish in Europe, with Brexit compounding both economic and political uncertainty. While the outlook for continued low interest rates should mitigate the situation to a certain extent, there is the looming specter of deflation, which has long been a drag on the Japanese economy.

A changing outlook for the BRIC nations, including political turmoil in Brazil, adds to global uncertainty. While emerging markets remain economically volatile, some of the brightest opportunities — albeit still relatively small and nascent — can be found in sub-Saharan Africa.

The commodity cycle is at a low point across energy, agriculture and metals; demand is relatively weak and investment has been constrained, placing sector participants under enormous financial pressure. The U.S. will continue to have access to low-cost energy, even after prices rise globally, thereby ensuring the region has a structural advantage in energy-intensive industries.

Trade flows have been fluctuating, and further developments should be expected. For example, China's policy shift from export dependence to domestic consumption will likely hold growth levels lower than in the past, and the impact on the commodity cycle is clear. Other factors that will influence trade levels include the lifting of sanctions on Iran, a continued suspension of Russia from the G-8 along with associated sanctions, and the pending exit of Britain from the European Union.

New corporate ownership paradigms have also begun to emerge. Major Asian investors are acquiring Western businesses in order to access technology and new markets. We have also seen a growing role for "super" private equity and sovereign wealth funds, which can use their deep pockets to deploy greater levels of capital productively. Activist investors are stepping up their pressure on companies and having a significant impact. All of these factors are causing boards to sharpen their strategies, particularly if they need to make the case for continuing independence.

Meanwhile, industrial businesses are feeling the effect of disruptive technologies and the power of the digital economy, which have already had an impact on other sectors. A wide range of rapidly evolving technologies offers opportunities for major increases in efficiency. At the same time, these technologies will alter the nature of demand, cause shifts in customer relationships, and affect the distribution of profits across many value chains. For example, Industry 4.0 — characterized by the convergence of networked sensors and machines (the Industrial Internet of Things, or IIoT); the capture, analysis and use of the resulting data; and improved linkages between the digital and physical worlds (e.g., augmented reality, automation and 3-D printing) — is transforming many sectors and causing headaches for many companies with traditional business models.

New competitors and participants in sector value chains, as well as increasingly influential digital giants such as Google, Amazon and Apple, are disrupting traditional competitive structures. This presents incumbents with a number of opportunities and challenges, but both will require agile strategic responses.

Implications for industrial businesses

These levels of unprecedented change have far-reaching implications for businesses across the industrial landscape. They will have to respond to:

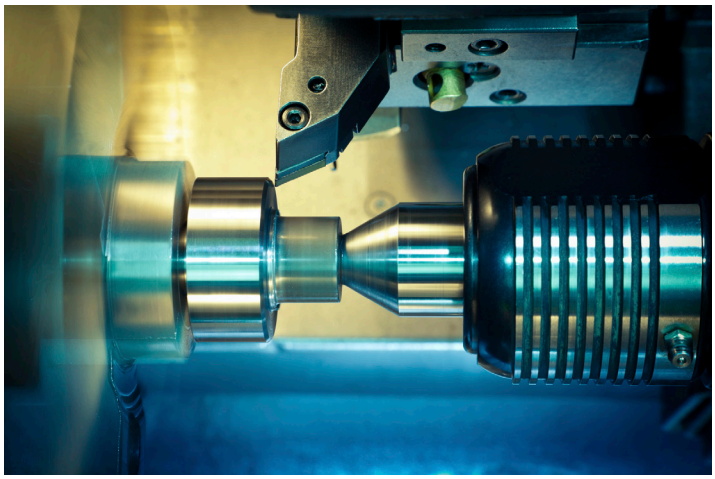
- The changing nature, source and patterns of end-market demand and, in many instances, a weak pricing environment
- Sustained margin pressure, which has given rise to a relentless need to reduce costs and increase labor and capital productivity
- The emergence of new competitors and business models that leverage emerging technologies and digital capabilities, thereby creating value chain disruption
- The increasing rate and pace of innovation across many sectors, as companies seek ways of increasing profitability to generate growth

Strategic responses

Based on our work with multinational organizations across a broad range of industrials sectors, we have observed that companies are choosing to respond to these trends in a number of ways. These observations have been reinforced by our discussions with senior executives whom we interviewed in preparation for this study. The remainder of this report will explore the following strategies in greater detail:

Industrial trends and sales model transformation. How and what companies are selling have begun to change. The rise in omnichannel business models is, according to MIT, "the central force shaping the future of ecommerce and traditional selling models alike."[1] These models allow companies to deepen and broaden the customer experience. Such companies are differentiating themselves by tailoring their offerings and pricing to specific customer situations — for example, lower overall price, whole-life costing models for capital goods or embedded process efficiency solutions.

Re-evaluating and optimizing value chain participation. Industrial organizations are taking a close look at where they participate in the value chain and focusing on those activities with the greatest potential for creating value. This is fundamentally changing the nature of what these companies do. Some manufacturers are successfully evolving their business models with greater product customization paired with solutions. Others are using partnering and outsourcing to enhance their capabilities without taking on additional human capital. Still others are deploying selective forward integration to get closer to the end customer — for example, by providing services or controlling distribution.



Developing a "match-fit" organization. Companies are simplifying their organizational structures, while deploying best-in-class human resources strategies, so they can increase their agility and ability to respond in a rapidly changing business environment. Many are adopting lean and agile organization design principles. Industrial businesses are acutely aware of a looming talent shortage, as younger workers look to other sectors for their careers. They are therefore focused on developing new capabilities within their established workforces while retaining scarce skills. At the same time, they are creating strategies to "sell" their businesses to up-and-coming talent.

Embracing and leveraging disruptive technology and digital capabilities. Disruptive technologies such as additive manufacturing, robotics and automation, and those related to the IIoT have the potential to transform industrial markets by reshaping demand for products and services — and, perhaps more critically,

[1]Green, James (January 27, 2014). **"Why and How Brands Must Go Omni-Channel in 2014."** *Marketing Land*.

by redefining how those products and services are delivered, and by whom. Furthermore, the rate at which innovations are coming to market is increasing, intensifying their impact. Failure to recognize the advent of such technologies, understand their effect and strategically respond is a significant risk for all industrial companies. However, for every loser there is a winner — those who embrace the potential of disruptive technologies will gain significant competitive advantage.

Configuring for fast-cycle R&D, innovation and technology adoption. Despite low growth in many industrials sectors, leading companies are looking for ways to innovate and bring products and solutions to market more quickly. Some are infusing their cultures with a more innovative mindset. Others are focused on leveraging external know-how to jump-start innovation through partnerships with suppliers, government organizations and academic institutions. Another approach involves recognizing and adopting ideas identified by others via innovation or crowdsourcing platforms.

All told, the industrials sector is under significant duress and, in many instances, may face a future with relatively limited growth prospects. However, while some businesses are less than sanguine about the medium-term outlook, others see opportunity on the horizon, whether through leveraging the IIoT or by wresting greater value from a streamlined supply chain.

The changes required to take advantage of these opportunities will be significant. The necessary transformation will mean building new capabilities, revamping sales strategies, embracing new technologies, stepping up innovation, developing more agile and responsive organizational structures, and finding ways to expand into new markets and geographies. But it is our belief that those companies that make the transformation will be able to enter the next industrial revolution with confidence.

Our discussions with industrial organizations have made it clear that leadership has seen the writing on the wall: Shift course or risk the consequences. In the following pages, we will share a range of strategies that companies are using to remain competitive in their changing world.

Industrial trends and sales model transformation

Many industrial organizations have long used relatively traditional commercial models focused on selling a limited range of products or services. However, the viability of this approach is being undermined by a number of trends, including:

- **Supplier consolidation:** As customers invest in making their supply chains more efficient, they are narrowing their list of suppliers and demanding that any remaining suppliers provide an ever-broader set of solutions.
- **Data + analytics = power:** Industrial enterprises are finding transformative ways to make use of customer data that can be gathered during the normal course of business, including using that data to deliver more value to customers.
- **Disruptive technologies**: The rise of the IIoT, or Internet 4.0, allows suppliers to become more involved in a greater range of their customers' processes. For example, equipment sensors that monitor performance may enable suppliers to deliver a maintenance management capability or even a turnkey service offering.
- **Emerging and new competition:** Competition from countries like China and emerging economies is intensifying. Rising wage rates in China are being met with unprecedented investment in automation. The result is increasingly higher-quality products and a more responsive supply chain. Companies in developed economies must continue to improve their ability to deliver differentiated sales and commercial support to offset competitive pressures.

In response to these trends, leading organizations are moving away from a company-centric sales approach and instead transforming their commercial models to improve the customer experience and differentiate their products and services.

The evolving industrial sales model

As industrial organizations re-examine their sales models, more forward-looking companies are revamping their sales approach in a number of ways (see Figure 1).

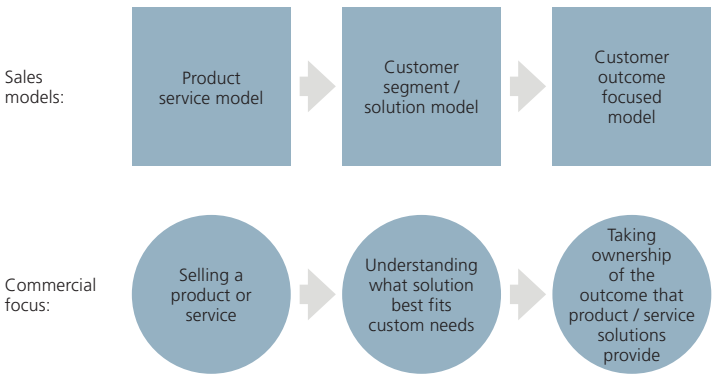
Solution selling. The traditional model of organizing sales and commercial resources around product or service categories — the product-centered approach — has been evolving into a more solution-centered approach. This requires companies to strengthen their engineering resources for a systemwide perspective on customer problems. As a result, a company will often develop solutions that go beyond its core product or service. As one European executive with whom we spoke noted: "In our business it's much more about identifying technical support for the sales channel, not the traditional sales approach. It's a much more engineering-oriented approach. That's a trend that's been going on for a while."

Industrial enterprises that focus on original equipment manufacturer (OEM) customers have been at the forefront of investing in solutions. The ability to interact with customer engineering staff to develop tailored solutions can be an important differentiator.

Customer segment sales organization. Other companies have found that simply adding engineering resources is insufficient. Rather, they must focus a broader portion of the value chain on the customer. These companies have determined that the optimal path is to organize sales, marketing, product development and possibly other functions around specific customer segments. In this model, the sales force will represent a fuller line of products to a specific industry.

As one U.S. executive we interviewed noted, because industrial customers are increasingly demanding more customized or semi-customized solutions, companies may need to make organizational changes in order to deliver these solutions.

Figure 1
The evolution of a sales model



Source: L.E.K. analysis

For example, one technology company we worked with sold a range of "event" equipment to different types of organizations, including churches, stadiums, concert venues, movie theaters and broadcasting studios. Organized around individual products, it had a separate sales and marketing team for each of its core offerings. Customers often ended up seeing several salespeople from the company — one for each of its products.

After taking an in-depth look at how it was selling and competing, the company decided to reorganize around customer segments that had similar needs. Sales teams would be responsible for selling the full range of the company's products, rather than a single product, to specific customers. This model had important implications for sales force education, organizational structure and even product development. With this more customer-centric approach, the company was able to deepen and strengthen its customer relationships.

Outcome-centered selling. The next step in this evolution is sales and commercial organizations that are structured to deliver customer outcomes. For example, rather than selling a customer a specific product or service, companies can sell Internet-enabled devices and/or data analytics to manage customer internal processes. In this model, the supplier delivers the outcome for which the customer purchased the product or service, in addition to the product or service itself.

This outcome-centric approach is beginning to take hold in the outsourced customer care industry. Inbound customer care telecenters around the world have historically seen their role as addressing end-customer care issues for telecom, cable and a variety of other industries. In performing this role, they collect a significant amount of data that can be used to improve the overall end-user experience. Outcome-centered selling turns the entire notion of success on its head. Rather than success being defined as a call that resolves a customer issue, success is an improvement in the overall customer experience that eliminates the need for a call altogether. Organizations in this industry are acquiring analytical and service capabilities to move in this direction.

However, shifting to an organizational focus on customer outcomes is not easy. It often involves training personnel in customer processes and may require significant organizational change to deliver on the promise of improved customer outcomes. Executive management at industrial enterprises must commit substantial investments in a variety of functions to support this new value proposition to customers.

Making the decision to transform

The IIoT and connected products coupled with data analytics threaten to disrupt established market relationships, introduce new competitive dimensions and challenge existing business models. Yet the potential opportunities are enormous. Although the destination is becoming clearer, the journey to commercial transformation is proving to be challenging for many industrial companies. Adaptation will require fundamental changes in how industrial manufacturers are organized, how they develop new capabilities and how they approach partnering. Above all, such transformation will require a great deal of leadership and change management. One executive we interviewed acknowledged the challenge, saying, "It's hard for people to change. Trying to change on the sales side can be perceived as a risk from a business management standpoint, so there's a tendency to shy away from it."

Supplier consolidation, data analytics, disruptive technologies and emerging cross-border competition are critical trends that cannot be ignored. Depending on the extent to which companies are exposed to some of the more powerful trends sweeping the industrial landscape, they will need to balance the risks inherent in overhauling their commercial operations with the potential for achieving a more differentiated strategic position. Those companies that have embraced and shifted to an outcome-centered approach are well-positioned to realize outsized rewards.

Re-evaluating and optimizing value chain participation

Industrial value chains are under disruptive pressure on multiple fronts. OEM consolidation — driven by weakness in commodity prices, sluggish growth and systemic overcapacity — has at times resulted in OEMs' increasing their power and influence relative to downstream channels. Channel partners (wholesalers, distributors, etc.), in turn, are fighting off not only new market entrants such as ecommerce players, but also upstream OEMs seeking to develop commercial relationships directly with end users. And up and down the value chain, the digital transformation is creating new opportunities for industrial players almost as rapidly as it threatens established market positions through disruptive innovation and novel technologies.

With the value chain in flux, and with once-stable market positions less certain, it's critical for industrial organizations to reassess where and how they compete in the chain, enabling them to both identify attractive growth opportunities early on and spot potential threats to their core business.

Strategies for optimizing value and minimizing risk

Industrial organizations are taking a hard look at their participation in the value chain and zeroing in on those activities with the greatest potential for creating value. This strategic focus is fundamentally changing the nature of what companies do, and whom they do it for. Industrial manufacturers, for example, are expanding their business models both upstream and downstream to tap into more lucrative profit pools. Manufacturers are also selectively forward integrating to get closer to the end customer by providing services or controlling distribution. Industrial distributors, in turn, are seeking strategic partners to enhance their digital capabilities (e.g., ecommerce, data analytics) to counter threats of disintermediation and margin erosion.

While manufacturing organizations may consider a range of options to enhance their position and performance in the value chain, we see the following strategies as key to successful optimization.

OEMs should shift focus toward high value-added activities. Companies begin this process by assessing both the sources and likely causes of potential margin erosion. For example, supplies sourced from countries where costs are low may no longer provide savings, and markets at overcapacity will yield little or no growth opportunity; likewise, technological advantage held by competing players can quickly chip away at margins.

In shifting direction toward higher value-added activities, some proactive manufacturers are forward integrating to ensure downstream volume for high-cost upstream assets. For example, a major North American railcar manufacturer also operates a railcar leasing business to help sustain downstream demand for its upstream manufacturing business. Other OEMs are backward integrating, to secure and better control critical supply. Take, for example, an industrial crane manufacturer that recently acquired its motor control systems supplier that operates — and helps

differentiate — its crane equipment. And last, we continue to see equipment manufacturers expanding their business models to include not only product engineering but also broader application solutions. A Scandinavian diesel engine manufacturer's position in the engineering, procurement and construction (EPC) services industry for decentralized power plants is just one example among many.

OEMs should evolve their business models to address end users. OEMs are increasingly establishing direct commercial ties with end users, either forward integrating into the channel themselves, or circumventing the channel entirely to provide services directly to end users. "It seems like the momentum is shifting from B2B to the B2C market," a senior executive from

an engineering and construction services company told us. By targeting the end user directly, OEMs can exert better overall control of their brand strategy, enabling more customized product and service development and increasing pull-through demand in the market — all of which can help expand margins.

Forward integration can also help manufacturing organizations access attractive aftermarket business opportunities. For example, by supplying repair parts directly to end users, a manufacturer can monetize its installed base and fend off third-party parts suppliers. One industrial executive we spoke with observed that "most companies don't even know where their aftermarket is," and offered the leading example of an electrical utility equipment supplier that tracks its aftermarket (where the installed base is, what the wear on parts looks like, what repair schedules indicate, etc.) to focus and enhance sales force efficiency.

An aftermarket strategy can also enable more predictable cash generation, by dampening the cyclical impact of "new build" capital projects and creating a source of recurring revenue. If pursued to the logical extreme, focusing on the profitable aftermarket may lead an organization to completely upend its business model. One executive offered the example of a diesel engine manufacturer that licenses its technology to select customers that manufacture the engines themselves while purchasing the high-value components from the OEM.

OEMs and channel partners need to accelerate their digital transformation efforts. Technological innovation continues to reinvent industrial operations at every point in the value chain, putting enormous pressure on providers that have not sufficiently ramped up their digital capabilities. Within the channel, distributors face new ecommerce entrants, such as Amazon Business, that come armed with cloud-based data analytics, more efficient delivery chains and lower margin requirements.

More broadly, OEMs and distributors are drawing on IIoT connectivity and big data analytics to enable novel and value-added services — such as inventory management of critical components and consumables, automated reordering through Kanban processes and ERP integration, asset tracking to optimize logistics and detect theft, and real-time corrective repairs and predictive maintenance. These services increase the "stickiness" of customer relationships and help industrial players develop a sustainable position in what promises to remain a shifting competitive landscape.

While industrial players may take a "greenfield" approach to developing digital capabilities, they should also consider a partnering strategy with established technology players. This can accelerate speed to market and lower execution risks in staking out a differentiated and winning position. In turn, it would be mutually beneficial for technology players, giving them access to hard-earned industry expertise, established commercial relationships and operational resources not normally available in their core businesses. For example, one potential win-win arrangement for industrial distributors might be to partner with existing ecommerce players — distributors expand their market reach via cutting-edge online channel resources, while ecommerce players gain last-mile fulfillment capabilities of large, bulky industrial products their traditional shipping networks can't deliver.

Distributors should pivot their business models away from "the middle." Specifically within the channel, market trends continue to favor industrial distributors that adhere to one of two models. In one model, large-scale distributors offering a broad product range (broadline distributors, e.g., Grainger) position themselves to exploit scale efficiencies by facilitating supplier consolidation, or one-stop shopping, for customers, thus reducing transaction costs. Size and scope also give broadline companies a logistical leg up in, for example, managing the proliferation of SKUs, which is inevitable as OEMs consolidate. In the other model,

distributors with deep, customized product offerings (specialty distributors, e.g., Graybar) use well-honed customer insights to provide highly differentiated products and informed, focused support to a targeted end market.

Distributors caught in the middle — at subscale relative to the big broadline players, or insufficiently specialized by industry or category — are finding it increasingly difficult to operate profitably. To survive, these players need to increase size in order to gain scale and compete better against broadlines ("acquire or expire") or, for depth, develop a specialty model that allows them to overcome scale disadvantage through a differentiated value proposition, such as superior technical expertise in products that require a highly consultative sales approach.

Profound changes are disrupting the industrials sector's channel structures and value chain relationships, threatening to upend the business models of industrial companies that fail to act strategically. But sources of opportunity are emerging as well, providing both established companies and new entrants the potential to tap into promising new markets and relationships as they seek to optimize value and competitive advantage. Winning organizations will need both the vision to foresee these disruptions and the conviction to take bold strategic steps to win in the evolving value chain landscape.

Developing a "match-fit" organization

CEOs are constantly driving organizational adaptation in order to execute their strategies as effectively and efficiently as possible. Many businesses have to focus on cost — whether because of the slim margins in their industries or because of the continued impact of economic volatility and global competition. But that doesn't necessarily position them to differentiate their offerings, take advantage of new opportunities, or adapt to the rapid technological transformations redefining their landscapes.

Some CEOs are now taking a different tack and seeking to invest in the agility and readiness of their organizations and people — in other words, they are creating sustainable "match-

fit" organizations. A match-fit organization is one that can rapidly adapt as the business landscape evolves and can compete sustainably on the global stage.

While there are many factors required to enable an organization to run efficiently and adapt continuously, our research with industrials' CEOs has uncovered four common strategies that successful companies pursue in order to get into competitive shape. Our observations are based on both in-depth discussions with business leaders and our work with world-class organizations around the globe.

1. Achieving organizational simplicity

The findings from our research suggest that business leaders are seeking ways to streamline their organizations, instill greater agility and increase responsiveness to changing market dynamics. However, the specific approaches they have taken depend on the size and geographic reach of the business.

Small to mid-size companies need to find ways to operate and compete more seamlessly across geographies. In many cases, they have built up multiple regional operations and are trying to become more integrated global organizations. Business leaders are leveraging three important changes:

- Moving from a factory-centric view of the world to one where key functions are all focused on adding value across innovation, strategic marketing, channel management, sales, manufacturing and supply chain
- Structuring "horizontal" processes in a more seamless way across the entire global organization
- Pivoting from managing business unit profit-and-loss (P&L) statements to managing carefully chosen key performance indicators (KPIs) that encourage the right kind of performance in every part of the organization

For larger companies, the issues are the polar opposite. These businesses have often become too large to be run efficiently and controlled effectively. Leadership here needs to find ways to become more agile. Winning organizations seem to follow four approaches:

- Creating smaller, more manageable units focused on specific technologies, end markets or geographical areas
- Pushing decision-making further down the organization to increase collaboration, speed and adaptability
- Moving away from impractical P&L management, and instead focusing on setting KPIs that stress driving value for every critical part of the enterprise
- Simplifying burdensome management processes (e.g., doing away with annual performance reviews and introducing frequent, rapid evaluations based on specific projects or activities)

2. Developing new capabilities

The rapid pace of change across most industrials sectors has placed increasing demands on companies' organizational capabilities. Some of the key forces driving the need for new capabilities include:

- **Technology solutions:** Companies are integrating more and more technology into traditional product and service offerings to create differentiation. Some are even moving from selling products and services to selling outcomes (for more on outcome-based selling, see "Industrial trends and sales model transformation" in this report). Still others are leveraging mass customization to increase value.
- **Big data:** Companies are seeking to leverage the power of data both within their own operations and in their go-to-market strategies. To do so effectively calls for a combination of three distinct capabilities: (1) data management, (2) predictive modeling and artificial intelligence, and (3) marketing and commercial insight. Few industrial organizations have had such capabilities historically; however, this is changing rapidly.
- **Logistics:** Industrial companies increasingly rely on integrated logistics and web fulfillment as a core part of their operations. While they are aided by third-party specialists in many cases, there is a critical need for greater internal capabilities in order to steer the logistics strategy, manage partners and coordinate with customers.

Companies often struggle with the financial trade-offs of investing in these new capabilities, because return on investment is difficult to predict. Leaders strive to invest in those organizational capabilities that are most directly linked to their companies' broader business strategies. They are also continually evaluating outcomes based on how well these capabilities are able to boost strategy execution and financial results.

Developing winning organizational capabilities calls for much more than just human resource skills. Some CEOs are very deliberately building truly differentiated capabilities by working simultaneously on four integrated components:

- **Resources**: Leadership, people, skills, teams, interactions
- **Organizational choices:** Structures and roles, governance and decision rights, human networks and interfaces

- **Tools:** Hardware, generic and customized software, data, information, knowledge, enabling methodologies
- **Assets:** Intellectual property, physical assets, unique processes, institutional know-how, etc.

These CEOs are assembling the four components into robust capabilities with considerable vision, leadership commitment, time and investment.

3. Attracting and retaining the right talent

While attracting and retaining talent has always been important for industrial enterprises, it is especially high on CEOs' agendas today. Not only has competition for talent in the sector intensified, but many organizations also need to bring in new and unfamiliar skill sets in order to remain competitive. As digitization becomes more and more critical to business functions, winning companies are finding ways to attract and retain tech-savvy talent to help steer them through this transformation. In particular, these companies are looking for employees with expertise in the areas of innovation, materials substitution, energy efficiency and technology enablement (e.g., Internet of Things).

Attracting and retaining technical talent can be extremely challenging. For one, most companies have not traditionally sought to hire tech talent in large numbers, apart from engineers and R&D scientists, and their recruiting teams may lack the know-how to effectively search the right channels. Additionally, technology

hubs such as Silicon Valley, Boston's Route 128, and Austin, Texas, among others, are daunting competitors in the market for technical talent. Tech companies offer highly attractive packages and, for many workers, present more appealing opportunities than their counterparts in the industrials sector.

The most aggressive players are combining four approaches to help bridge this divide:

- Creating new technology and innovation centers outside of factory locations, particularly in cities and regions where there is a deep pool of technical talent
- Enhancing internal recruiting efforts and instituting HR approaches that appeal to technical talent
- Developing special ownership and incentive models to attract and build new teams and retain key individuals
- Transforming technically oriented training into professional development programs for selected resources

Industrial organizations are also looking for commercial talent. Individuals with experience in specific industrials sectors and end markets, along with technical sales capabilities, are highly prized. In addition, industrial companies seek sales, marketing and customer care professionals who have deeply embedded relationships with key customers and channel partners.

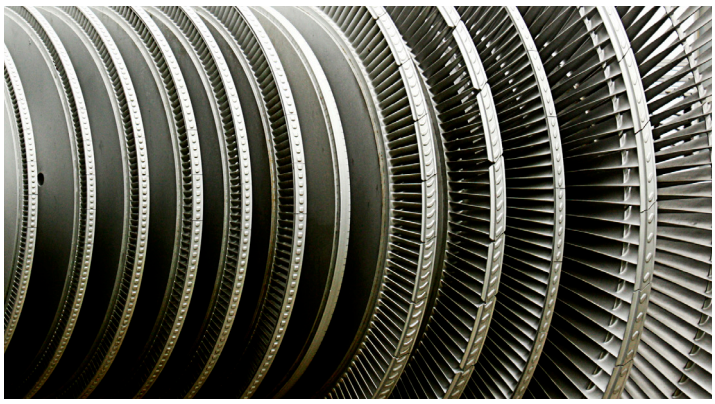
The key issues for CEOs who are in the market for commercial talent include keeping their own "stars" from jumping to better offers and finding ways to attract workers away from competitors or companies in related sectors. This requires a strong focus on staff engagement, professional and career development, competitive remuneration, and flexible work-life balance options, as well as dynamic recruiting.

4. Transforming commercial approaches

Many industrial companies are seeking to transform their commercial strategies and realign organizational capabilities with markets, channels and customers. Gone are the days of simply pushing product out the factory door. Instead, CEOs are encouraging their commercial organizations to constantly look for sources of differentiation, even for the most basic products and services.

Successful industrials companies have sought to strengthen their commercial organizational capabilities by achieving the following goals:

- Deepening channel and customer insights
- Developing rigorous customer segmentation and targeting
- Focusing sales and marketing resources on the areas with the greatest commercial potential
- Strengthening strategic pricing capabilities



In some cases, companies that have grown through mergers or acquisitions have taken steps to more closely integrate their distinct sales teams across core and acquired companies in order to engage with customers in a more unified manner.

In summary, industrial organizations face a number of significant challenges as they look for ways to make their businesses more competitive. The lessons from winning companies suggest that becoming and remaining match-fit is an achievable goal. But it takes a relentless focus on organizational processes and capabilities, staying on top of emerging trends such as digitization, and the ability to attract and retain the kind of talent that will move the organization successfully into the future.

Embracing and leveraging disruptive technology and digital capabilities

Disruptive technologies — such as additive manufacturing, robotics and automation, and the IIoT — are transforming industrial markets by reshaping demand for products and services and, perhaps more critically, by redefining how those products and services are delivered and by whom. Furthermore, the speed at which innovations can be brought to market is increasing, giving them a far more rapid impact.

Failure to recognize and respond to this trend is a significant risk for industrial companies. Conversely, those who embrace the potential of disruptive technologies can gain significant competitive advantage.

A framework for assessing the impact of disruptive technologies

While nearly all the senior executives we interviewed readily acknowledge the potential for technology and digital capabilities to disrupt the status quo, the extent of that impact varies by industry sector, value chain position and business model. Many industrial companies are simply considering how they can harness disruptive technologies to drive greater unit efficiency or operational productivity, yet the actual disruptive potential for these technologies may be far broader.

For example, according to the CEO of a global supplier of metal molding and finishing equipment, new technologies in his market are shifting the focus away from selling physical equipment and toward marketing deep application expertise. Taken to the logical extreme, the future he envisions includes companies like Amazon or Google becoming aggregators of industrial design capability, with manufacturing undertaken locally using 3-D printing.

A useful framework we employ with industrial executives to assess the degree of disruption from technology focuses on four potential effects on an industrial market segment:

1. How does the technology **improve efficiencies?** Does it lower unit costs through supply chain efficiencies or operational improvements?
2. Does the technology **lower or raise barriers to entry?** How does it alter the competitive landscape? What additional competitive success factors does it introduce?
3. What is the **impact on the value chain?** Is the nature of the customer interface altered by creating, removing or merging stages in the value chain? How can technology be used to deliver more value to customers?
4. Is end-product **demand created or destroyed?** Does it change how the end product is used or change the relative utility or economics of competing solutions?

How companies can respond to disruptive technologies

While it is impossible to predict with exact certainty how disruptive technologies will impact a given industrial market, companies can still prepare themselves to make the right strategic choices at the appropriate time. Critical to any preparation is understanding the nature of the disruption the company faces and developing strategic action plans so it can respond quickly and decisively as its market evolves. It is important to recognize that successful responses will require coordinated activity across the business, from developing customer propositions to negotiating with the supply chain (see Figure 2). For example:

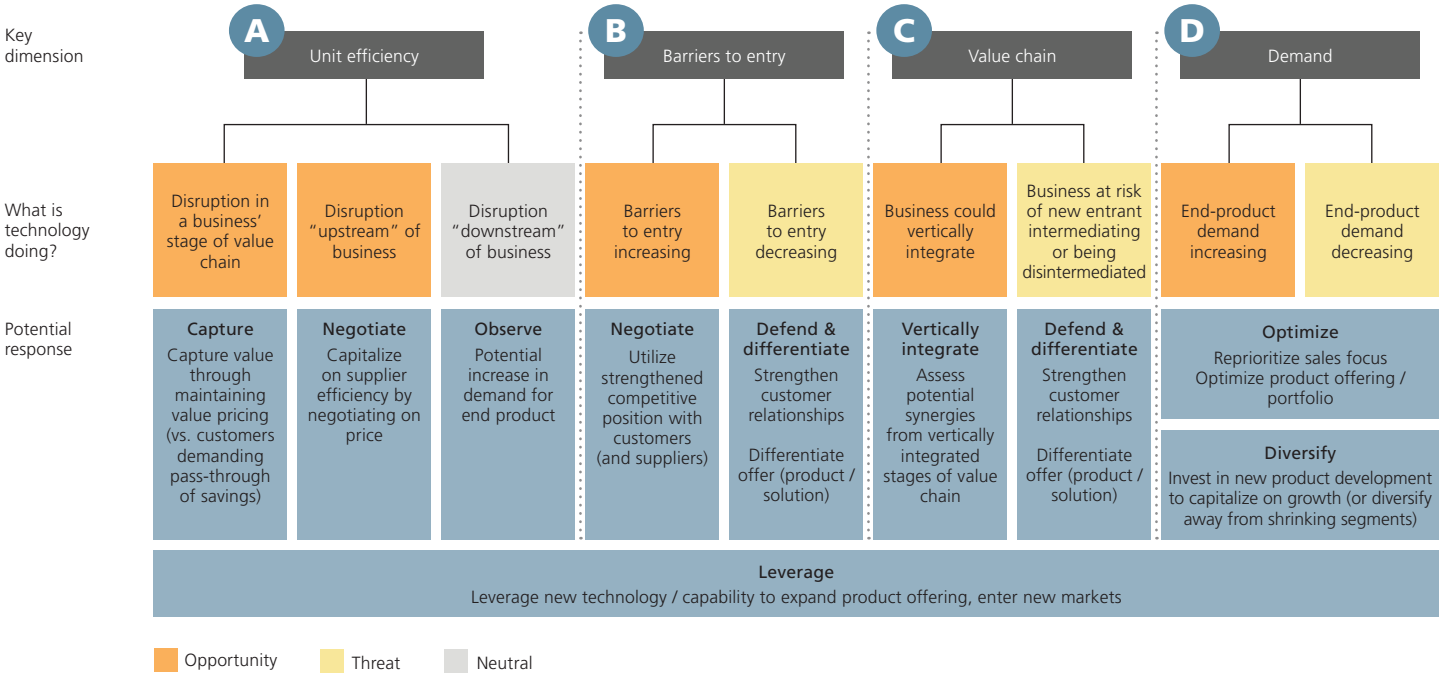
- Increased efficiency in a business's operation should be supported by a value-pricing strategy to avoid leakage of profit potential to customers
- Disruption "upstream" of a business should be leveraged to capture value through negotiating price reductions with the supply chain

- Decreasing barriers to entry and the threat of intermediation or disintermediation should prompt activity to strengthen customer relationships and differentiate product offerings
- Change in demand should lead to optimization of product portfolios, sales focus and new product development strategies in order to meet evolving customer needs

A company's R&D and innovation strategy is an important consideration, and is discussed in more detail in the next section, "Configuring for fast-cycle R&D, innovation and adoption." However, being at the bleeding edge of technology or investing heavily in R&D is not required to leverage disruptive technology. As one executive we spoke with noted, industrial companies could develop strategic partnerships with specialty technology companies (e.g., 3-D printing providers) to gain access to disruptive technology without investing heavily in internal R&D.

Choosing to develop technology in-house may be appropriate if there is a unique capability or motivation within a company to do so, or if there is a vested interest in a particular technology "winning." Playing an active role in technology development often offers an opportunity to derive unique insight or information from "inside the tent." However, in a world of finite time, resources and management bandwidth, such choices should be made carefully. If there is insufficient benefit to justify investment, or a lack of confidence in a company's ability to capture value once the technology is developed, it may be more appropriate to wait until the technology matures before investing directly.

Figure 2
Potential responses to the impact of disruptive technology



Source: L.E.K. analysis

Identifying the appropriate time for action

Given the rapid pace of change, any strategy for leveraging disruptive technology must be inherently flexible and adaptive, and executives must acknowledge that the appropriate strategic response can, and should, evolve as the technology matures. Nevertheless, certain trigger points can indicate that it is time to take action. Such triggers may include:

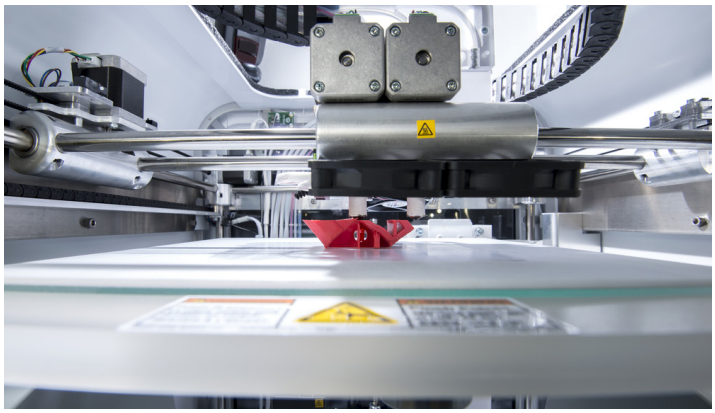
- Tipping points on the cost curve (affecting cost competitiveness vs. alternative solutions, or willingness to pay)
- "Critical mass" in customer adoption
- Availability of key technology enablers (e.g., battery technology and charging networks for electric vehicles)
- Regulatory or policy changes (e.g., subsidies or incentives)
- Acceleration of technology development (e.g., through new investment or competitor activity)

The speed of development and the breadth of impact of disruptive technologies can be overwhelming, so it's critical to act with conviction and confidence when the moment is right. Businesses that stay abreast of technological developments, understand the implications and respond appropriately will be well-positioned to realize the benefits those developments have to offer.

Configuring for fast-cycle R&D, innovation and technology adoption

The market saturation for many industrial products presents a host of challenges for companies. Yet time and again interviewees cited accelerating innovation as the key to breaking free from a low-growth market environment, and a means of creating differentiation and competitive advantage. In fact, they say nose-to-the-grindstone cost cutting can be a huge strategic mistake. As one executive at a raw materials and chemical intermediates company noted, "At the heart of every company, even a commodities company like ours, is its ability to continuously improve and innovate."

The innovation bar has been raised by an influx of new, often disruptive technologies. Additive manufacturing, robotics and automation, and the IIoT all possess the potential to redefine the products and services that global industrials have to offer and,



perhaps more critically, how and by whom those products and services are delivered. Examples include differentiating engineered products by adding service elements such as preventive maintenance and operational efficiency diagnostics, which allow customers to increase asset availability by reducing downtime. The emergence of 3-D printing allows customers and/or new participants in the value chain to assume a larger part of the manufacturing role, forcing manufacturers to rethink their business models.

Moving R&D to the next level

New technologies create opportunities across a broad range of sectors, but in order to take advantage of them, a company needs a clear R&D strategy that maximizes the impact and resulting benefits of its innovations. Such a strategy needs to deliver a range of benefits, including the following:

- **A capacity for embracing disruptive technologies:** Creating a rapid-reaction mechanism that positions the company to take advantage of emerging technologies and respond to any threats they may pose in the hands of competitors
- **Reduced cycle time:** Delivering innovative products, services and solutions to customers faster than the competition can
- **Improved productivity:** Increasing the performance and efficiency of the company's operations, which includes finding ways to automate or digitize processes to reduce costs

In framing their R&D strategies, organizations need to consider how to achieve all of these objectives or risk losing ground to more innovative competitors and new market entrants.

Nevertheless, one executive we spoke with pointed out that innovation in the industrial economy continues to be challenging. Given the margin pressures companies are under and the fact that product life cycle can be up to a decade, the incentives to invest heavily in R&D are not always powerful. However, companies that have managed to build a profitable position can defend and strengthen their positions via innovation.

Configuration choices for R&D

Based on our discussions, we have identified five paths through which companies can invigorate their R&D and innovation activities. The first two are focused on leveraging internal know-how and idea generation, while the next three look outside the organization:

1. **Reinventing the business model:** As one executive put it, "We need to tear up the status quo and look for new ways of working." When a company recasts its business model with an eye toward improving its R&D operations and cycle time, it often needs to redesign the organizational structure, culture and business practices so that innovation becomes a central focus. GE's FastWorks program is an example of

applying "lean startup" philosophies to the industrial R&D environment. The program has strong commitment from the senior management team and is credited with having reduced product development life cycles by 50% and costs by 30%.

2. **Creating insulated R&D Centers of Excellence (COEs):** The COE model separates R&D from "business-as-usual activities" and traditional corporate processes, sending a signal that R&D is a high priority for the organization. Having dedicated R&D COEs also makes it easier to facilitate experimentation and exploration of new ideas. A number of industrial companies have adopted this approach. For instance, Ingersoll Rand has established specialist laboratories in key markets such as the Czech Republic and China, with a mandate to focus on research, development and testing of product enhancements that reflect changing customer demands and modifications for local markets.

3. **Capitalizing on market developments:** Staying abreast of market developments is critical for any company, but that doesn't necessarily mean the company needs to employ an army of analysts. Companies can take advantage of the many external sources that are heavily invested in market-watching activities, including various ecosystems or crowdsourcing innovation platforms, in order to identify promising innovations they may want to adopt. Energy giant Statoil has established Innovate, a challenge-driven platform to connect with companies that are able to help find solutions for safe and sustainable energy production. Ford is a founding member of the Motor City Innovation Exchange, which acts as a public showroom and marketplace for startups to present emerging technologies to potential customers.

4. **Establishing open innovation platforms or incubators:** Supporting and developing close relationships with startups by sharing expertise and providing funding is another way to promote innovation. Industrials that help startups commercialize their innovations can benefit significantly. For example, Shell's GameChanger platform offers financial and technical support to third parties seeking to prove the commercial viability of new innovations. GE has partnered with Frost Data to form the Industrial Internet Incubator, I3, in order to rapidly develop a number of new technology companies that leverage or complement GE's IIoT. Total has established its Total Energy Ventures to promote innovation and growth opportunities identified by energy-related startups.

5. **Leveraging partners or third parties:** Combining expertise and engineering know-how with strategic partners to develop bespoke systems or components is a good way to fill in a company's capability gaps. This may take the form of partnering with a supplier, with a competitor or across sectors. For example, General Motors' component strategy has three elements: build, buy and partner. The carmaker collaborated with LG, a key component supplier, to develop the Chevrolet Bolt EV, launched in 2015. Caterpillar is another company with an active collaboration strategy. It has established partnerships across industry and government organizations and academic institutions to enhance internal engineering capabilities and speed up the pace of its R&D.

While this menu of strategic options is fairly comprehensive, there is no "one size fits all" solution — in fact, a combination of approaches is often most appropriate, depending on the nature and scope of a company's activities. Implementation and organizational choices need to be tailored to each individual company, taking into account both internal factors (such as core competencies or risk appetite) and external factors (such as short-term versus long-term market trade-offs, or competitor and value chain dynamics).

Considerations for an innovation road map

As leaders move from setting an R&D and innovation strategy to putting it into practice, it is important to consider the overall organizational context. R&D and innovation are about more than technology adoption: They are about the leadership, culture and organizational factors that enable innovation. From a strategic perspective, we see four main areas that business executives should take into account in developing their innovation road map:

1. **Leadership and vision:** Companies can articulate what they are trying to achieve through improved innovation by asking several key questions: What are our innovation goals? How does our existing offering align with our customers' evolving needs and wants? What type of step change are we aiming to deliver and in what time frame?
2. **Culture:** It is important to embed an innovation mindset into the fabric of the organization. One corporate development director we interviewed said, "Organizationally, attitude and aptitude are key, not just having great skills. We need to be paranoid about improvement, open to trying new things and committed to developing a culture that continually asks 'Why?' We need to go closer to the edge and be prepared to fail." Questions to ask include: How do we empower our employees to pursue innovation? What is our tolerance for risk and failure?
3. **Capabilities and expertise:** As the CFO of one global engineering firm stated, "You need to play to your strengths. You can't be all things to all people." That is why organizations need to understand their existing capabilities and what they will need in the future. Specifically, they should be asking: What skills and capabilities are required to deliver our innovation road map? Do we have the necessary capabilities in-house or, alternatively, the right relationships with third-party partners?
4. **Performance measurement and decision-making:** Metrics are the indicators that an innovation initiative is on track, so it is critical that companies select the right ones. For example, one CEO pointed to speed as his company's key indicator of success, including faster cycle times and revenue turns. Metrics also help companies decide where to focus and allocate resources. Questions to ask include: What does success look like? How do we measure (and reward) our success beyond short-term costs and ROI? What process will we deploy to prioritize the right projects?

Ultimately, honing their capacity for innovation is the best strategy to keep industrial organizations ahead of the competition. Companies not only must develop an innovation mindset, but they also need ways to step up the innovation cycle so that they don't become mired in a lengthy product development cycle. There are a variety of paths to improved innovation, from reaching inside the organization in order to leverage know-how and surface new ideas, to scanning the external environment and partnering with third parties whose capabilities and knowledge are complementary. But with the increasing commoditization of many sector offerings, industrial organizations cannot afford to sit on their laurels and wait for the next big idea.

Global Industrials team

L.E.K.'s Global Industrials practice comprises 29 Partners and Managing Directors across the Americas, Europe and the Asia Pacific region. We are a leading advisor to global and regional clients across the sector, with over 1,000 client assignments completed around the world in the past five years alone. Our practice leaders have a deep understanding of the strategic, commercial and operational dynamics of industrial companies, with expertise across all major industry segments. We combine this industry expertise with a rigorous analytical approach and fresh market insights to provide senior executives with the strategic guidance they need to achieve a genuine competitive advantage and superior performance.

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